


FARM FINANCIAL
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ANNUAL FARM BUSINESS REPORTS PREPARED FROM RECORDS KEPT IN THE
ILLINOIS FARM FINANCIAL RECORD BOOK FOR 38 AREAS FOR 1930

Prepared by the Department of Farm Organization
and Management of the University of Illinois

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Annual Farm Business Report

Boone County, Illinois, 1930

Prepared by R. R. Hudelson, P. W. Johnston, W. A. Gilbert, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1923 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Boone County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 31 farmers in Boone County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 4.6 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$356 a farm, there remains a rate of 3.6 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group had \$571 income to pay for his labor and management. The average value of the land included in the report was \$99 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$173 an acre. The land and improvements exclusive of the residence averaged \$132 an acre.

* E. C. Foley, farm adviser in Boone County, cooperated in supervising and collecting the records on which this report is based.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level, they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year, with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that the average farm in this area in 1930 had an increase in inventory amounting to \$53, while the surplus of sales over expenses was \$2621. For the more successful farms, the corresponding figures were \$662 increase in inventory and \$3362 surplus of income over expenses. For the less successful farms the figures were \$910 reduction in inventory and \$2288 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories for central and southern Illinois was a combination of lower prices and of smaller supplies due to the drought. For Boone County, however, the farm account cooperators show higher average crop yields in 1930 than in 1929. The greater reduction in inventories on the less successful farms was due to a reduction of about 13 cattle per farm between the beginning and end of the year, while the more successful farms had an increase of 2 cattle and 8 hogs per farm. Both groups of farms had average increases of over 700 bushels of corn per farm between the beginning and end of the year.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only

the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity, since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2681 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 6 acres difference in average size between the most profitable 10 farms and the least profitable 10 farms, the average size of all farms being 206 acres. The difference in percentage of tillable land was only 3 percent. Difference in acreage was not an important factor in the difference in income. The more successful farms were 6 acres smaller but due to their higher percentage of tillable land they averaged 12 acres more tillable land per farm. The big difference between the two groups was in the amount of business done per acre. The difference in gross income per farm in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule.

As a rule, one of the important advantages of the more successful farms is that of larger crop yields. In this case, however, there was little difference in crop yields between the two groups. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$182 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$118. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$64 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$2600 worth of feed which was fed on the average farm in this area this advantage of \$64 a hundred amounts to a total of more than \$1650 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$155 dairy sales per dairy cow as compared with \$108 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference. The livestock investment per farm amounted to \$20.17 for the more profitable farms and \$13.25 for the less profitable farms.

The labor efficiency was much higher on farms of the more successful group. They had 67 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$22 as compared with \$41 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income, the most profitable 10 farms had an advantage of \$19 for each \$100 of income.

The combined cost of feed for horses, horse depreciation, and power and machinery per crop acre was \$1.63 higher on the less successful farms.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$27.82 and an expense of \$13.19 an acre as compared with \$16.67 income and \$15.13 expense on the least profitable 10 farms. This resulted in average net incomes of \$14.63 and \$1.54 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Boone County for the years 1929 and 1930, inclusive. The rate earned was lower for 1930. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In two years it has varied from \$571 to \$1146. In this area the difference was almost entirely due to the change in prices since crop yields were higher in 1930 than in 1929.

Comparative Earnings and Investment Figures on Farms in Boone County for 1929-1930

Items	1929*	1930
Number of farms - - - - -	51	51
Average size of farms, acres- - - - -	194	206
Average rate earned, to pay for management, risk and capital- - - - -	6.3%	4.6%
Average labor and management wage - - - - -	\$1 146	\$ 571
Average value of land per acre- - - - -	103	99
Average investment per acre - - - - -	178	173
Investment in livestock per farm- - - - -	4 525	4 583
Investment in cattle per farm - - - - -	3 261	3 059
Investment in hogs per farm - - - - -	518	727
Investment in poultry per farm- - - - -	149	159
Gross income per acre - - - - -	28.20	22.01
Operating cost per acre - - - - -	17.08	14.01
Net increase from crops per farm- - - - -	--	548
Miscellaneous income per farm - - - - -	56	42
Livestock income per farm - - - - -	5 416	3 947
Gross income per farm - - - - -	5 472	4 537
Cattle income per farm- - - - -	1 009	313
Dairy sales per farm- - - - -	2 866	2 231
Hog income per farm - - - - -	994	965
Poultry income per farm - - - - -	375	316
Average yield corn in bu. - - - - -	38	45
Average yield oats in bu. - - - - -	30	50

* Boone, McHenry and Winnebago counties in 1929

Boone County, 1930

Item	Your farm	Average of 31 farms	10 most profitable farms	10 least profitable farms
Capital Investments--Land - - - -		20 449	19 488	21 770
Farm Improvements - - - - -		6 751	7 225	6 249
Horses- - - - -		465	514	447
Cattle- - - - -		3 059	2 920	3 606
Hogs- - - - -		727	1 010	716
Sheep - - - - -		173	115	105
Bees- - - - -		---	---	---
Poultry - - - - -		159	134	178
Livestock--Total- - - - -		4 583	4 693	5 052
Machinery and equipment- - - -		1 816	2 015	1 869
Feed, grain and supplies - - - -		1 996	1 786	1 858
Total Investment- - - - -	\$	\$35 595	\$35 207	\$36 798
Receipts--Net Increases				
Horses- - - - -		---	---	---
Cattle- - - - -		313	201	457
Hogs- - - - -		965	1 376	706
Sheep - - - - -		122	165	37
Bees- - - - -		---	---	---
Poultry - - - - -		93	132	---
Egg sales - - - - -		223	251	259
Dairy sales - - - - -		2 231	2 982	1 481
Livestock--Total - - - - -		3 947	5 107	2 940
Feed, grain and supplies - - - -		548	599	543
Labor off farm - - - - -		32	13	29
Miscellaneous receipts - - - - -		10	--	19
Total Receipts--Net Increases - -	\$	\$ 4 537	\$ 5 719	\$ 3 531
Expenses--Net Decreases - - - - -				
Farm Improvements - - - - -		287	318	309
Horses- - - - -		29	1	55
Miscellaneous livestock decreases		---	---	3
Poultry- - - - -		---	---	---
Machinery and equipment - - - -		526	466	647
Feed, grain and supplies- - - - -		---	---	---
Livestock expense - - - - -		65	76	65
Crop expense- - - - -		274	262	283
Hired labor - - - - -		331	246	299
Taxes - - - - -		319	296	357
Miscellaneous expenses- - - - -		32	30	35
Total Expenses--Net Decreases - -	\$	\$ 1 863	\$ 1 695	\$ 2 053
Receipts Less Expenses- - - - -	\$	\$ 2 674	\$ 4 024	\$ 1 478
Total unpaid labor- - - - -		1 025	1 016	1 151
Operator's labor- - - - -		702	690	721
Family labor- - - - -		323	326	430
Net income from investment and management - -		1 649	3 008	327
Rate earned on investment - - - - -	%	4.63 %	8.54 %	.89 %
Return to capital and operator's labor and management		2 351	3 698	1 048
5 percent of capital invested - -		1 780	1 760	1 840
Labor and management wage - - - -	\$	\$ 571	\$1 938	\$ - 792

Boone County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in		L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & Invest. equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm		
	Corn	Oats	Barley	Cattle					Hogs	Poultry	Man labor	Operating expense		Per acre	Per farm
					Per acre	Per farm									
11.63	66	71	50	162	274	338	220	206	26	2.00	9	30	36	8 000	345
10.63	63	68	48	152	254	318	210	196	25	2.50	12	35	34	7 500	325
9.63	60	65	46	142	234	298	200	186	24	3.00	15	40	32	7 000	305
8.63	57	62	44	132	214	278	190	176	23	3.50	18	45	30	6 500	285
7.63	54	59	42	122	194	258	180	166	22	4.00	21	50	28	6 000	265
6.63	51	56	40	112	174	238	170	156	21	4.50	24	55	26	5 500	245
5.63	48	53	38	102	154	218	160	146	20	5.00	27	60	24	5 000	225
4.63	45	50	36	92	134	198	150	136	19	5.50	30	65	22	4 500	205
3.63	42	47	34	82	114	178	140	126	18	6.00	33	70	20	4 000	185
2.63	39	44	32	72	94	158	130	116	17	6.50	36	75	18	3 500	165
1.63	36	41	30	62	74	138	120	106	16	7.00	39	80	16	3 000	145
.63	33	38	28	52	54	118	110	96	15	7.50	42	85	14	2 500	125
-.37	30	35	26	42	34	98	100	86	14	8.00	45	90	12	2 000	105
-1.37	27	32	24	32	14	78	90	76	13	8.50	48	95	10	1 500	85
-2.37	24	29	22	22	--	58	80	66	12	9.00	51	100	8	1 000	65

Boone County, 1930

Factors helping to analyze the farm business	Your farm	Average of 51 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -		206	206	212
Percent of land area tillable - -		85%	.90%	82%
Gross receipts per acre - - - - -		22.01	27.82	16.67
Total expenses per acre - - - - -		14.01	13.19	15.13
Net receipts per acre - - - - -		8.00	14.63	1.54
Value of land per acre- - - - -		99	95	103
Total investment per acre - - - -		173	171	174
Acres in Corn - - - - -		66	68	69
Oats - - - - -		28	30	28
Barley - - - - -		24	29	24
Crop yields--Corn, bu. per acre- -		45.0	48.6	44.5
Oats, bu. per acre- -		49.5	49.6	54.2
Barley, bu. per acre		36.4	36.8	36.4
Value of feed fed to productive livestock- - - - -		2 632	2 804	2 485
Returns per \$100 of feed fed to productive livestock -		150	182	118
Returns per \$100 invested in:				
All productive livestock- - -		102	123	76
Cattle- - - - -		92	114	65
Hogs- - - - -		134	138	111
Poultry - - - - -		198	242	165
Dairy sales per dairy cow - - - -		136	155	108
Investment in productive livestock per acre		18.71	20.17	18.25
Receipts from productive livestock per acre		19.15	24.84	13.87
Man labor cost per \$100 gross income- - - - -		30	22	41
Man labor cost per acre - - - - -		6.51	6.09	6.76
Value of feed fed to horses - - -		286	288	317
Power and machinery cost per crop acre- - - - -		5.57	4.89	6.52
Expenses per \$100 gross income- -		64	47	91
Machinery cost per acre - - -		2.55	2.27	3.05
Farm improvements cost per acre		1.39	1.55	1.46
Farms with tractor- - - - -		81%	80%	70%
Excess of sales over expenses - -		2 621	3 362	2 288
Decrease in inventory - - - - -		Inc. 53	Inc. 662	810

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

were discontinued. Similar records are available for Champaign and Piatt counties for 1920-1922 showing a cost to produce corn of \$29.59 an acre. The records for Champaign-Piatt counties for 1927-1929 show some decline in acre cost but the average cost was still \$26.39. If we assume the same decline for Hancock County the average cost would be \$23.49 in 1927-1929 or \$4.07 higher than in 1913-1916. The average price received for corn on the Hancock County farms where cost records were kept during the period 1913-1916 was 58 cents a bushel or about the same as it would bring today.

Similar figures for southern Illinois are found in the Franklin County records showing an average acre cost for corn of \$15.61 in 1913-1916 rising to \$27.65 in 1920-1922 when the records were discontinued. Similar records for Clinton County for 1926-1928 show a cost of \$21.35 an acre. These records are kept on a comparable basis and bear out the statement that corn production costs are 20 to 35% higher than before the war, while corn prices are down to the pre-war level in spite of a short crop. The situation with respect to the small grains, wheat and oats, is even worse since present costs bear about the same relation to those of pre-war days as in the case of corn, while prices have declined to a level well below that of 1913-1916.

Some question may be raised as to the advisability of including the interest on land investment in these cost figures, but in many cases a considerable part of the interest charge represents an actual payment on mortgage indebtedness. When interest charges are eliminated it does not change the relationship of costs between pre-war and after-war periods. The most recent after-war figures remain considerably above those of 1913 to 1916.

This variation in cost of production from period to period is significant as indicating the greater difficulty in securing a net farm income comparable to that of pre-war days. Even when secured, the same money income does not buy as large a quantity of goods and services owing to the higher cost of these items purchased for the family living.

This appears to be a pessimistic view, but it is not without hope as eighteen years of cost studies on Illinois farms have shown. These cost of production studies by the University of Illinois have shown a wide variation between neighboring farms in the cost of producing a bushel of grain, a hundred pounds of pork, or a unit of any other farm product. In fact, these records commonly have shown that in any group of 15 to 20 farms located in the same county on similar soils and paying about the same prices for labor and supplies the cost of the least efficient producer is twice that of the most efficient producer. These facts indicate that many farm operators have the opportunity of decreasing their costs if they can attain a degree of efficiency equal to or above that of the average farm as farms are now operated.

Another view of this situation is furnished by the results from the simple farm accounts which more than two thousand Illinois farmers are now keeping in cooperation with the Department of Farm

Organization and Management of the University. In some cases, these accounts have been kept continuously on the same farms for fifteen years. The results from the large number of records available invariably show a wide variation in net earnings between farms in the same county where soil and weather conditions and the prices of labor and supplies are similar. Since the farmers in local areas studied commonly receive about the same prices for their products, it is evident that most of the higher level of earnings on the more successful farms is due to a lower cost of production for a unit of product sold. The difference in net earnings between the least successful third and the most successful third of all farms keeping accounts in a given county usually ranges from \$1500 to \$3000. This is between groups of farms which have equal opportunities so far as size and soil type are concerned.

Production at low cost is not easy and natural limitations of the farm or its operator may prevent its accomplishment in some cases. It offers, however, a genuine ray of hope for those farms not too badly handicapped by nature, particularly if they are in the hands of operators who are not content with average or lower success and who have the ability and perseverance to attain a high degree of efficiency. During the past 15 years the comparison between farms shows that the difference in earnings between the best and poorest farms is gradually becoming greater, due to the maintenance of soils and the adoption of more efficient practices on some farms contrasted with the depletion of soils and no compensating improvements in efficiency on others.

The past ten years have proved a severe testing period for farms. Those which have maintained relatively good and stable earnings are well worth studying with a view to learning how they are organized and operated. What is it that has enabled them to produce at costs low enough to leave a margin of profit in spite of low prices?

A study of these successful farms has shown that they are invariably in the hands of operators who have given time and thought to planning and conducting their farming operations so as to get a maximum of good quality product from every acre of land, every day of available labor, every unit of horse or tractor power, every machine, and every bushel of grain or ton of roughage. If we are to judge by the records from these farms it appears to be impossible to get a maximum of product from every unit of labor, land, power, equipment, or feed, if plans are not made with the best thought and the use of the best facts available or if these plans are laid only one season ahead. It is success in getting a maximum of product from each unit of cost which gives the low costs so necessary in these times of prevailing low prices.

Successful Farms Make Efficient Use of Land

To get a maximum net profit from each acre of land, these successful farms practically all have planned and carried out carefully considered cropping systems and soil programs. Crop rotations have been known and recommended for many years, but if we consider the rank and

file of farms just as they are, relatively few have adopted and carried them through. Yet we find that most of the consistently successful farms do have and follow rotations. Their rotations usually are such as to keep as much of the land as possible in those crops which normally have the widest margin between cost per acre and income per acre. They also supply enough organic matter and nitrogen to give high yields. With crops that have the highest net value and yields at a high level the land charge for each unit of sales is relatively low. This is such an important factor that it seems evident that many farms unable to produce reasonable yields of saleable crops are rapidly going out of use for crop production under present conditions of low prices and high costs. It is essential that the cost of taxes and other land charges be distributed to a large product per acre in order to keep the cost for a bushel or other unit of product at a low level.

Besides their cropping systems, these successful farms have had corrected the natural or acquired shortcomings of their soils. In Illinois this usually has meant a program of testing the soil and applying limestone or phosphate where needed. As a rule financial conditions have not permitted the satisfying of soil needs in a year or two but tests were made, the program planned, then carried out over a period of years.

The farm operator who only looks ahead a year at a time or who lacks the persistence to overcome obstacles seldom carries through such a program. It should be recognized also that some lands have such serious handicaps as to raise the question whether they should not be retired from crop production, rather than to incur the necessary costs for correction. The costs may be out of proportion to the income which such lands may be expected to yield when their remediable faults have been overcome. The practical question is whether or not such lands will yield enough crops so that at probably prices they will pay annual operating costs plus a sum equal to the interest and retirement charges on the cost of improvement. The increase over the yield of the same land uncorrected may be large enough to pay for the cost of improvement and still the yields may be definitely too low to pay operating costs plus improvement costs. In such cases the land is better retired before incurring the expense for improvement.

Further steps in securing efficient use of land have included (1) the use of crop varieties capable of yielding a maximum of good quality product under the particular soil and weather conditions, (2) the guaranteeing of healthy, vigorous seed through seed testing, (3) the avoiding of insect and disease losses through such control measures as are now known to those who follow the work of our agricultural experiment stations. Much land is wasted in a field with a poor stand of crop, and this unoccupied land must be charged to the crop growing on the occupied portion of the field. This means a high cost for land. These unoccupied spaces also waste labor, power, and equipment since they must be tended and yield no product.

Labor, Power, and Equipment Used Efficiently

Getting low costs for labor, for power and for equipment can best be brought into one plan. Such a plan involves the selection of a well balanced cropping system which uses available labor, power, and equipment through as many months as possible avoiding extremely heavy periods of demand. These heavy demand periods make necessary the hiring of extra labor at the highest priced seasons, such as harvest time; the use of inexperienced labor and the carrying of excessive amounts of work stock or equipment for use during short seasons.

Labor, power and equipment are in some degree interchangeable. During the past 25 years the problem of choosing the best combination of these factors to suit each individual farm has become more complex and more difficult. This has been due to the introduction of new kinds of power and equipment, and to changes in the level of farm wages. During and since the war period relatively high wages have stimulated the substitution of power and equipment for a part of the labor formerly used. This was done by equipping each man with a larger unit of power and with machines capable of doing more work per day. So long as the increased cost of power and machinery is offset by a reduced labor cost either through hiring less labor or turning out more saleable product per day of labor the shift is justified. It is probable, too, that in some cases the extra costs for power and equipment are offset by increased yields resulting from more timely soil preparation and crop planting. This improvement in yields is not evident from our analysis of farm accounts, however, and probably should be considered as a minor factor in determining the best combination of labor, power, and equipment. Decisions as to the purchase of new units of horse or tractor power or new machines should be based largely on the combined costs for labor, power, and equipment. Costs may well be estimated with and without these items.

Consideration should, of course, be given to the quantity and value of the product to be expected in each case. In other words, it is the effect on the net income of the entire farm business which should determine the choice. Sometimes a machine or unit of power is purchased to use on too small an enterprise. Where the cost of the new equipment or unit of power is relatively large, it may be advisable (1) to discontinue the enterprise, (2) care for it with the equipment already owned, (3) enlarge the size of the enterprise so that its income may justify the new equipment, or (4) purchase equipment in cooperation with neighboring farmers.

Getting efficient use of labor, power, and equipment also requires a good field layout and a reasonably good arrangement of buildings and lots. Planning and arranging a good field layout is avoided on too many farms because it is difficult where there are ditches or other obstructions. Experience has shown that it is possible on most farms, however, and its costs are chiefly represented in thinking and labor which can be done in those seasons when time can best be spared from seasonal work.

Any plan for labor and power efficiency should also include a plan for winter employment at productive work. For most of the successful farms on which we have secured accounts, this has meant the use of livestock. Those farms without livestock or other productive enterprises requiring winter work have a considerable season when the available labor and power are not turning out any saleable product. The wages of labor for this time and the interest and depreciation on horses or tractors must be charged to the product of the crop growing season. This increases the cost of crops produced.

Successful Farms Secure a Maximum of Product From Each Unit of Feed

One of the most important factors causing higher earnings on the more successful farms has been that of getting a high return for each unit of feed fed. Since the farms in any local accounting study have about the same market outlets this has meant that those farms securing this higher net return are producing meat, milk, and eggs at lower costs. In other words, they are getting a large amount of saleable product from each \$100 worth of feed. How do they do it? First, they have the kind of livestock that can use the feeds they raise, and they see to it that these livestock are efficient in converting feed into meat or milk as the case may be. In recent years a big advancement has been made in the efficiency of the best strains of hogs, dairy cows, and other kinds of livestock in converting feed into livestock products. This has meant more product per unit of feed or lower feed costs for meat, milk and eggs. Second, those farmers showing higher, more stable earnings, have planned and used systems of sanitation to insure vigorous health and rapid growth. They have realized that feed fed to unthrifty animals is wasted. Third, they know that in feeding they must supply feeds in about the right proportions to make the meat or milk they are after. An excess of one feed with a shortage of another means a waste of the feed which is fed in excess. Wastes mean high cost because the wasted feed must be charged to the product. Fourth, in most cases they practice feeding home grown feeds because they know that their own feeds usually are cheaper than similar feeds grown by some other producer and shipped to them accumulating freight and handling charges. To have the right feed, however, requires looking ahead and planning. The cropping system and the kinds and numbers of livestock must be balanced against each other.

An Example of a Low Cost Farm


As an example of what has been accomplished by an efficient, low cost production program, the following charts covering a farm in Champaign County are presented. This farm has been in the standard farm accounting service for seven years and has averaged $6\frac{1}{3}\%$ on the total farm investment for the seven years 1924 to 1930 inclusive. The land is valued at \$190 an acre. There are some farms which show a higher average rate earned but this is one of the most consistently profitable farms on which we have complete cost accounts. The farm is of good size and shape with a good field layout and cropping system as shown in Chart 1. It has as livestock enterprises dairy cows, hogs, and

chickens as shown on Chart 2. For power there is an old three bottom tractor and 6 work horses. The general plan of organization is systematic and efficient, conforming rather well to the principles here presented. The hog enterprise with only two to three brood sows is too small to show a very high degree of efficiency when measured by cost records. As Chart 3 shows, pork constitutes the only product which on this farm is produced at higher than average cost. Much of the labor and some of the equipment would take care of a larger number of brood sows with little increase in cost. The farm is flat around the farmstead, however, and not very well adapted to hogs. The milk is sold through a producers marketing association in Champaign and Urbana. It is picked up at the farm. The other products including corn, oats, soybeans and hogs are sold through the local elevator or in the case of hogs, shipped through a local shipping association. The work is planned ahead and carried out in a timely manner so far as the season permits.

The results have been reflected in comparatively stable earnings on a relatively high level as the average rate of 65% for seven years shows. That the relatively high earnings are due chiefly to low costs of production is evident from the cost records, results of which are shown in Chart 3. This chart is made up with the production cost of the highest cost farm at the bottom of each thermometer scale, the cost of the lowest cost farm at the top of each scale, the cost for the average farm on the middle line, and with the "Mercury" of the thermometers indicating the cost on this well organized Champaign County farm.

The charts and other records bring out very clearly what has been found true of nearly all those farms which are known to be succeeding well above the average farm, namely, that they are well planned and efficiently operated. Chart 3 shows that an important reason for the success of this farm is that it produces at low cost. So long as farm prices seem destined to remain on a low level, this is an important observation and farms such as this one which have succeeded above the average through the trying period since the war are worth studying by those who are responsible for operating farms.

Chart No. 1--FIELD PLAN AND CROPPING SYSTEM
240 ACRE FARM IN CENTRAL ILLINOIS

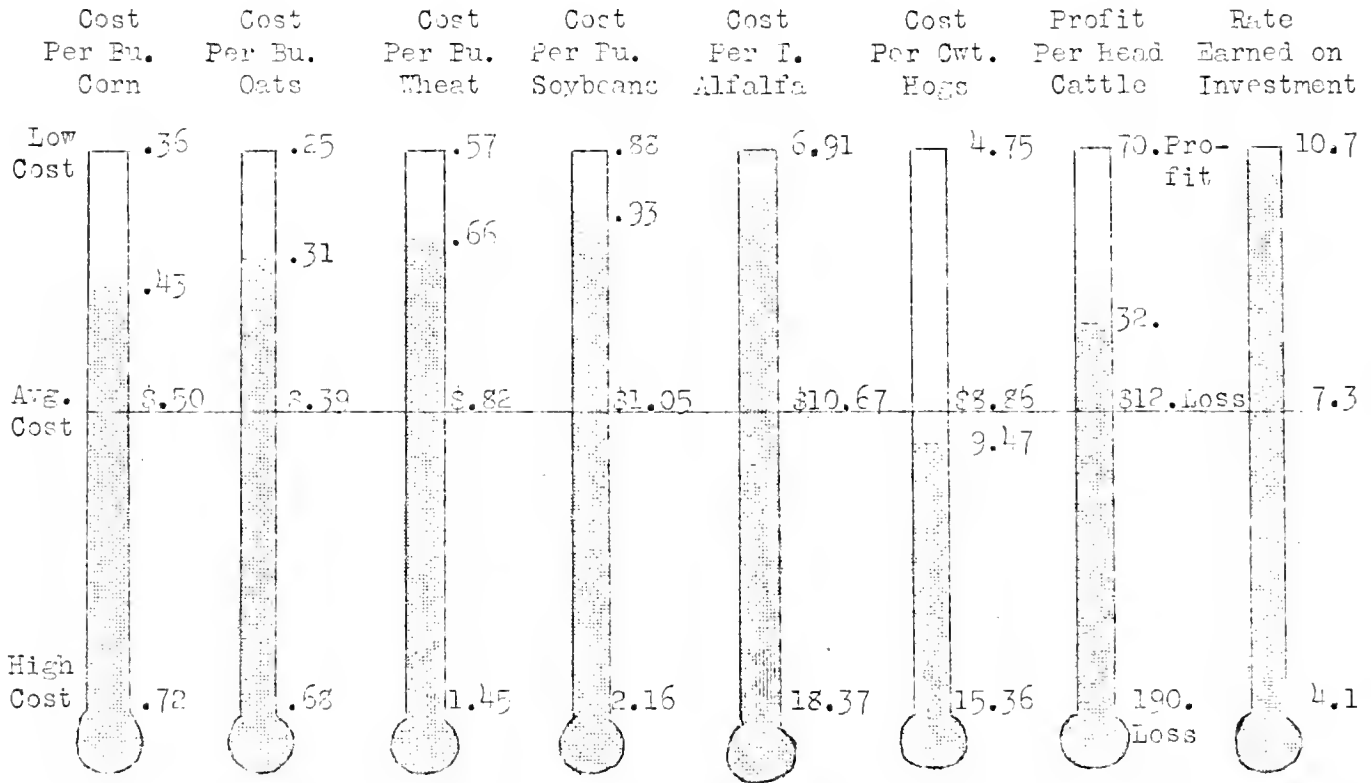
Clover 40 Acres		Corn 40 Acres		Corn 40 Acres	
Oats 20 Acres	Wheat 20 Acres	Al- fal- fa 8 Acres	B.G. 4 A	Wheat 20 Acres	Soybeans 40 Acres
					

Farm No. 43 Cost Route 1929

Chart No. 2--LIVESTOCK NUMBERS AND INCOME ON THE ABOVE FARM

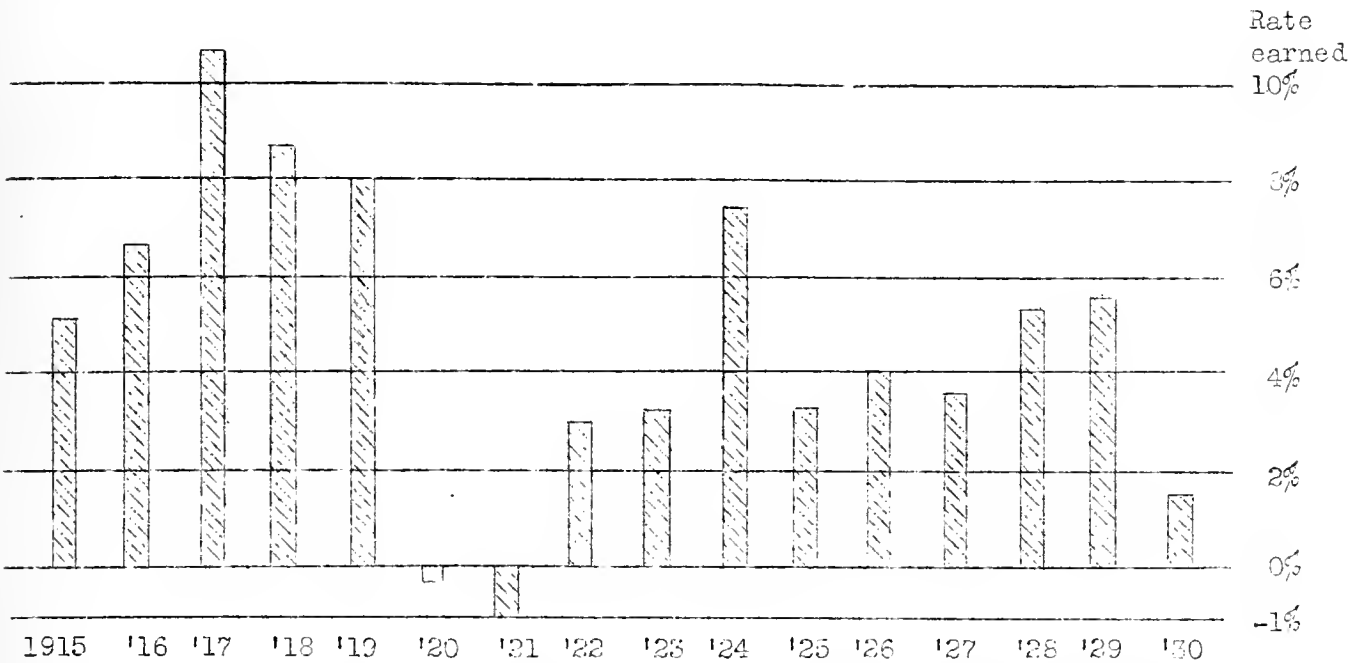
	Numbers	Income
Horses		
Mature	6	
Colts	2	
Cattle		
Dairy cows	7	
Heifers	3	
Calves	3	
Bull	1	
Milk produced	64944 lbs.	
Total income from cattle		\$1973
Hogs		
Sows	3	
Snoats	13	
Total income from hogs		437
Chickens		
Total income from poultry	120	425
Total income from livestock		\$2835

Chart No. 3--RELATIVE COSTS OF PRODUCTION ON
21 CHAMPAIGN COUNTY FARMS-1929

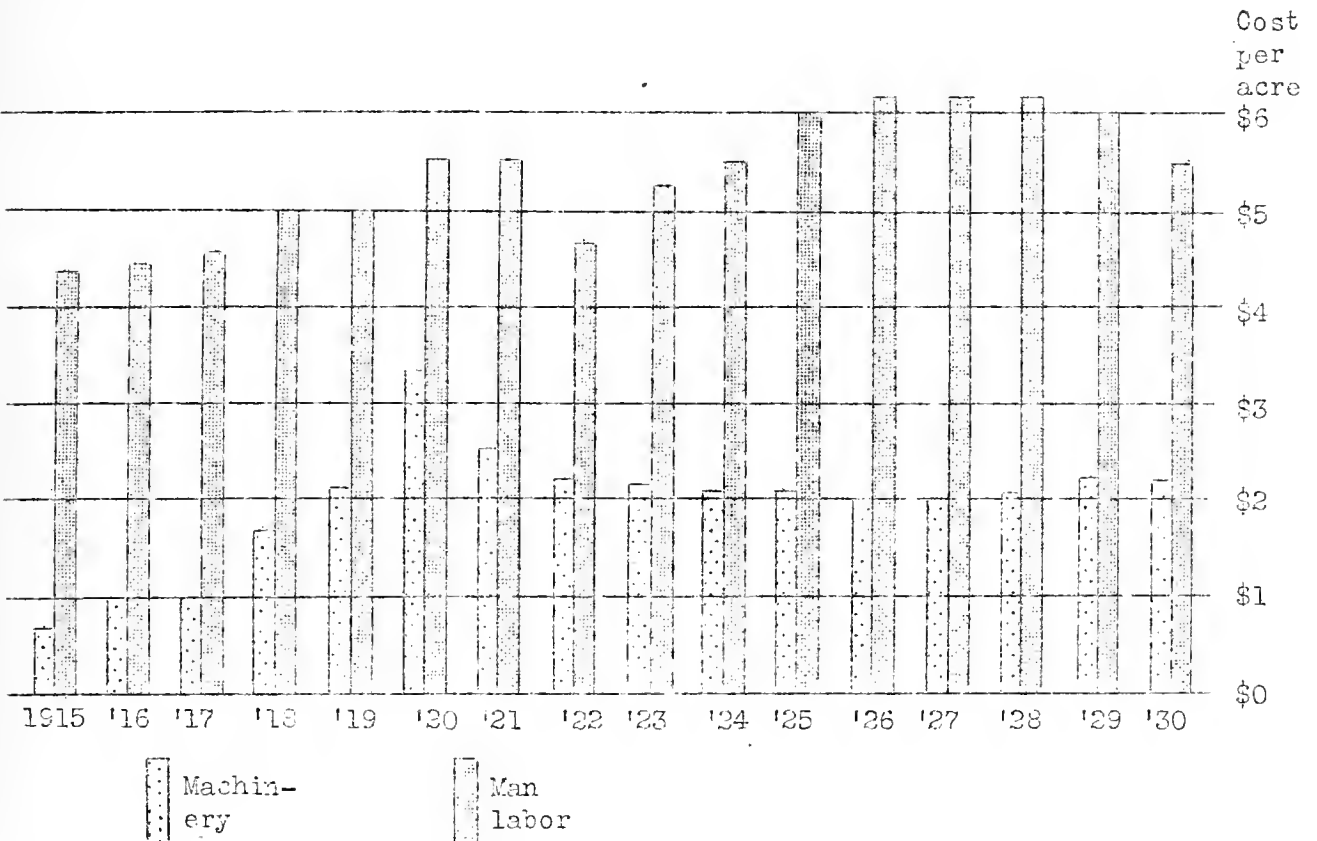


The top of each thermometer represents the cost of production of the most efficient producer among the 21 Champaign county farmers keeping cost accounts in 1929. The bottom of the scale represents the highest cost or least efficient producer. The "mercury" in each thermometer represents the cost of production on the farm discussed on pages 13 and 14 and shows how one farm efficiently organized and operated has secured a low cost on practically all of its products. Low costs have enabled this farmer to earn 63 percent on his total farm investment as an average of the six years 1924 to 1930 inclusive.

Chart No. 4



Rate earned on the total farm investment on farms of account keepers in central Illinois for years 1915 to 1930. Repeated checks have indicated that the average farmer earns a rate about 2% less than that of the average account keeper.



Labor and machinery costs per acre on farms of account keepers in east central Illinois for each year from 1915 to 1930 inclusive. Both labor and machinery charges are considerably higher than before the war but the relative increase in machinery costs is greater.

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Annual Farm Business Report

DeKalb County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921 one hundred farms in Woodford County which is typical of central Illinois had an average net loss of practically one percent of the total farm investment. In 1920 thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in DeKalb County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 45 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.8 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$475 a farm, there remains a rate of 1.8 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for the operator's labor and management. Following this plan it is found that the average farm operator of this group lacked \$341 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$131 an acre not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$217 an acre. The land and improvements exclusive of the residence averaged \$167 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 900 companies was 12.1 percent. For 1929, 1500 companies were reported as earning 12.8 percent and for 1930, 900 companies show 7.2 percent. Unlike farms, these companies

*R. N. Rasmusen, farm adviser in DeKalb County, cooperated in supervising and collecting the records on which this report is based.

pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming but since these other industries slumped from a much higher level they show the usual higher return as compared with farming. After the slump they show a higher rate than was shown for farming in 1928 and 1929, two years of relatively good earnings in both farming and industry as compared with the ten year average.

In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm and for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$908 while the surplus of sales over expenses was \$3254. For the more successful farms, the corresponding figures were \$170 increase in inventory and \$3472 surplus of income over expense. For the less successful farms the figures were \$1963 decrease in inventory and \$3364 surplus of income over expenses. It is evident that the farms in the low earnings group do show a greater writing off of inventories but they also had on the average a smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income.

The fact that the most profitable farms had a small increase in inventory while the least profitable farms had a large decrease calls for some explanation. A study of the individual records shows that one reason for the inventory increase on farms of the first group is that they actually were carrying larger quantities of feed and grain at the end of the year than at the beginning. Farms of this group also spent an average of \$503 on improvements during the year and hence show an increase in value of improvements at the end of the year. Farms of the less successful group show large decreases in inventory for the following reasons. (1) They had more feed and grain on hand at the beginning of the year than the more successful farms and about the same amount at the close of the year. They, therefore, had a reduction in quantity of feed and grain during the year and suffered a reduced price on the relatively large quantity carried January 1, 1930, when prices were higher than on January 1, 1931. (2) They had more than twice as many beef cattle as farms of the more successful group and the largest reduction in livestock values was in the case of beef cattle. (3) Farmers of this group with relatively poor incomes spent less on improvements and hence show a larger decrease in improvement values. It is probable also that because of their relatively poorer incomes they were inclined to be somewhat more pessimistic and, therefore, to write off values a little more all along the line. Most of the difference between the two groups so far as inventory reductions are concerned is explained in the grain and beef cattle inventories.

On account of the difficulty in getting records of produce used by the farm family and by hired labor these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2230 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that the most profitable 15 farms averaged 45 acres smaller than the least profitable 15 farms, the average size of all farms being 220 acres. The difference in percentage of tillable land was only one percent. The extra 40 acres of tillable land which the less successful farms averaged should have given them some advantage in lower costs per acre for labor and equipment. The records show, however, that they had somewhat higher costs for these items. The big difference between the two groups was in income and not in expenses.

One of the advantages of the more successful farms was that of larger crop yields. They produced 9 bushels more corn and $3\frac{1}{2}$ bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for land preparation and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. Because of their larger size, the less profitable farms had more acres of the common grain crops than did the more profitable farms.

On the more profitable farms the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$156 of livestock income from each \$100 worth of feed other than pasture while the less successful farmers had a corresponding income of only \$96. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms but the additional \$60 from each \$100 worth of feed on the most profitable 15 farms was an important factor in their larger net incomes. On over \$3500 worth of feed which was fed on the average farm in this area this advantage of \$60 a hundred amounts to a total of more than \$2000 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs, separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$166 dairy sales per dairy cow as compared with \$99 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference, each of them having about \$20 an acre invested in livestock exclusive of horses and mules. For each group the average number of cows was 7.

The labor efficiency was higher on farms of the more successful group. They had 30 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$24 as compared with \$33 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 15 farms had an advantage of \$14 for each \$100 of income.

The combined cost of feed for horses, horse depreciations and power and machinery per crop acre was 65 cents higher on the less successful farms. This is in spite of the fact that the latter farms were larger and had lower crop yields.

The situation is summed up in the gross receipts and expense per acre. The most profitable 15 farms had an average gross income of \$26.14 and an expense of \$13.89 an acre as compared with \$17.15 income and \$15.77 expense on the least profitable 15 farms. This resulted in average net incomes of \$12.25 and \$1.38 an acre respectively.

The following table presents some comparative investment and earnings data on accounting farms in DeKalb County for the period 1927-1930. The rate earned was lowest for 1930. It is interesting to note that the average operating cost per acre has practically the same from year to year, but the income per acre has varied from \$20.77 to \$28.66. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In four years it has varied from nothing to \$1357.

Comparative Earnings and Investment Figures on Farms in DeKalb County
for 1927-1930

	1927 ¹	1928 ²	1929 ³	1930 ³
Number of farms- - - - -	38	40	35	45
Average size of farms, acres - - - - -	220	210	215	220
Average rate earned, to pay for management, risk and capital- - - - -	4.0%	5.7%	6.4%	2.8%
Average labor and management wage- - - - -	\$248	\$988	\$1357	\$ -341
Average value of land per acre - - - - -	125	116	133	131
Average investment per acre- - - - -	201	183	221	217
Investment in livestock per farm - - - - -	4903	4141	5367	5395
Investment in cattle per farm- - - - -	2422	2487	3048	3076
Investment in hogs per farm- - - - -	1540	929	1207	1263
Investment in poultry per farm - - - - -	168	182	214	187
Gross income per acre- - - - -	22.71	25.03	28.66	20.77
Operating cost per acre- - - - -	14.62	14.28	14.56	14.68
Net increase from crops per farm - - - - -	000	487	585	41
Miscellaneous income per farm- - - - -	72	93	65	57
Livestock income per farm- - - - -	4923	4692	5512	4464
Gross income per farm- - - - -	4995	5272	6162	4562
Cattle income per farm - - - - -	1569	1371	1830	1132
Dairy sales per farm - - - - -	1079	1584	1099	963
Hog income per farm- - - - -	1831	1236	1972	2028
Poultry income per farm- - - - -	278	395	379	293
Average yield corn in bu.- - - - -	36	44	46	44
Average yield oats in bu.- - - - -	30	50	46	56

¹Records from DeKalb, Boone, Ogle and Lee counties 1927.

²Records from DeKalb and Boone counties 1928.

³Records from DeKalb County only 1929 and 1930.

DeKalb County, 1930

Item	Your farm	Average of 45 farms	15 most profitable farms	15 least profitable farms
<u>Capital Investments--Land</u> - - - - -		28,834	28,246	33,888
Farm Improvements - - - - -		7,904	6,327	9,580
Horses- - - - -		566	478	757
Cattle- - - - -		3,076	2,527	4,364
Hogs- - - - -		1,263	1,229	1,286
Sheep - - - - -		303	217	468
Bees- - - - -		---	---	---
Poultry - - - - -		187	204	214
Livestock--Total - - - - -		<u>5,395</u>	<u>4,655</u>	<u>7,039</u>
Machinery and equipment- - - - -		2,163	1,757	2,652
Feed, grain and supplies - - - - -		3,291	2,738	4,109
Total Investment- - - - -	\$	<u>\$47,587</u>	<u>\$43,723</u>	<u>\$57,318</u>
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		1,132	946	1,547
Hogs- - - - -		2,028	2,144	1,750
Sheep - - - - -		48	58	---
Bees- - - - -		---	---	---
Poultry - - - - -		115	106	109
Egg sales - - - - -		178	164	203
Dairy sales - - - - -		963	1,143	752
Livestock--Total - - - - -		<u>4,464</u>	<u>4,561</u>	<u>4,361</u>
Feed, grain and supplies - - - - -		41	891	---
Labor off farm - - - - -		55	59	36
Miscellaneous receipts - - - - -		2	4	1
Total Receipts--Net Increases - - - - -	\$	<u>\$ 4,562</u>	<u>\$ 5,515</u>	<u>\$ 4,398</u>
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		353	335	382
Horses- - - - -		31	21	45
Miscellaneous livestock decreases <u>Sheep</u>		---	---	5
Machinery and equipment - - - - -		581	463	749
Feed, grain and supplies- - - - -		---	---	353
Livestock expense - - - - -		91	77	100
Crop expense- - - - -		261	289	263
Hired labor - - - - -		483	283	654
Taxes - - - - -		384	379	411
Miscellaneous expenses- - - - -		32	26	35
Total Expenses--Net Decreases - - - - -	\$	<u>\$ 2,216</u>	<u>\$ 1,873</u>	<u>\$ 2,997</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 2,346</u>	<u>\$ 3,642</u>	<u>\$ 1,401</u>
Total unpaid labor- - - - -		1,008	1,058	1,047
Operator's labor- - - - -		700	663	720
Family labor- - - - -		308	395	327
Net income from investment and management - - - - -		1,338	2,584	354
Rate earned on investment - - - - -	%	<u>2.81%</u>	<u>5.91%</u>	<u>.62%</u>
Return to capital and operator's labor and management 5 percent of capital invested - - - - -		2,038	3,247	1,074
Labor and management wage - - - - -	\$	<u>\$ 2,379</u>	<u>\$ 2,186</u>	<u>\$ 2,866</u>
		<u>\$ -341</u>	<u>\$ 1,061</u>	<u>\$-1,792</u>

DeKalb County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Barley	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm	
9.81	55	77	49	144	300	297	192	203	28	1.56	18	36	42	8 000	360
8.81	62	74	47	134	280	277	182	193	27	2.06	20	41	39	7 500	340
7.81	59	71	45	124	260	257	172	183	26	2.56	22	46	36	7 000	320
6.81	56	68	43	114	240	237	162	173	25	3.06	24	51	33	6 500	300
5.81	53	65	41	104	220	217	152	163	24	3.56	26	56	30	6 000	280
4.81	50	62	39	94	200	197	142	153	23	4.06	28	61	27	5 500	260
3.81	47	59	37	84	180	177	132	143	22	4.56	30	66	24	5 000	240
2.81	44	56	35	74	160	157	122	133	21	5.06	32	71	21	4 500	220
1.81	41	53	33	64	140	137	112	123	20	5.56	34	76	18	4 000	200
.81	39	50	31	54	120	117	102	113	19	6.06	36	81	15	3 500	180
-.19	36	47	29	44	100	97	92	103	18	6.56	38	86	12	3 000	160
-1.19	33	44	27	34	80	77	82	93	17	7.06	40	91	9	2 500	140
-2.19	30	41	25	24	60	57	72	83	16	7.56	42	96	6	2 000	120
-3.19	27	37	23	14	40	37	62	73	15	8.06	44	101	3	1 500	100
-4.19	24	34	21	4	20	17	52	63	14	8.56	46	106	---	1 000	80

DeKalb County, 1930

Factors helping to analyze the farm business	Your farm	Average of 45 farms	15 most profitable farms	15 least profitable farms
Size of farm--acres - - - - -	-----	220	211	256
Percent of land area tillable - - -	-----	92%	94%	93%
Gross receipts per acre - - - - -	-----	20.77	26.14	17.15
Total expenses per acre - - - - -	-----	14.68	13.89	15.77
Net receipts per acre - - - - -	-----	6.09	12.25	1.38
Value of land per acre- - - - -	-----	131	134	132
Total investment per acre - - - - -	-----	217	207	224
Acres in Corn - - - - -	-----	94	93	104
Oats - - - - -	-----	37	41	39
Wheat- - - - -	-----	6	4	7
Barley - - - - -	-----	19	15	27
Soybeans - - - - -	-----	---	---	---
Crop yields--Corn bu. per acre- - -	-----	43.7	48.9	39.9
Oats, bu. per acre- - -	-----	56.2	54.0	54.0
Wheat, bu. per acre - -	-----	32.7	35.7	32.1
Barley, bu. per acre- -	-----	35.4	37.0	36.3
Soybeans, bu. per acre-	-----	---	---	---
Value of feed fed to productive livestock - - - - -	-----	3,665	2,929	4,555
Returns per \$100 of feed fed to productive livestock- - -	-----	122	156	96
Returns per \$100 invested in:				
All productive livestock - -	-----	98	114	75
Cattle - - - - -	-----	74	88	58
Hogs - - - - -	-----	160	176	141
Poultry- - - - -	-----	157	138	154
Dairy sales per dairy cow - - - - -	-----	133	166	99
Investment in productive livestock per acre- -	-----	20.77	18.95	22.73
Receipts from productive livestock per acre - -	-----	20.33	21.62	16.99
Man labor cost per \$100 gross income- - - - -	-----	32	24	38
Man labor cost per acre - - - - -	-----	6.61	6.19	6.49
Value of feed fed to horses - - - -	-----	304	335	348
Power and machinery cost per crop acre- - - - -	-----	5.06	4.69	5.34
Expenses per \$100 gross income- - -	-----	71	53	92
Machinery cost per acre - - - -	-----	2.65	2.19	2.92
Farm improvements cost per acre -	-----	1.61	1.59	1.49
Farms with tractor- - - - -	-----	85%	73%	94%
Excess of sales over expenses - - -	-----	3,254	3,472	3,364
Decrease in inventory - - - - -	-----	908	170 inc.	1,963

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Cook, DuPage, Kendall and Kane Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. E. Wills, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Cook, DuPage, Kendall and Kane Counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 50 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.7 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$381 a farm, there remains a rate of 1.7 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$137 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$145 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$223 an acre. The land and improvements exclusive of the residence averaged \$176 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than *O. G. Barrett, H. S. Wright, W. P. Miller and H. P. Kelley, farm advisers in Cook, DuPage, Kendall and Kane counties, respectively, cooperated in supervising and collecting the records on which this report is based.

the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$388 while the surplus of sales over expenses was \$2509. For the more successful farms, the corresponding figures were \$507 increase in inventory and \$2940 surplus of income over expense. For the less successful farms the figures were \$1294 reduction in inventory and \$2155 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. The increase in inventory on the more profitable farms was due to the fact that they had an increase in the quantity of corn, the number of hogs and the number of cattle on hand at the close of the year as compared with the beginning. The average increase per farm amounted to 476 bushels of corn, 9 hogs and 2 cattle. The least profitable farms had decreases in corn and cattle and an increase of only 1.7 hogs per farm. There were more cattle per farm on the less profitable farms and since there was a severe decline in cattle prices this caused greater decreases in inventory on these farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2517 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 3 acres difference in average size between the most profitable 16 farms and the least profitable 16 farms, the average

size of all farms being 171 acres. The difference in percentage of tillable land was only 5 percent. Difference in acreage was not an important factor in the difference in income. The big difference between the two groups was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule.

One of the important advantages of the more successful farms was that of larger crop yields. They produced 15 bushels more corn and 4 bushels more oats per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 14 acres more corn, 11 acres more barley, and 9 acres more oats.

On the more profitable farms one of the larger advantages was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$159 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$140. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$19 from each \$100 worth of feed on the most profitable 16 farms was an important factor in their larger net incomes. On over \$2250 worth of feed which was fed on the average farm in this area this advantage of \$19 a hundred amounts to a total of more than \$425 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$174 dairy sales per dairy cow as compared with \$155 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference, each of them having about \$21 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was higher on farms of the more successful group. They had 15 cents an acre less labor cost. Due to their larger incomes from slightly less labor their labor cost per \$100 income was only \$28 as compared with \$46 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 16 farms had an advantage of \$18 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$2.23 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group and there is no evidence of a corresponding return for this extra cost.

The situation is summed up in the gross receipts and expense per acre. The most profitable 16 farms had an average gross income of \$32 and an expense of \$18.25 an acre as compared with \$19.48 income and \$20.96 expense on the least profitable 16 farms. This resulted in an average net income of \$13.75 and a net loss of \$1.48 an acre respectively.

The following table presents some comparative investment and earnings data on accounting farms in Cook, DuPage, and Kane Counties for the period 1926-1930. The rate earned was lowest for 1930. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from

year to year. In five years it has varied from nothing to \$1209. The sharp drop in prices for 1930 is reflected in the \$10 an acre decrease in gross income from the rather stable level which had prevailed for four years. The operating cost per acre was reduced about \$2 an acre from the level of the preceding four years. Most of the reduction was in a lower labor cost.

Comparative Earnings and Investment Figures on Farms in
Cook, DuPage, Kendall and Kane Counties for 1926-1930

Items	1926	1927	1928	1929	1930
Numbers of farms - - - - -	35	60	54	47	50
Average size of farms, acres -	161	154	144	152	171
Average rate earned, to pay for management, risk and capital	4.9%	5.0%	6.5%	5.9%	2.7%
Average labor and management wage	\$552	\$708	\$1209	\$992	\$-137
Average value of land per acre	135	128	133	147	145
Average investment per acre - -	226	224	224	243	223
Investment in livestock per farm	4404	4673	4126	4228	3780
Investment in cattle per farm-	3453	3691	3299	3212	2586
Investment in hogs per farm- -	338	342	264	424	431
Investment in poultry per farm	164	178	156	165	198
Gross income per acre - - - - -	32.07	32.84	34.43	34.76	23.46
Operating cost per acre - - - - -	20.92	21.56	19.81	20.50	17.40
Net increase from crops per farm	000	000	191	2	544
Miscellaneous income per farm-	41	49	63	62	77
Livestock income per farm- - -	5129	5008	4704	5220	3383
Gross income per farm- - - - -	5170	5057	4958	5284	4004
Cattle income per farm - - - -	434	601	783	885	193
Dairy sales per farm - - - - -	3763	3782	3298	3162	2155
Hog income per farm- - - - -	601	329	317	804	747
Poultry income per farm- - - -	264	278	293	362	276
Average yield corn in bu. - - -	35	35	42	43	37
Average yield oats in bu. - - -	47	51	49	41	51

Cook, DuPage, Kendall and Kane Counties, 1930

Item	Your farm	Average of 50 farms	16 most profitable farms	16 least profitable farms
Capital Investments--Land - - - - -		24 823	23 434	24 471
Farm Improvements - - - - -		5 275	4 950	6 068
Horses- - - - -		510	501	473
Cattle- - - - -		2 586	2 753	3 359
Hogs- - - - -		431	378	353
Sheep - - - - -		45	---	16
Bees- - - - -		10	1	29
Poultry - - - - -		198	260	174
Livestock--Total - - - - -		<u>3 780</u>	<u>3 893</u>	<u>4 404</u>
Machinery and equipment- - - - -		2 010	1 874	2 445
Feed, grain and supplies - - - - -		2 217	2 214	2 078
Total Investment- - - - -	\$	\$ 38 105	\$ 36 365	\$ 39 466
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		193	353	81
Hogs- - - - -		747	821	428
Sheep - - - - -		12	---	14
Bees- - - - -		---	---	4
Poultry - - - - -		42	80	---
Egg sales - - - - -		234	339	193
Dairy sales - - - - -		2 155	2 659	2 485
Livestock--Total - - - - -		<u>3 383</u>	<u>4 252</u>	<u>3 205</u>
Feed, grain and supplies - - - - -		544	949	---
Labor off farm - - - - -		59	58	58
Miscellaneous receipts - - - - -		18	21	6
Total Receipts--Net Increases - - - - -	\$	\$ 4 004	\$ 5 280	\$ 3 269
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		275	253	353
Horses- - - - -		41	61	39
Miscellaneous livestock decreases		---	---	27
Poultry		---	---	---
Machinery and equipment - - - - -		526	442	738
Feed, grain and supplies- - - - -		---	---	49
Livestock expense - - - - -		74	66	93
Crop expense- - - - -		225	268	202
Hired labor - - - - -		329	315	425
Taxes - - - - -		380	395	448
Miscellaneous expenses- - - - -		33	33	34
Total Expenses--Net Decreases - - - - -	\$	\$ 1 883	\$ 1 833	\$ 2 408
Receipts Less Expenses- - - - -	\$	\$ 2 121	\$ 3 447	\$ 861
Total unpaid labor- - - - -		1 087	1 179	1 110
Operator's labor- - - - -		734	720	765
Family labor- - - - -		353	459	345
Net income from investment and management - - - - -		1 034	2 268	-249
Rate earned on investment - - - - -	%	2.71 %	6.24 %	-.63 %
Return to capital and operator's labor and management		1 768	2 988	516
5 percent of capital invested - - - - -		1 905	1 818	1 973
Labor and management wage - - - - -	\$	\$ -137	\$ 1 170	\$ -1 457

Cook, DuPage, Kendall and Kane Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Cats	Barley	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm	
9.7	58	72	52	166	302	290	219	223	32	2.75	14	40	44	7 500	310
8.7	55	69	50	156	282	270	209	213	30	3.25	17	45	41	7 000	290
7.7	52	66	48	146	262	250	199	203	28	3.75	20	50	38	6 500	270
6.7	49	63	46	136	242	230	189	193	26	4.25	23	55	35	6 000	250
5.7	46	60	44	126	222	210	179	183	24	4.75	26	60	32	5 500	230
4.7	43	57	42	116	202	190	169	173	22	5.25	29	65	29	5 000	210
3.7	40	54	40	106	182	170	159	163	20	5.75	32	70	26	4 500	190
2.7	37	51	38	95	152	150	149	153	18	6.25	35	75	23	4 000	170
1.7	34	48	36	86	142	130	139	143	16	6.75	38	80	20	3 500	150
.7	31	45	34	76	122	110	129	133	14	7.25	41	85	17	3 000	130
.3	28	42	32	66	102	90	119	123	12	7.75	44	90	14	2 500	110
-.1.3	25	39	30	56	82	70	109	113	10	8.25	47	95	11	2 000	90
-.2.3	22	36	28	46	62	50	99	103	8	8.75	50	100	8	1 500	70
-.3.3	19	33	26	36	42	30	89	93	6	9.25	53	105	5	1 000	50
-.4.3	16	30	24	26	22	10	79	83	4	9.75	56	110	2	500	30

Cook, DuPage, Kendall and Kane Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 50 farms	16 most profitable farms	16 least profitable farms
Size of farm--acres - - - - -	_____	171	165	168
Percent of land area tillable - - -	_____	89%	92%	88%
Gross receipts per acre - - - - -	_____	23.46	32.00	19.48
Total expenses per acre - - - - -	_____	17.40	18.25	20.96
Net receipts per acre - - - - -	_____	6.06	13.75	-1.48
Value of land per acre- - - - -	_____	145	142	146
Total investment per acre - - - - -	_____	223	220	235
Acres in Corn - - - - -	_____	61	63	49
Oats - - - - -	_____	31	24	33
Wheat- - - - -	_____	6	7	4
Barley - - - - -	_____	16	23	12
Crop yields--Corn, bu. per acre- - -	_____	37.0	44.0	28.9
Oats, bu. per acre- - -	_____	51.3	54.1	49.8
Barley, bu. per acre- - -	_____	38.2	38.8	40.2
Value of feed fed to productive livestock- - - - -	_____	2271	2677	2278
Returns per \$100 of feed fed to productive livestock - -	_____	149	159	140
Returns per \$100 invested in:				
All productive livestock - -	_____	108	123	89
Cattle - - - - -	_____	96	110	85
Hogs - - - - -	_____	152	184	121
Poultry- - - - -	_____	150	166	110
Dairy sales per dairy cow - - - - -	_____	153	174	155
Investment in productive livestock per acre -	_____	18.35	20.88	21.28
Receipts from productive livestock per acre -	_____	19.82	25.77	18.94
Man labor cost per \$100 gross income- - - - -	_____	35	28	46
Man labor cost per acre - - - - -	_____	8.12	8.85	9.00
Value of feed fed to horses - - - -	_____	284	320	262
Power and machinery cost per crop acre - - - - -	_____	6.29	5.96	8.19
Expenses per \$100 gross income- - -	_____	74	57	108
Machinery cost per acre - - - -	_____	3.08	2.68	4.40
Farm improvements cost per acre	_____	1.61	1.53	2.10
Farms with tractor- - - - -	_____	74%	69%	88%
Excess of sales over expenses - - -	_____	2509	2940	2155
Decrease in inventory - - - - -	_____	388	507 Inc.	1294

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1919-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

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In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

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Annual Farm Business Report

Will County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnson, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921 one hundred farms in Woodford County which is typical of central Illinois had an average net loss of practically one percent of the total farm investment. In 1920 thirty-one farms in the same county had an average loss of one tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Will County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 31 farmers in Will County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 1.5 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$433 a farm, there remains a rate of one half of one percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group lacked \$797 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$147 an acre not including buildings. Other items including improvements, equipment, live-stock, and feed made a total investment of \$211 an acre. The land and improvements exclusive of the residence averaged \$174 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For

* L. W. Brahm, farm adviser in Will County, cooperated in supervising and collecting the records on which this report is based.

1929, 1520 companies were reported as earning 12.8 percent and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming but since these other industries slumped from a much higher level they show the usual higher return as compared with farming. After the slump they show a higher rate than was shown for farming in 1928 and 1929, two years of relatively good earnings in both farming and industry as compared with the ten year average.

In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm and for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$707 while the surplus of sales over expenses was \$2262. For the more successful farms, the corresponding figures were \$227 reduction in inventory and \$3336 surplus of income over expense. For the less successful farms the figures were \$502 decrease in inventory and \$770 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer had to spend during the current year than does the net income. For 1930 the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay since the small grains generally yielded well in 1930. A very much larger proportion, however, of the corn and hay crops is stored, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$450 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2908 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 36 acres difference in average size between the most profitable 10 farms and the least profitable 10 farms, the average size of all farms being 205 acres. The difference in percentage of tillable land was only 13 percent. Difference in acreage probably was not one of the most important factors in the difference in income. In fact, reports of this kind have often shown the more successful farms somewhat smaller. It is probable that the extra 57 acres of tillable land which the more successful farms averaged did give some advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The difference in gross income per farm in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule.

One of the advantages of the more successful farms was that of larger crop yields. They produced 1 bushel more corn, 7 bushels more oats, and 4 bushels more wheat per acre than the less successful farms. These differences are smaller than are usually found in studies of this kind. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 21 acres more corn, 22 acres more wheat, and 3 acres more oats. There was no difference in the acreage of barley.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$164 of livestock income from each \$100 worth of feed other than pasture while the less successful farmers had a corresponding income of only \$123. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms but the additional \$41 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$2000 worth of feed which was fed on the average farm in this area this advantage of \$41 a hundred amounts to a total of more than \$800 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$143 dairy sales per dairy cow as compared with \$138 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference each of them having about \$14 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was much higher on farms of the more successful group. They had 70 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$27 as compared with \$48 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$21 for each \$100 of income.

The combined cost of feed for horses, horse depreciations and power and machinery per crop acre was \$1.54 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group and there is no evidence of a corresponding return for the extra cost.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$23.57 and an expense of \$13.29 an acre as compared with \$14.96 income and \$18.87 expense on the least profitable 10 farms. This resulted in an average net income of \$10.28 and a net loss of

\$3.91 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Will County for the period 1926-1930 inclusive. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$20 an acre in the 5 year period and were lowest in 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$591 after interest at 5 percent on the invested capital has been deducted.

Comparative Earnings and Investment Figures on Farms in
Will County for 1926-1930

Items	1926	1927	1928	1929 *	1930
Numbers of farms - - - - -	30	27	30	40	31
Average size of farms, acres - - -	179	200	188	217	205
Average rate earned, to pay for management, risk and capital- -	4.3%	4.6%	4.7%	4.3%	1.5%
Average labor and management wage-	\$391	\$513	\$591	\$342	-747
Average value of land per acre - -	166	172	169	163	147
Average investment per acre- - - -	227	230	233	228	211
Investment in livestock per farm -	2690	2986	2848	3489	2824
Investment in cattle per farm- - -	1487	1496	1567	2063	1732
Investment in hogs per farm- - - -	501	777	613	643	473
Investment in poultry per farm - -	157	182	176	177	170
Gross income per acre - - - - -	23.26	23.62	24.49	22.67	16.74
Operating cost per acre- - - - -	13.48	13.02	13.44	12.79	13.47
Net increase from crops per farm -	1319	1749	1573	1333	564
Miscellaneous income per farm - -	105	69	111	47	25
Livestock income per farm - - - -	2739	2905	2911	3539	2847
Gross income per farm - - - - -	4163	4723	4595	4919	3436
Cattle income per farm - - - - -	481	635	431	652	340
Dairy sales per farm - - - - -	1034	1214	1444	1389	1373
Hog income per farm - - - - -	890	782	707	1073	829
Poultry income per farm - - - - -	299	249	298	370	305
Average yield corn in bu.- - - - -	42	27	45	40	30
Average yield oats in bu.- - - - -	45	39	46	36	45

* Kendall County records were included in 1929

Will County, 1930

Item	Your farm	Average of 31 farms	10 most profitable farms	10 least profitable farms
Capital Investments--Land - - - - -		30 131	32 096	27 225
Farm Improvements - - - - -		5 541	5 488	6 252
Horses- - - - -		430	579	232
Cattle- - - - -		1 732	2 247	1 907
Hogs- - - - -		473	448	430
Sheep - - - - -		19	3	4
Bees- - - - -		--	--	--
Poultry - - - - -		170	118	195
Livestock--Total - - - - -		2 824	3 395	2 768
Machinery and Equipment- - - - -		2 099	2 606	1 531
Feed, grain and supplies - - - - -		2 718	2 892	2 119
Total Investment- - - - -	\$	43 313	46 477	39 895
<u>Receipts--Net Increases-</u> - - - - -				
Horses- - - - -		--	46	--
Cattle- - - - -		340	555	206
Hogs- - - - -		829	908	735
Sheep - - - - -		--	--	--
Bees- - - - -		--	--	--
Poultry - - - - -		70	118	24
Egg sales - - - - -		235	157	312
Dairy sales - - - - -		1 373	1 805	1 381
Livestock--Total - - - - -		2 847	3 589	2 658
Feed, grain and supplies - - - - -		564	1 444	--
Labor off farm - - - - -		23	34	17
Miscellaneous receipts - - - - -		2	--	--
Total Receipts--Net Increases - - - - -	\$	\$3 436	\$ 5 067	\$2 675
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		271	240	314
Horses- - - - -		6	--	21
Miscellaneous livestock decreases - - - - -		4	1	--
Sheep - - - - -		4	1	--
Machinery and equipment - - - - -		627	644	658
Feed, grain and supplies- - - - -		--	--	545
Livestock expense - - - - -		57	55	78
Crop expense- - - - -		202	153	203
Hired labor - - - - -		390	517	327
Taxes - - - - -		288	309	224
Miscellaneous expenses- - - - -		36	39	37
Total Expenses--Net Decreases - - - - -	\$	\$ 1 881	\$ 1 958	\$2 407
<u>Receipts Less Expenses-</u> - - - - -				
Total unpaid labor- - - - -	\$	\$ 884	\$ 900	\$ 967
Operator's labor- - - - -		698	720	648
Family labor- - - - -		186	180	319
Net income from investment and management - - - - -		671	2 209	- 699
Rate earned on investment - - - - -	%	1.55 %	4.75 %	- 1.75 %
Return to capital and operator's labor and management - - - - -		1 369	2 929	- 51
5 percent of capital invested - - - - -		2 166	2 324	1 995
Labor and management wage - - - - -	\$	\$ - 797	\$ 605	\$ - 2046

Will County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of				Returns per \$100 invested in		L. S. income per \$100 worth of feed	Dairy sales per cow	Invest. equip. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Hogs	Cattle	Poultry					Man labor	Operating expense	Per acre	Per farm	
8.55	51	66	44	168	307	336	209	211	19	2.00	23	45	38	7000	345
7.55	48	63	42	158	287	316	199	201	18	2.50	25	50	35	6500	325
6.55	45	60	40	148	267	296	189	191	17	3.00	27	55	32	6000	305
5.55	42	57	38	138	247	276	179	181	16	3.50	29	60	29	5500	285
4.55	39	54	36	128	227	256	169	171	15	4.00	31	65	26	5000	265
3.55	36	51	34	118	207	236	159	161	14	4.50	33	70	23	4500	245
2.55	33	48	32	108	187	216	149	151	13	5.00	35	75	20	4000	225
1.55	30	45	30	98	167	196	139	141	12	5.50	37	80	17	3500	205
.55	27	42	28	88	147	176	129	131	11	6.00	39	85	14	3000	185
.45	24	39	26	78	127	156	119	121	10	6.50	41	90	11	2500	165
1.45	21	36	24	68	107	136	109	111	9	7.00	43	95	8	2000	145
2.45	18	33	22	58	87	116	99	101	8	7.50	45	100	5	1500	125
3.45	15	30	20	48	67	96	89	91	7	8.00	47	105	2	1000	105
4.45	12	27	18	38	47	76	79	81	6	8.50	49	110	--	500	85
5.45	9	24	16	28	27	56	69	71	5	9.00	51	115	--	--	65

Will County, 1930

Factors helping to analyze the farm business	Your farm	Average of 31 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -	_____	205	215	179
Percent of land area tillable - -	_____	88%	94%	81%
Gross receipts per acre - - - - -	_____	16.74	23.57	14.96
Total expenses per acre - - - - -	_____	13.47	13.29	18.87
Net receipts per acre - - - - -	_____	3.27	10.28	-3.91
Value of land per acre- - - - -	_____	147	149	152
Total investment per acre - - - -	_____	211	216	223
Acres in Corn - - - - -	_____	71	77	56
Oats - - - - -	_____	29	27	24
Wheat- - - - -	_____	29	37	15
Barley - - - - -	_____	11	13	13
Crop yields--Corn, bu. per acre- -	_____	29.6	31.3	29.9
Oats, bu. per acre- -	_____	45.3	49.0	42.3
Wheat, bu. per acre -	_____	29.7	32.3	27.9
Barley, bu. per acre-	_____	32.1	37.6	27.5
Value of feed fed to productive livestock- - - - -	_____	2 051	2 154	2 158
Returns per \$100 of feed fed to productive livestock -	_____	139	164	123
Returns per \$100 invested in:	_____			
All productive livestock- - -	_____	118	120	106
Cattle- - - - -	_____	98	104	88
Hogs- - - - -	_____	167	166	138
Poultry - - - - -	_____	196	212	200
Dairy sales per dairy cow. - - - -	_____	141	143	138
Investment in productive livestock per acre	_____	11.71	13.68	14.05
Receipts from productive livestock per acre	_____	13.85	16.47	14.87
Man labor cost per \$100 gross income- - - - -	_____	37	27	48
Man labor cost per acre - - - - -	_____	6.13	6.47	7.17
Value of feed fed to horses - - -	_____	271	366	188
Power and machinery cost per crop acre- - - - -	_____	5.59	5.33	6.87
Expenses per \$100 gross income- -	_____	80	56	126
Machinery cost per acre - - -	_____	3.05	3.00	3.68
Farm improvements cost per acre- - - - -	_____	1.32	1.12	1.76
Farms with tractor- - - - -	_____	65%	80%	80%
Excess of sales over expenses - -	_____	2 262	3 336	770
Decrease in inventory - - - - -	_____	707	227	502

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1915, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1915 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Winnebago, McHenry and Lake Counties, Illinois, 1930

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The 33 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 4.6 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$336 a farm, there remains a rate of 3.6 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group had \$567 income to pay for his labor and management. The average value of the land included in the report was \$103 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$183 an acre. The land and improvements exclusive of the residence averaged \$137 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through *J. H. Keltner, C. W. Harvey, and H. C. Gilkerson, farm advisers in Winnebago, McHenry and Lake Counties, respectively, cooperated in supervising and collecting the records on which this report is based.

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On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2627 a farm.

The two groups of farms are comparable so far as acreage is concerned. This

is indicated by the fact that there was only 8 acres difference in average size between the most profitable 11 farms and the least profitable 11 farms, the average size of all farms being 184 acres. The difference in percentage of tillable land was only 7 percent. Difference in acreage was not an important factor in the difference in income. The more successful farms had not only fewer total acres but they had fewer tillable acres per farm than the less successful farms. The more successful farms, however, did twice as much business per acre. The difference in gross income in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule since the more successful farms, although smaller in size, did \$2829 more business than the less successful farms.

As a rule, one of the important advantages of the more successful farms is that of larger crop yields. In this case, however, the difference in yields was less than normal, the less successful farms actually yielding more corn per acre. The more successful farms did show higher yields of oats and barley. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 3 acres less corn, 4 acres less oats, and 7 acres more barley.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$185 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$102. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$83 from each \$100 worth of feed on the most profitable 11 farms was an important factor in their larger net incomes. On over \$3100 worth of feed which was fed on the average farm in this area this advantage of \$83 a hundred amounts to a total of more than \$2550 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$178 dairy sales per dairy cow as compared with \$122 per dairy cow on the less profitable farms. The more profitable farms had more livestock. Their average livestock investment per acre amounted to \$27.40 as compared with \$19.95 an acre on the less profitable farms. The difference was almost entirely in dairy cattle. In fact, the more profitable farms had fewer hogs.

The labor efficiency was much higher on farms of the more successful group. They had \$2.95 an acre more labor cost but due to their larger incomes from more labor their labor cost per \$100 income was only \$25 as compared with \$35 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 11 farms had an advantage of \$10 for each \$100 of income. The larger amount of labor on these farms was fully justified in the larger amount of livestock and the larger business done per acre.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.32 lower on the less successful farms.

The situation is summed up in the gross receipts and expense per acre. The most profitable 11 farms had an average gross income of \$37.15 and an expense of \$20.57 an acre as compared with \$18.51 income and \$18.38 expense on the least profitable 11 farms. This resulted in average net incomes of \$16.58 and 13 cents an acre

respectively for the two groups. As indicated above, the more profitable farms had slightly higher expenses but they did almost twice as much business and realized a greater profit.

The following table presents some comparative investment and earnings data on accounting farms in Winnebago, McHenry, and Lake Counties for the period 1929-1930 inclusive. The rate earned was lower for 1930 although the rate for this area was higher than for any other Illinois area whose accounts were summarized for 1930 except Boone County. It is interesting to note that the average operating cost per acre is very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In two years it has varied from \$567 to \$1146. Unlike most other areas of the state the farm account cooperators in this area show larger crop yields for 1930 than for 1929.

Comparative Earnings and Investment Figures on Farms in
Winnebago, McHenry, and Lake Counties for 1929-1930

Items	1929	1930
Numbers of farms - - - - -	51	33
Average size of farms, acres - - - - -	194	184
Average rate earned, to pay for management, risk and capital- - - - -	6.3%	4.6%
Average labor and management wage- - - - -	1146	567
Average value of land per acre - - - - -	103	103
Average investment per acre- - - - -	178	183
Investment in livestock per farm - - - - -	4525	4546
Investment in cattle per farm- - - - -	3261	3230
Investment in hogs per farm- - - - -	518	648
Investment in poultry per farm - - - - -	149	149
Gross income per acre- - - - -	28.20	25.75
Operating cost per acre- - - - -	17.08	17.28
Net increase from crops per farm - - - - -	—	—
Miscellaneous income per farm- - - - -	56	60
Livestock income per farm- - - - -	5416	4666
Gross income per farm- - - - -	5472	4726
Cattle income per farm - - - - -	1009	603
Dairy sales per farm - - - - -	2866	2842
Hog income per farm- - - - -	994	963
Poultry income per farm- - - - -	375	228
Average yield corn in bu.- - - - -	38	41
Average yield cats in bu.- - - - -	30	45

Winnebago, McHenry, and Lake Counties, 1930

Item	Your farm	Average of 33 farms	11 most profitable farms	11 least profitable farms
Capital Investments--Land - - - - -		18 936	19 561	15 247
Farm Improvements - - - - -		6 197	5 341	5 872
Horses- - - - -		409	336	390
Cattle- - - - -		3 230	3 905	2 510
Hogs- - - - -		648	280	908
Sheep - - - - -		110	25	203
Bees- - - - -		---	---	---
Poultry - - - - -		149	153	113
Livestock--Total - - - - -		<u>4 546</u>	<u>4 699</u>	<u>4 124</u>
Machinery and equipment- - - - -		1 928	2 038	1 797
Feed, grain and supplies - - - - -		2 006	1 939	1 815
Total Investment- - - - -	\$	<u>\$33 613</u>	<u>\$ 33 578</u>	<u>\$ 28 855</u>
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		603	517	536
Hogs- - - - -		963	375	1 210
Sheep - - - - -		30	21	33
Bees- - - - -		---	---	---
Poultry - - - - -		28	23	15
Egg sales - - - - -		200	217	171
Dairy sales - - - - -		2 842	4 666	1 125
Livestock--Total - - - - -		<u>4 666</u>	<u>5 819</u>	<u>3 090</u>
Feed, grain and supplies - - - - -		---	---	---
Labor off farm - - - - -		33	67	15
Miscellaneous receipts - - - - -		27	49	1
Total Receipts--Net Increases - - - - -	\$	<u>\$ 4 726</u>	<u>\$ 5 935</u>	<u>\$ 3 106</u>
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		208	187	244
Horses- - - - -		30	30	14
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		523	579	473
Feed, grain and supplies- - - - -		414	339	683
Livestock expense - - - - -		76	103	44
Crop expense- - - - -		216	185	181
Hired labor - - - - -		455	511	355
Taxes - - - - -		296	287	305
Miscellaneous expenses- - - - -		34	33	33
Total Expenses--Net Decreases - - - - -	\$	<u>\$ 2 252</u>	<u>\$ 2 254</u>	<u>\$ 2 332</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 2 474</u>	<u>\$ 3 681</u>	<u>\$ 774</u>
Total unpaid labor- - - - -		919	1 032	752
Operator's labor- - - - -		693	706	652
Family labor- - - - -		226	326	100
Net income from investment and management - - - - -		1 555	2 649	22
Rate earned on investment - - - - -	%	<u>4.63%</u>	<u>7.89%</u>	<u>.076%</u>
Return to capital and operator's labor and management - - - - -		2 248	3 355	674
5 percent of capital invested - - - - -		1 681	1 679	1 443
Labor and management wage - - - - -	\$	<u>\$ 567</u>	<u>\$ 1 676</u>	<u>\$ -769</u>

Winnebago, McHenry and Lake Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in		L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm		
	Corn	Oats	Barley	Cattle					Hogs	Poultry	Man labor	Operat-ing expense		Per acre	Per farm
11.63	62	66	52	181	307	306	219	230	29	3.10	8	32	40	8 000	325
10.63	59	63	50	171	287	286	209	220	28	3.60	11	37	38	7 500	305
9.63	56	60	48	161	267	266	199	210	27	4.10	14	42	36	7 000	285
8.63	53	57	46	151	247	246	189	200	26	4.60	17	47	34	6 500	265
7.63	50	54	44	141	227	226	179	190	25	5.10	20	52	32	6 000	245
6.63	47	51	42	131	207	206	169	180	24	5.60	23	57	30	5 500	225
5.63	44	48	40	121	187	186	159	170	23	6.10	26	62	28	5 000	205
4.63	41	45	38	111	167	166	149	160	22	6.60	29	67	26	4 500	185
3.63	38	42	36	101	147	146	139	150	21	7.10	32	72	24	4 000	165
2.63	35	39	34	91	127	126	129	140	20	7.60	35	77	22	3 500	145
1.63	32	36	32	81	107	106	119	130	19	8.10	38	82	20	3 000	125
.63	29	33	30	71	87	86	109	120	18	8.60	41	87	18	2 500	105
-1.37	26	30	28	61	67	66	99	110	17	9.10	44	92	16	2 000	85
-1.37	23	27	26	51	47	46	89	100	16	9.60	47	97	14	1 500	65
-2.37	20	24	24	41	27	26	79	90	15	10.10	50	102	12	1 000	45

Winnebago, McHenry and Lake Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 33 farms	11 most profitable farms	11 least profitable farms
Size of farm--acres - - - - -	_____	184	160	168
Percent of land area tillable - - -	_____	80%	82%	89%
Gross receipts per acre - - - - -	_____	25.75	37.15	18.51
Total expenses per acre - - - - -	_____	17.28	20.57	18.38
Net receipts per acre - - - - -	_____	8.47	16.58	.13
Value of land per acre- - - - -	_____	103	122	91
Total investment per acre - - - - -	_____	183	210	172
Acres in Corn - - - - -	_____	51	42	45
Oats - - - - -	_____	25	18	22
Barley - - - - -	_____	12	15	8
Crop yields--Corn, bu. per acre- - -	_____	41	40.1	42.5
Oats, bu. per acre- - -	_____	45.3	55.6	41.1
Barley, bu. per acre- -	_____	37.6	43.7	36.7
Value of feed fed to productive livestock- - - - -	_____	3131	3139	3038
Returns per \$100 of feed fed to productive livestock - -	_____	149	185	102
Returns per \$100 invested in:				
All productive livestock- -	_____	116	133	92
Cattle- - - - -	_____	111	130	73
Hogs- - - - -	_____	167	163	153
Poultry - - - - -	_____	166	169	180
Dairy sales per dairy cow - - - - -	_____	161	178	122
Investment in productive livestock per acre -	_____	21.85	27.40	19.95
Receipts from productive livestock per acre -	_____	25.43	36.41	18.42
Man labor cost per \$100 gross income - - - - -	_____	29	25	35
Man labor cost per acre - - - - -	_____	7.38	9.46	6.51
Value of feed fed to horses - - - - -	_____	253	252	267
Power and machinery cost per crop acre - - - - -	_____	6.62	8.15	6.83
Expenses per \$100 gross income- - -	_____	67	55	99
Machinery cost per acre - - - - -	_____	2.85	3.62	2.82
Farm improvements cost per acre	_____	1.13	1.17	1.45
Farms with tractor- - - - -	_____	73%	82%	64%
Excess of sales over expenses - - -	_____	2600	3215	1683
Decrease in inventory - - - - -	_____	126	466 Inc.	909

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1915 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Jo Daviess County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921 one hundred farms in Woodford County which is typical of central Illinois had an average net loss of practically one percent of the total farm investment. In 1920 thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Jo Daviess County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 30 farmers in Jo Daviess County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 3.8 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$319 a farm, there remains a rate of 2.8 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group earned enough income to pay 5 percent on his investment and leave \$311 as pay for his labor and management. The average value of the land included in the report was \$91 an acre not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$149 an acre. The land and improvements exclusive of the residence averaged \$114 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally

* H. R. Brunnemeyer, farm adviser in Jo Daviess County, cooperated in supervising and collecting the records on which this report is based.

known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level, they show the usual higher return as compared with farming. After the slump they show a higher rate than was shown for farming in 1928 and 1929, two years of relatively good earnings in both farming and industry as compared with the ten-year average.

In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm and for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$32 while the surplus of sales over expenses was \$2250. For the more successful farms, the corresponding figures were \$271 increase in inventory and \$2484 surplus of income over expense. For the less successful farms the figures were \$444 decrease in inventory and \$1677 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. The increase in inventories on the more successful farms was due to an increase in quantities of corn, oats, silage, and hay on hand at the end of the year as compared with the beginning of the year.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$450 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$1522 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 20 acres difference in average size between the most profitable 10 farms and the least profitable 10 farms, the average size of all farms being 214 acres. The difference in percentage of tillable land was 14 percent. Difference in acreage was not an important factor in the difference in income. The more profitable farms, although 20 acres smaller in average size, had an average of 14 acres more tillable land per farm than the less profitable farms. It is probable that the extra 14 acres of tillable land did give some advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses.

One of the important advantages of the more successful farms was that of larger crop yields. They produced 7 bushels more corn, 6 bushels more oats, and 14 bushels more barley per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield, since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 5 acres less corn and 2 acres more oats. The two groups had the same average acreage of barley.

On the more profitable farms one of the chief advantages was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$136 of livestock income from each \$100 of feed other than pasture, while the less successful farmers had a corresponding income of only \$113. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms but the additional \$23 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$2800 worth of feed which was fed on the average farm in this area this advantage of \$23 a hundred amounts to a total of more than \$640 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$90 dairy sales per dairy cow as compared with \$60 per dairy cow on the less profitable farms. As to the amount of livestock, the more successful farms had a livestock investment of about \$19 an acre while the less successful farms had a corresponding investment of \$15 an acre.

The labor efficiency was high on farms of the more successful group. They had the same labor cost per acre but due to their larger incomes from less labor their labor cost per \$100 income was only \$29 as compared with \$45 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$16 for each \$100 of income.

The combined cost of feed for horses, horse depreciations and power and machinery per crop acre was \$1.00 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group, and they had less livestock per acre.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$20.17 and an expense of \$10.76 an acre as compared with \$12.92 income and \$11.97 expense on the least profitable 10 farms. This resulted in average net incomes of \$9.41 and 95 cents an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Jo Daviess and adjoining counties for the period 1927-1930. The rate earned was lowest for 1927 when crop yields were lower than in 1930. Prices were higher in 1927, however, and most areas of the state show lower average farm earnings in 1930 than in 1927. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In four years it has varied from nothing to \$911.

Comparative Earnings and Investment Figures on Farms in Jo Daviess County
for 1927-1930

Items	1927*	1928*	1929	1930
Numbers of farms - - - - -	33	53	32	30
Average size of farms, acres - - -	206	205	215	213
Average rate earned, to pay for management, risk and capital- -	2.4%	5.6%	5.7%	3.8%
Average labor and management wage-	\$-260.	\$ 896.	\$ 911	\$ 311
Average value of land per acre - -	112	105	95	91
Average investment per acre- - - -	177	163	155	149
Investment in livestock per farm -	4454	3776	3991	4158
Investment in cattle per farm- - -	2392	2064	2495	2603
Investment in hogs per farm- - - -	1352	1001	825	841
Investment in poultry per farm - -	167	177	176	203
Gross income per acre- - - - -	21.62	22.03	22.13	16.87
Operating cost per acre- - - - -	17.40	12.86	13.33	11.23
Net increase from crops per farm -	0.00	0.00	0.00	0.00
Miscellaneous income per farm- - -	91	58	53	42
Livestock income per farm- - - - -	4366	4459	4706	3553
Gross income per farm- - - - -	4457	4517	4759	3595
Cattle income per farm - - - - -	1147	990	927	468
Dairy sales per farm - - - - -	1162	1243	1566	1183
Hog income per farm- - - - -	1746	1757	1727	1589
Poultry income per farm- - - - -	267	389	406	285
Average yield corn in bu.- - - - -	35	48	41	47
Average yield oats in bu.- - - - -	35	48	36	51

*Records of Jo Daviess and Carroll counties.

Jo Daviess County, 1930

Item	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
Capital Investments--Land - - - -		19 332	16 889	18 565
Farm Improvements - - - -		4 950	4 222	4 759
Horses- - - -		389	333	407
Cattle- - - -		2 603	2 525	2 380
Hogs- - - -		841	923	676
Sheep - - - -		122	108	188
Bees- - - -		---	---	---
Poultry - - - -		203	227	137
Livestock--Total - - - -		4 158	4 116	3 789
Machinery and equipment- - - -		1 670	1 503	1 337
Feed, grain and supplies - - - -		1 746	1 526	1 551
Total Investment- - - -	\$	\$31 856	\$28 256	\$30 000
<u>Receipts--Net Increases</u> - - - -				
Horses - - - -		---	---	---
Cattle- - - -		468	659	347
Hogs- - - -		1 589	1 579	1 445
Sheep - - - -		28	39	36
Bees- - - -		---	---	---
Poultry - - - -		87	99	67
Egg Sales - - - -		198	218	137
Dairy Sales - - - -		1 183	1 273	711
Livestock--Total - - - -		3 553	3 867	2 743
Feed, grain and supplies - - - -		---	3	---
Labor off farm - - - -		38	45	20
Miscellaneous receipts - - - -		4	8	---
Total Receipts--Net Increases - -	\$	\$ 3 595	\$3 923	\$2 763
<u>Expenses--Net Decreases</u> - - - -				
Farm Improvements - - - -		198	139	218
Horses- - - -		31	24	28
Miscellaneous livestock decreases - - - -		---	---	---
Machinery and equipment - - - -		353	294	351
Feed, grain and supplies- - - -		59	---	242
Livestock expense - - - -		82	152	55
Crop expense- - - -		152	123	129
Hired labor - - - -		257	237	231
Taxes - - - -		212	168	243
Miscellaneous expenses- - - -		33	31	33
Total Expenses--Net Decreases	\$	\$1 377	\$1 168	\$1 530
Receipts Less Expenses- - - -	\$	\$2 218	\$2 755	\$1 233
Total unpaid labor- - - -		016	924	031
Operator's labor- - - -		702	720	708
Family labor- - - -		314	204	323
Net income from investment and management -		1 202	1 831	202
Rate earned on investment - - - -	%	3.77 %	6.48 %	.67 %
Return to capital and operator's labor and management		1 904	2 551	910
5 percent of capital invested -		1 593	1 413	1 500
Labor and management wage - - - -	\$	\$ 311	\$1 138	\$ 590

Jo Daviess County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Barley	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm	
10.77	68	72	50	135	340	290	197	140	24	2.00	14	32	31	7 000	355
9.77	65	69	48	125	320	270	187	130	23	2.50	17	37	29	6 500	335
8.77	62	66	46	115	300	250	177	120	22	3.00	20	42	27	6 000	315
7.77	59	63	44	105	280	230	167	110	21	3.50	23	47	25	5 500	295
6.77	56	60	42	95	260	210	157	100	20	4.00	26	52	23	5 000	275
5.77	53	57	40	85	240	190	147	90	19	4.50	29	57	21	4 500	255
4.77	50	54	38	75	220	170	137	80	18	5.00	32	62	19	4 000	235
3.77	47	51	36	65	200	150	127	70	17	5.50	35	67	17	3 500	215
2.77	44	48	34	55	180	130	117	60	16	6.00	38	72	15	3 000	195
1.77	41	45	32	45	160	110	107	50	15	6.50	41	77	13	2 500	175
.77	38	42	30	35	140	90	97	40	14	7.00	44	82	11	2 000	155
--.23	35	39	28	25	120	70	87	30	13	7.50	47	87	9	1 500	135
-1.23	32	36	26	15	100	50	77	20	12	8.00	50	92	7	1 000	115
-2.23	29	33	24	5	80	30	67	10	11	8.50	53	97	5	500	95
-3.23	26	30	22	---	60	10	57	---	10	9.00	56	102	3	---	75

Jo Daviess County, 1930

Factors helping to analyze the farm business	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -	_____	213	194	214
Percent of land area tillable - -	_____	70%	77%	63%
Gross receipts per acre - - - - -	_____	16.87	20.17	12.92
Total expenses per acre - - - - -	_____	11.23	10.76	11.97
Net receipts per acre - - - - -	_____	5.64	9.41	.95
Value of land per acre- - - - -	_____	91	87	87
Total investment per acre - - - -	_____	149	145	140
Acres in Corn - - - - -	_____	40	32	37
Oats - - - - -	_____	26	26	24
Barley - - - - -	_____	8	7	7
Crop yields--Corn, bu. per acre- -	_____	46.8	52.4	45.1
Oats, bu. per acre- -	_____	50.8	51.6	45.4
Barley, bu. per acre-	_____	36.0	44.4	30.3
Value of feed fed to productive livestock- - - - -	_____	2801	2840	2417
Returns per \$100 of feed fed to productive livestock -	_____	127	136	113
Returns per \$100 invested in:				
All productive livestock-	_____	97	105	85
Cattle- - - - -	_____	65	76	47
Hogs- - - - -	_____	199	190	220
Poultry - - - - -	_____	149	148	158
Dairy sales per dairy cow - - - -	_____	71	90	60
Investment in productive livestock per acre	_____	17.15	18.99	15.07
Receipts from productive livestock per acre	_____	16.67	19.88	12.82
Man labor cost per \$100 gross income - - - - -	_____	35	29	45
Man labor cost per acre- - - - -	_____	5.89	5.86	5.85
Value of feed fed to horses- - -	_____	232	229	281
Power and machinery cost per crop acre- - - - -	_____	5.47	5.36	6.34
Expenses per \$100 gross income -	_____	67	53	93
Machinery cost per acre- - -	_____	1.66	1.51	1.64
Farm improvements cost per acre - - - - -	_____	.93	.71	1.02
Farms with tractor - - - - -	_____	70%	60%	80%
Excess of sales over expenses- -	_____	2250	2484	1677
Decrease in inventory- - - - -	_____	32	Inc.271	444

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Rock Island, Carroll and Whiteside Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, R. G. Trummel, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Rock Island, Carroll and Whiteside Counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 59 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.2 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$346 a farm, there remains a rate of 1.2 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$243 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$120 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$194 an acre. The land and improvements exclusive of the residence averaged \$148 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful. *J. R. Spencer, M. P. Roske, and F. H. Shuman, farm advisers in Rock Island, Carroll and Whiteside counties, respectively, cooperated in supervising and collecting the records on which this report is based.

ful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$720 while the surplus of sales over expenses was \$2437. For the more successful farms, the corresponding figures were \$182 increase in inventory and \$2634 surplus of income over expense. For the less successful farms the figures were \$1415 reduction in inventory and \$1946 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. The small increase in inventories on the more successful farms was due to increases in the quantity of grain and the number of hogs on hand at the end of the year as compared with the beginning of the year. The less successful farms had average decreases in both of these items.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2289 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 12 acres difference in average size between the most profitable 20 farms and the least profitable 20 farms, the average size of all farms being 178 acres. The difference in percentage of tillable land was only 1 percent. Difference in acreage was not an important factor in the difference in income. In fact, reports of this kind have often shown the more success-

ful farms somewhat smaller.

One of the advantages of the more successful farms was that of larger crop yields. They produced 3 bushels more corn and 3 bushels more oats per acre than the less successful farms. Acreages of wheat and barley were so small that difference in yield of these crops was unimportant. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 9 acres more corn and 5 acres more oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$157 of livestock income from each \$100 worth of feed other than pasture, while the less successful farms had a corresponding income of only \$113. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$44 from each \$100 worth of feed on the most profitable 20 farms was an important factor in their larger net incomes. On over \$2900 worth of feed which was fed on the average farm in this area this advantage of \$44 a hundred amounts to a total of more than \$1250 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$110 dairy sales per dairy cow as compared with \$57 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference. The more successful farms had a livestock investment per acre amounting to \$17.87 while the corresponding figure for the less successful farms was \$19.02.

The labor efficiency was higher on farms of the more successful group. They had 37 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was \$28 as compared with \$36 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 20 farms had an advantage of \$8 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.17 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group and there is no evidence of a corresponding return for this extra cost.

The situation is summed up in the gross receipts and expense per acre. The most profitable 20 farms had an average gross income of \$23.34 and an expense of \$13.19 an acre as compared with \$18.90 income and \$21.35 expense on the least profitable 20 farms. This resulted in an average net income of \$10.15 and a net loss of \$2.45 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Rock Island, Carroll, Whiteside and adjoining counties for the period 1926-1930 inclusive. The rate earned was lowest for 1930. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$793. The relatively high operating expense per acre for 1927 and 1930 is due in

part at least to larger purchases of feed in those years.

Comparative Earnings and Investment Figures on Farms in
Rock Island, Carroll, Whiteside and Adjoining Counties
for 1926-1930

Items	1926	1927 ¹	1928 ²	1929 ²	1930
Numbers of farms - - - - -	32	29	49	71	59
Average size of farms, acres - - -	194	196	205	208	178
Average rate earned, to pay for management, risk and capital- -	4.7%	4.2%	4.9%	5.2%	2.2%
Average labor and management wage-	\$595	\$383	\$643	\$798	\$-243
Average value of land per acre - -	131	142	128	122	120
Average investment per acre- - - -	196	212	189	190	194
Investment in livestock per farm -	3917	4546	3766	4389	4025
Investment in cattle per farm- - -	1594	1969	1839	2398	2067
Investment in hogs per farm- - - -	1532	1778	1107	1126	1208
Investment in poultry per farm - -	178	154	153	173	209
Gross income per acre- - - - -	24.96	26.80	22.31	23.40	22.19
Operating cost per acre- - - - -	15.66	17.85	13.05	13.54	17.89
Net increase from crops per farm -	000	000	131	000	000
Miscellaneous income per farm- - -	41	34	61	39	42
Livestock income per farm- - - - -	4811	5231	4392	4829	3914
Gross income per farm- - - - -	4852	5265	4584	4868	3956
Cattle income per farm - - - - -	796	1374	1066	1115	691
Dairy sales per farm - - - - -	658	674	944	836	684
Hog income per farm- - - - -	2991	2853	1946	2408	2167
Poultry income per farm- - - - -	318	271	306	389	350
Average yield corn in bu.- - - - -	44	43	50	46	46
Average yield oats in bu.- - - - -	30	39	44	45	46

1. Some records from Mercer county included for 1927.

2. Some records from Ogle and Lee counties included for 1928 and 1929.

Rock Island, Carroll and Whiteside Counties, 1930

Item	Your farm	Average of 59 farms	20 most profitable farms	20 least profitable farms
Capital Investments--Land - - - - -		21 476	20 696	21 115
Farm Improvements - - - - -		4 984	4 535	4 646
Horses- - - - -		452	418	441
Cattle- - - - -		2 067	2 259	2 033
Hogs- - - - -		1 208	864	1 252
Sheep - - - - -		89	21	154
Bees- - - - -		--	--	--
Poultry - - - - -		209	189	211
Livestock--Total - - - - -		4 025	3 751	4 091
Machinery and equipment- - - - -		1 931	1 719	1 904
Feed, grain and supplies - - - - -		2 205	2 094	2 153
Total Investment- - - - -	\$	\$34 621	\$32 795	\$33 909
<u>Receipts--Net Increases</u>				
Horses- - - - -		--	--	--
Cattle- - - - -		691	787	437
Hogs- - - - -		2 167	1 984	2 090
Sheep - - - - -		22	9	7
Bees- - - - -		--	--	--
Poultry - - - - -		102	110	109
Egg sales - - - - -		248	232	184
Dairy sales - - - - -		684	1 139	381
Livestock--Total - - - - -		3 914	4 261	3 208
Feed, grain and supplies - - - - -		--	--	--
Labor off farm - - - - -		40	31	39
Miscellaneous receipts - - - - -		2	1	6
Total Receipts--Net Increases - - - - -	\$	\$ 3 956	\$ 4 293	\$ 3 253
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		255	193	303
Horses- - - - -		25	22	42
Miscellaneous livestock decreases - - - - -		--	--	--
Machinery and equipment - - - - -		462	427	509
Feed, grain and supplies- - - - -		712	59	1 101
Livestock expense - - - - -		63	48	75
Crop expense- - - - -		174	188	167
Hired labor - - - - -		260	259	249
Taxes - - - - -		258	252	245
Miscellaneous expenses- - - - -		30	29	31
Total Expenses--Net Decreases - - - - -	\$	\$ 2 239	\$ 1 477	\$ 2 722
Receipts Less Expenses- - - - -	\$	\$ 1 717	\$ 2 816	\$ 531
Total unpaid labor- - - - -		951	949	953
Operator's labor- - - - -		722	696	750
Family labor- - - - -		229	253	203
Net income from investment and management - - - - -		766	1 867	-422
Rate earned on investment - - - - -	%	2.21 %	5.69 %	-1.24 %
Return to capital and operator's labor and management - - - - -		1 488	2 563	328
5 percent of capital invested - - - - -		1 731	1 640	1 695
Labor and management wage - - - - -	\$	\$ -243	\$ 923	\$-1 367

Rock Island, Carroll, Whiteside Counties, 1930.

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Barley	Cattle	Hogs	Poultry					Man labor	Operating expenso	Per acre	Per farm	
9.21	67	67	44	142	330	312	203	158	33	2.75	16	45	43	7 500	320
8.21	64	64	42	132	310	292	193	148	31	3.25	18	50	40	7 000	300
7.21	61	61	40	122	290	272	183	138	29	3.75	20	55	37	6 500	280
6.21	58	58	38	112	270	252	173	128	27	4.25	22	60	34	6 000	260
5.21	55	55	36	102	250	232	163	118	25	4.75	24	65	31	5 500	240
4.21	52	52	34	92	230	212	153	108	23	5.25	26	70	28	5 000	220
3.21	49	49	32	82	210	192	143	98	21	5.75	28	75	25	4 500	200
2.21	46	46	30	72	190	172	133	88	19	6.25	30	80	22	4 000	180
1.21	43	43	28	62	170	152	123	78	17	6.75	32	85	19	3 500	160
.21	40	40	26	52	150	132	113	68	15	7.25	34	90	16	3 000	140
-.79	37	37	24	42	130	112	103	58	13	7.75	36	95	13	2 500	120
-1.79	34	34	22	32	110	92	93	48	11	8.25	38	100	10	2 000	100
-2.79	31	31	20	22	90	72	83	38	9	8.75	40	105	7	1 500	80
-3.79	28	28	18	12	70	52	73	28	7	9.25	42	110	4	1 000	60
-4.79	25	25	16	2	50	32	63	18	5	9.75	44	115	1	500	40

Rock Island, Carroll and Whiteside Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 59 farms	20 most profitable farms	20 least profitable farms
Size of farm--acres - - - - -	_____	178	184	172
Percent of land area tillable - - - - -	_____	83%	82%	81%
Gross receipts per acre - - - - -	_____	22.19	23.34	18.90
Total expenses per acre - - - - -	_____	17.89	13.19	21.35
Net receipts per acre - - - - -	_____	4.30	10.15	-2.45
Value of land per acre- - - - -	_____	120	113	123
Total investment per acre - - - - -	_____	194	178	197
Acres in Corn - - - - -	_____	58	62	53
Oats - - - - -	_____	26	27	22
Wheat- - - - -	_____	6	6	6
Barley - - - - -	_____	8	6	9
Crop yields--Corn, bu. per acre- - -	_____	46.3	47.6	44.5
Oats, bu. per acre- - -	_____	46.4	47.4	44.8
Wheat, bu. per acre - -	_____	25.3	28.4	23.5
Barley, bu. per acre- -	_____	29.7	30.4	30.7
Value of feed fed to productive livestock - - - - -	_____	2936	2713	2840
Returns per \$100 of feed fed to productive livestock- - -	_____	133	157	113
Returns per \$100 invested in:				
All productive livestock- -	_____	117	130	98
Cattle- - - - -	_____	72	89	46
Hogs- - - - -	_____	190	221	179
Poultry - - - - -	_____	172	181	146
Dairy sales per dairy cow - - - - -	_____	88	110	57
Investment in productive livestock per acre- -	_____	18.79	17.87	19.02
Receipts from productive livestock per acre- -	_____	21.95	23.17	18.64
Man labor cost per \$100 gross income - - - - -	_____	30	28	36
Man labor cost per acre - - - - -	_____	6.68	6.49	6.86
Value of feed fed to horses - - - - -	_____	274	273	268
Power and machinery cost per crop acre - - - - -	_____	6.29	5.80	6.97
Expenses per \$100 gross income- - -	_____	81	57	113
Machinery cost per acre- - - - -	_____	2.59	2.32	2.96
Farm improvements cost per acre	_____	1.43	1.05	1.76
Farms with tractor- - - - -	_____	64%	50%	75%
Excess of sales over expenses - - -	_____	2437	2634	1946
Decrease in inventory - - - - -	_____	720	182 Inc.	1415

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Stephenson, Ogle and Lee Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Stephenson, Ogle and Lee Counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 55 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.8 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$377 a farm, there remains a rate of 1.8 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$72 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$113 an acre, not including buildings. Other items including improvements, equipment, livestock and feed made a total investment of \$183 an acre. The land and improvements exclusive of the residence averaged \$143 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earnings 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through

*V. J. Banter, D. E. Warren, and C. E. Yale, farm advisers in Stephenson, Ogle and Lee counties, respectively, cooperated in supervising and collecting the records on which this report is based.

their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$611 while the surplus of sales over expenses was \$2588. For the more successful farms, the corresponding figures were \$78 reduction in inventory and \$2939 surplus of income over expense. For the less successful farms the figures were \$1318 reduction in inventory and \$2339 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. The smaller inventory decrease on the more profitable farms is due chiefly to the following facts. These farms had increases in numbers of hogs and quantities of grain on hand at the close of the year as compared with the beginning of the year amounting to 12 head of hogs and 428 bushels of corn. They also had about 25 percent less cattle per farm than the less profitable farms and cattle values were reduced more than most other classes of farm property during 1930.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$1727 a farm.

The most profitable 18 farms averaged 41 acres smaller than the least profitable 18 farms and there was only 2 percent difference in the percentage of tillable land. As a rule reports on other areas for 1930 show the more successful farms

larger, but in this area the larger farms tend to have beef cattle instead of dairy cattle and for 1930 producers of beef generally realized little gain in that enterprise.

As a rule, one of the important advantages of the more successful farms is that of larger crop yields. In this case, however, there was little difference in crop yields between the two groups. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 13 acres less corn and 21 acres less oats. The acreage of wheat and barley was small for both groups.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$145 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$114. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$31 from each \$100 worth of feed on the most profitable 18 farms was an important factor in their larger net incomes. On about \$2875 worth of feed which was fed on the average farm in this area this advantage of \$31 a hundred amounts to a total of more than \$875 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$117 dairy sales per dairy cow as compared with \$93 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference. The average livestock investment per acre on the more successful farms amounted to \$20 as compared with \$18 an acre for the less successful farms.

The labor efficiency was higher on farms of the more successful group. They had 28 cents an acre more labor cost but due to their larger incomes from slightly more labor their labor cost per \$100 income was only \$26 as compared with \$38 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 18 farms had an advantage of \$12 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.24 higher on the less successful farms. This is in spite of the fact that corn yields were lower on farms of the latter group, and they had less livestock per acre. They also had an advantage in larger acreage per farm.

The situation is summed up in the gross receipts and expense per acre. The most profitable 18 farms had an average gross income of \$23.46 and an expense of \$13.44 an acre as compared with \$15.16 income and \$14.47 expense on the least profitable 18 farms. This resulted in average net incomes of \$10.02 and 69 cents an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Stephenson, Ogle, and Lee Counties for the period 1927-1930 inclusive. The rate earned was lowest for 1930. It is interesting to note that the average operating cost per acre has remained fairly stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are

averaged yet there is considerable variation between individual farms in the operating cost per acre. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$1332.

Comparative Earnings and Investment Figures on Farms in
Stephenson, Ogle and Lee Counties for 1927-1930

Items	1927 ¹	1928 ¹	1929 ¹	1930
Numbers of farms - - - - -	30	32	30	55
Average size of farms, acres - - - -	156	152	157	206
Average rate earned, to pay for management, risk and capital- - -	3.5%	6.9%	7.0%	2.8%
Average labor and management wage- -	250	1267	1332	-72
Average value of land per acre - - -	121	112	112	113
Average investment per acre- - - - -	195	191	199	183
Investment in livestock per farm - - -	3527	3730	3977	4293
Investment in cattle per farm- - - -	1729	2176	2366	2652
Investment in hogs per farm- - - - -	1042	829	975	812
Investment in poultry per farm - - - -	159	194	193	173
Gross income per acre- - - - -	23.82	28.44	33.03	18.15
Operating cost per acre- - - - -	16.99	15.28	19.19	12.94
Net increase from crops per farm - - -	000	000	000	000
Miscellaneous income per farm- - - -	57	52	60	64
Livestock income per farm- - - - -	3656	4277	5126	3676
Gross income per farm- - - - -	3713	4329	5186	3740
Cattle income per farm - - - - -	718	879	853	691
Dairy sales per farm - - - - -	1288	1422	1747	1158
Hog income per farm- - - - -	1295	1563	2034	1548
Poultry income per farm- - - - -	286	358	411	239
Average yield corn in bu.- - - - -	35	52	45	41
Average yield oats in bu.- - - - -	34	52	38	49

¹Stephenson County records only for 1927, 1928 and 1929.

Stephenson, Ogle and Lee Counties, 1930

Item	Your farm	Average of 55 farms	18 most profitable farms	18 least profitable farms
Capital Investments--Land - - - - -		23 303	18 834	26 069
Farm Improvements - - - - -		6 093	5 423	7 554
Horses- - - - -		496	475	572
Cattle- - - - -		2 652	2 492	3 292
Hogs- - - - -		812	980	791
Sheep - - - - -		160	155	225
Bees- - - - -		---	---	---
Poultry - - - - -		173	165	192
Livestock--Total - - - - -		<u>4 293</u>	<u>4 267</u>	<u>5 072</u>
Machinery and equipment- - - - -		1 816	1 766	1 990
Feed, grain and supplies - - - - -		2 183	2 075	2 405
Total Investment- - - - -	\$	\$ 37 688	\$ 32 365	\$ 43 090
Receipts-Net Increases- - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		691	728	875
Hogs- - - - -		1 548	1 906	1 279
Sheep - - - - -		40	56	33
Bees- - - - -		---	---	---
Poultry - - - - -		53	55	61
Egg sales - - - - -		186	209	174
Dairy sales - - - - -		1 158	1 386	971
Livestock--Total - - - - -		<u>3 676</u>	<u>4 340</u>	<u>3 393</u>
Feed, grain and supplies - - - - -		---	---	---
Labor off farm - - - - -		45	69	27
Miscellaneous receipts - - - - -		19	---	54
Total Receipts--Net Increases - - - - -	\$	\$ 3 740	\$ 4 409	\$ 3 474
Expenses--Net Decreases - - - - -				
Farm Improvements - - - - -		314	185	515
Horses- - - - -		28	9	38
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		451	331	598
Feed, grain and supplies- - - - -		49	274	106
Livestock expense - - - - -		71	80	88
Crop expense- - - - -		220	207	246
Hired labor - - - - -		291	188	473
Taxes - - - - -		308	246	358
Miscellaneous expenses- - - - -		31	28	31
Total Expenses--Net Decreases - - - - -	\$	\$ 1 763	\$ 1 548	\$ 2 453
Receipts Less Expenses- - - - -	\$	\$ 1 977	\$ 2 861	\$ 1 021
Total unpaid labor- - - - -		903	977	864
Operator's labor- - - - -		738	760	736
Family labor- - - - -		165	217	128
Net income from investment and management - - - - -		1 074	1 884	157
Rate earned on investment - - - - -	%	2.85%	5.82%	.36%
Return to capital and operator's labor and management - - - - -		1 812	2 644	893
5 percent of capital invested - - - - -		1 884	1 618	2 154
Labor and management wage - - - - -	\$	\$ 72	\$ 1 026	\$ -1 261

Stephenson, Ogle and Lee Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Barley	Cattle	Hogs					Poultry	Man labor	Operat-ing expense	Per acre		Per farm
9.85	62	70	50	144	334	290	171	24	1.80	17	35	39	7 000	345
8.85	59	67	48	134	314	270	161	23	2.30	19	40	36	6 500	325
7.85	56	64	46	124	294	250	151	22	2.80	21	45	33	6 000	305
6.85	53	61	44	114	274	230	141	21	3.30	23	50	30	5 500	285
5.85	50	58	42	104	254	210	131	20	3.80	25	55	27	5 000	265
4.85	47	55	40	94	234	190	121	19	4.30	27	60	24	4 500	245
3.85	44	52	38	84	214	170	111	18	4.80	29	65	21	4 000	225
2.85	41	49	36	74	194	150	101	17	5.30	31	70	18	3 500	205
1.85	38	46	34	64	174	130	91	16	5.80	33	75	15	3 000	185
.85	35	43	32	54	154	110	81	15	6.30	35	80	12	2 500	165
-.15	32	40	30	44	134	90	71	14	6.80	37	85	9	2 000	145
-.1.15	29	37	28	34	114	70	61	13	7.30	39	90	6	1 500	125
-.2.15	26	34	26	24	94	50	51	12	7.80	41	95	3	1 000	105
-.3.15	23	31	24	14	74	30	41	11	8.30	43	100	0	500	85
-.4.15	20	28	22	4	54	10	31	10	8.80	45	105	---	---	65

Stephenson, Ogle and Lee Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 55 farms	18 most profitable farms	18 least profitable farms
Size of farm--acres - - - - -	_____	206	188	229
Percent of land area tillable - - -	_____	80%	82%	80%
Gross receipts per acre - - - - -	_____	18.15	23.46	15.16
Total expenses per acre - - - - -	_____	12.94	13.44	14.47
Net receipts per acre - - - - -	_____	5.21	10.02	.69
Value of land per acre- - - - -	_____	113	100	114
Total investment per acre - - - - -	_____	183	172	188
Acres in Corn - - - - -	_____	63	60	73
Oats - - - - -	_____	36	28	49
Wheat- - - - -	_____	5	7	3
Barley - - - - -	_____	8	9	7
Crop yields--Corn, bu. per acre- - -	_____	41.3	44.8	40.9
Oats, bu. per acre- - -	_____	49.2	47.4	47.9
Barley, bu. per acre- - -	_____	35.9	34.0	34.6
Value of feed fed to productive livestock- - - - -	_____	2875	2992	2986
Returns per \$100 of feed fed to productive livestock - - -	_____	128	145	114
Returns per \$100 invested in:				
All productive livestock- - -	_____	103	115	83
Cattle- - - - -	_____	74	86	62
Hogs- - - - -	_____	194	185	171
Poultry - - - - -	_____	151	166	139
Dairy sales per dairy cow - - - - -	_____	101	117	93
Investment in productive livestock per acre - - -	_____	17.40	20.00	17.72
Receipts from productive livestock per acre - - -	_____	17.84	23.09	14.80
Man labor cost per \$100 gross income- - - - -	_____	31	26	38
Man labor cost per acre - - - - -	_____	5.70	6.05	5.77
Value of feed fed to horses - - - - -	_____	264	240	267
Power and machinery cost per crop acre - - - - -	_____	5.31	4.48	5.72
Expenses per \$100 gross income- - -	_____	71	57	95
Machinery cost per acre - - - - -	_____	2.19	1.76	2.61
Farm improvements cost per acre	_____	1.52	.98	2.25
Farms with tractor- - - - -	_____	58%	50%	67%
Excess of sales over expenses - - -	_____	2588	2939	2339
Decrease in inventory - - - - -	_____	611	78	1318

Meeting Low Prices for Farm Products
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Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

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In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Adams County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, L. W. Wright, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Adams County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 30 farmers in Adams County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 1.3 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$286 a farm, there remains a rate of 3 tenths of 1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$386 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$98 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$145 an acre. The land and improvements exclusive of the residence averaged \$116 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies

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pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$376 while the surplus of sales over expenses was \$1599. For the more successful farms, the corresponding figures were \$178 increase in inventory and \$2407 surplus of income over expenses. For the less successful farms the figures were \$1175 reduction in inventory and \$1205 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. The small increase in inventory on the more profitable farms was due to the fact that these farms had more feed and grain on hand at the close than at the beginning of the year. They had 210 bushels more corn, 139 bushels more oats, and some increases in other items while the less profitable farms had less feed and grain at the close than at the beginning of the year. The increased quantity of feed on the more profitable farms is accounted for in their larger purchases of feed as compared with the less profitable farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2519 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 5 acres difference in average size between the most profitable 10 farms and the least profitable 10 farms, the average size of all farms being 198 acres. The difference in percentage of tillable land was only 7 percent. Difference in acreage was not an important factor in the difference in income.

One of the important advantages of the more successful farms was that of larger crop yields. They produced $3\frac{1}{2}$ bushels more corn and 5 bushels more oats per acre than the less successful farms. This difference is less than is usually found in studies of this kind, and the wheat yield was somewhat larger on the less successful farms. It is evident that the chief advantages of the more successful farms in this case are to be found in other factors. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same, and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 12 acres more corn, 1 acre more wheat, and 3 acres less oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$173 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$108. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$65 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$2000 worth of feed which was fed on the average farm in this area this advantage of \$65 a hundred amounts to a total of more than \$1300 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$116 dairy sales per dairy cow as compared with \$28 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference, each of them having about \$10 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was higher on farms of the more successful group. They had only one cent an acre less labor cost, but due to their larger incomes from the same labor their labor cost per \$100 income was only \$28 as compared with \$51 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$23 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.05 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group, and there is no evidence that the extra cost for power and equipment brought a corresponding return.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$21.50 and an expense of \$12.58 an acre as compared with \$11.83 income and \$16.35 expense on the least profitable 10 farms. This resulted in an average net income of \$8.92 and a net loss of \$4.52 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Adams County for the period 1928-1930 inclusive. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$15 an acre in the 3 year period and were lowest in 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In three years it has varied from nothing to \$970.

Comparative Earnings and Investment Figures on Farms in Adams County for 1928-1930

Items	1928	1929	1930
Numbers of farms - - - - -	28	30	30
Average size of farms, acres - - - - -	184	192	198
Average rate earned, to pay for management, risk and capital- - - - -	5.9%	3.0%	1.3%
Average labor and management wage- - - - -	\$970	\$ 83	\$-386
Average value of land per acre - - - - -	115	107	98
Average investment per acre- - - - -	163	156	145
Investment in livestock per farm - - - - -	2658	2574	2517
Investment in cattle per farm- - - - -	1206	1062	1094
Investment in hogs per farm- - - - -	767	837	785
Investment in poultry per farm - - - - -	148	140	144
Gross income per acre- - - - -	22.53	18.33	14.26
Operating cost per acre- - - - -	12.94	13.68	12.41
Net increase from crops per farm - - - - -	277	000	000
Miscellaneous income per farm- - - - -	104	91	92
Livestock income per farm- - - - -	3772	3428	2728
Gross income per farm- - - - -	4153	3519	2820
Cattle income per farm - - - - -	790	437	220
Dairy sales per farm - - - - -	653	542	419
Hog income per farm- - - - -	1869	2052	1861
Poultry income per farm- - - - -	323	305	203
Average yield corn in bu.- - - - -	42	36	29
Average yield oats in bu.- - - - -	40	34	30

Adams County, 1930

Item	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
<u>Capital Investments</u> ---Land - - - - -		19,360	13,699	16,913
Farm Improvements - - - - -		3,566	3,516	3,905
Horses- - - - -		408	429	399
Cattle- - - - -		1,094	1,179	861
Hogs- - - - -		785	723	832
Sheep - - - - -		86	31	128
Bees- - - - -		---	---	---
Poultry - - - - -		144	147	160
Livestock--Total - - - - -		<u>2,517</u>	<u>2,509</u>	<u>2,400</u>
Machinery and equipment- - - - -		1,430	1,450	1,468
Feed, grain and supplies - - - - -		1,697	1,778	1,955
Total Investment- - - - -	\$	<u>\$28,570</u>	<u>\$27,952</u>	<u>\$26,641</u>
<u>Receipts--Net Increases</u>				
Horses- - - - -		4	27	13
Cattle- - - - -		220	179	149
Hogs- - - - -		1,861	1,861	1,618
Sheep - - - - -		21	11	27
Bees- - - - -		---	---	---
Poultry - - - - -		57	77	34
Egg sales - - - - -		146	192	146
Dairy sales - - - - -		419	922	124
Livestock--Total - - - - -		<u>2,728</u>	<u>3,269</u>	<u>2,111</u>
Feed, grain and supplies - - - - -		---	669	---
Labor off farm - - - - -		61	43	61
Miscellaneous receipts - - - - -		31	83	6
Total Receipts--Net Increases - - -	\$	<u>\$ 2,820</u>	<u>\$ 4,064</u>	<u>\$ 2,178</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		196	218	180
Horses- - - - -		---	---	---
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		398	400	447
Feed, grain and supplies- - - - -		178	---	772
Livestock expense - - - - -		45	55	38
Crop expense- - - - -		177	228	152
Hired labor - - - - -		302	269	279
Taxes - - - - -		269	280	253
Miscellaneous expenses- - - - -		32	28	27
Total Expenses--Net Decreases - - -	\$	<u>\$ 1,597</u>	<u>\$ 1,479</u>	<u>\$2,148</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 1,223</u>	<u>\$ 2,585</u>	<u>\$ 30</u>
Total unpaid labor- - - - -		857	898	862
Operator's labor- - - - -		676	684	696
Family labor- - - - -		181	214	166
Net income from investment and management - - -		366	1,687	-832
<u>Rate earned on investment</u> - - - - -	%	<u>1.28%</u>	<u>6.04%</u>	<u>-3.12%</u>
Return to capital and operator's labor and management - - -		1,042	2,371	-136
5 percent of capital invested - - -		1,428	1,398	1,332
Labor and management wage - - - - -	\$	<u>\$ -386</u>	<u>\$ 973</u>	<u>\$-1,468</u>

Adams County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in		L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm		
	Corn	Oats	Wheat	Cattle					Hogs	Poultry	Man labor	Operat-ing expense		Per acre	Per farm
8.28	50	51	34	132	394	295	203	148	17	1.50	19	52	35	6 300	340
7.28	47	48	32	122	374	275	193	138	16	2.00	22	57	32	5 800	320
6.28	44	45	30	112	354	255	183	128	15	2.50	25	62	29	5 300	300
5.28	41	42	28	102	334	235	173	118	14	3.00	28	67	26	4 800	280
4.28	38	39	26	92	314	215	163	108	13	3.50	31	72	23	4 300	260
3.28	35	36	24	82	294	195	153	98	12	4.00	34	77	20	3 800	240
2.28	32	33	22	72	274	175	143	88	11	4.50	37	82	17	3 300	220
1.28	29	30	20	62	254	155	133	78	10	5.00	40	87	14	2 800	200
.28	26	27	18	52	234	135	123	68	9	5.50	43	92	11	2 300	180
-.72	23	24	16	42	214	115	113	58	8	6.00	46	97	8	1 800	160
-1.72	20	21	14	32	194	95	103	48	7	6.50	49	102	5	1 300	140
-2.72	17	18	12	22	174	75	93	38	6	7.00	52	107	2	800	120
-3.72	14	15	10	12	154	55	83	28	5	7.50	55	112	---	300	100
-4.72	11	12	8	2	134	35	73	18	4	8.00	58	117	---	---	80
-5.72	8	9	6	---	114	15	63	8	3	8.50	61	122	---	---	60

Adams County, 1930

Factors helping to analyze the farm business	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -	_____	198	189	184
Percent of land area tillable - - - - -	_____	82%	85%	78%
Gross receipts per acre - - - - -	_____	14.26	21.50	11.83
Total expenses per acre - - - - -	_____	12.41	12.58	16.35
Net receipts per acre - - - - -	_____	1.85	8.92	-4.52
Value of land per acre- - - - -	_____	98	99	92
Total investment per acre - - - - -	_____	145	148	145
Acres in Corn - - - - -	_____	54	58	46
Oats - - - - -	_____	26	24	27
Wheat- - - - -	_____	22	20	19
Crop yields--Corn, bu. per acre - - -	_____	29.4	31.0	27.4
Oats, bu. per acre - - -	_____	30.5	32.2	27.3
Wheat, bu. per acre - - -	_____	20.4	20.4	25.5
Value of feed fed to productive livestock- - - - -	_____	2,044	1,879	1,948
Returns per \$100 of feed fed to productive livestock - - -	_____	133	173	108
Returns per \$100 invested in:				
All productive livestock- - -	_____	139	161	120
Cattle- - - - -	_____	62	90	36
Hogs- - - - -	_____	254	295	212
Poultry - - - - -	_____	155	204	133
Dairy sales per dairy cow - - - - -	_____	78	116	28
Investment in productive livestock per acre - -	_____	9.93	10.63	9.53
Receipts from productive livestock per acre - -	_____	13.78	17.15	11.39
Man labor cost per \$100 gross income- - - - -	_____	40	28	51
Man labor cost per acre - - - - -	_____	5.64	6.00	6.01
Value of feed fed to horses - - - - -	_____	256	299	219
Power and machinery cost per crop acre- - - - -	_____	5.13	5.09	6.14
Expenses per \$100 gross income- - - - -	_____	87	58	138
Machinery cost per acre - - - - -	_____	2.01	2.12	2.43
Farm improvements cost per acre -	_____	.99	1.15	.98
Farms with tractor- - - - -	_____	63%	70%	60%
Excess of sales over expenses - - - - -	_____	1,599	2,407	1,205
Decrease in inventory - - - - -	_____	376	178 Inc.	1,175

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Bureau, Warren and Henry Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, L. Wright, and E. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Bureau, Warren and Henry Counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 43 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 1.6 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$430 a farm, there remains a rate of 6 tenths of 1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$722 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$141 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$203 an acre. The land and improvements exclusive of the residence averaged \$162 an acre.

Other industries besides farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank.

*W. W. Wilson, A. A. Olsen, and H. K. Danforth, farm advisers in Bureau, Warren and Henry Counties, respectively, cooperated in supervising and collecting the records on which this report is based.

For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$1312 while the surplus of sales over expenses was \$2907. For the more successful farms, the corresponding figures were \$323 increase in inventory and \$2361 surplus of income over expense. For the less successful farms the figures were \$2633 reduction in inventory and \$2918 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. In this case unlike most other similar studies there was little difference between the two groups in the balance of income over expense. The increase in inventories on the more profitable farms contrasted with the large decrease on the less profitable farms seems to call for some explanation. A study of the individual records shows that the increase in inventory on the more successful farms was due to an actual increase in quantities of corn and numbers of hogs on hand. These farms had an average increase of 1200 bushels of corn and 49 head of hogs per farm between the beginning and the end of the year. On the other hand the less successful farms had a decrease of nearly 800 bushels of corn, 4 head of hogs, and 4 head of cattle per farm. Another factor causing larger inventory decreases on these farms was the fact that they had nearly three times as many cattle per farm as did the more profitable farms and there was a sharp reduction in cattle values between the beginning and the end of the year.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most

successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2350 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 32 acres difference in average size between the most profitable 14 farms and the least profitable 14 farms, the average size of all farms being 212 acres. The difference in percentage of tillable land was 11 percent which means that there was only a difference of about 5 acres in the amount of tillable land per farm for the two groups. The extra acreage in the less successful farms was nearly all nontillable. Difference in acreage was not an important factor in the difference in income.

As a rule one of the important advantages of the more successful farms is that of larger crop yields. In this case, however, there was little difference in yields. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 8 acres more corn, 7 acres more oats, and 10 acres less wheat.

On the more profitable farms probably the largest advantage was that of high efficiency in the livestock enterprises. The operators of these farms secured \$142 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$104. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$38 from each \$100 worth of feed on the most profitable 14 farms was an important factor in their larger net incomes. On over \$2650 worth of feed which was fed on the average farm in this area this advantage of \$38 a hundred amounts to a total of more than \$1000 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and poultry separately. Dairy sales per cow were slightly higher on the less successful farms but dairying is a minor enterprise on the farms included in this study. The less successful farms had about 40 percent larger investments in livestock per acre but there was no margin of profit in their livestock operations.

The labor efficiency was higher on farms of the more successful group. They had 70 cents an acre less labor cost. Due to their larger income from less labor, their labor cost per \$100 income was \$27 as compared with \$35 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 14 farms had an advantage of \$8 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.55 higher on the less successful farms. Some of this larger cost for power and equipment probably is explained in the larger amount of livestock on these farms.

The situation is summed up in the gross receipts and expense per acre. The most profitable 14 farms had an average gross income of \$21.05 and an expense of \$11.74 an acre as compared with \$18 income and \$20.60 expense on the least profitable 14 farms. This resulted in an average net income of \$9.31 and a net loss of \$2.60 an acre respectively for the two groups. The chief item in the higher expense on the less profitable farms was that of purchased feed. Farmers of this group spent \$1265 a farm for feed which was fed to unprofitable livestock. Even under more favorable price conditions, there undoubtedly are many farms on which the livestock would have shown no profit.

Bureau, Warren, and Henry Counties, 1930

	Your farm	Average of 43 farms	14 most profitable farms	14 least profitable farms
Capital Investments--Land - - - - -		29 967	25 532	31 970
Farm Improvements - - - - -		4 432	3 605	5 297
Horses- - - - -		577	456	560
Cattle- - - - -		1 886	1 043	3 276
Hogs- - - - -		1 296	1 289	1 560
Sheep - - - - -		43	51	13
Bees- - - - -		---	---	---
Poultry - - - - -		146	137	135
Livestock--Total - - - - -		3 948	2 976	5 544
Machinery and equipment- - - - -		1 776	1 410	1 972
Feed, grain and supplies - - - - -		2 936	1 826	3 517
Total Investment- - - - -	\$	\$43 059	\$35 349	\$48 300
Receipts--Net Increases- - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		557	353	1 106
Hogs- - - - -		1 999	2 122	2 239
Sheep - - - - -		14	11	13
Bees- - - - -		---	---	---
Poultry - - - - -		95	103	67
Egg sales - - - - -		125	145	105
Dairy sales - - - - -		392	326	447
Livestock--Total - - - - -		3 182	3 060	3 977
Feed, grain and supplies - - - - -		232	922	---
Labor off farm - - - - -		24	21	17
Miscellaneous receipts - - - - -		2	2	.2
Total Receipts--Net Increases - - - - -	\$	\$ 3 440	\$ 4 005	\$ 3 996
Expenses--Net Decreases - - - - -				
Farm Improvements - - - - -		292	166	458
Horses- - - - -		39	23	41
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		517	367	615
Feed, grain and supplies- - - - -		---	---	1275
Livestock expense - - - - -		64	48	97
Crop expense- - - - -		200	165	269
Hired labor - - - - -		346	181	557
Taxes - - - - -		358	340	371
Miscellaneous expenses- - - - -		29	31	28
Total Expenses--Net Decreases- - - - -	\$	\$ 1 845	\$ 1 321	\$ 3 711
Receipts Less Expenses- - - - -	\$	\$ 1 595	\$ 2 684	\$ 285
Total unpaid labor- - - - -		889	912	863
Operator's labor- - - - -		725	740	720
Family labor- - - - -		164	172	143
Net income from investment and management - - - - -		706	1 772	- 578
Rate earned on investment - - - - -	%	1.64 %	5.01 %	- 1.20 %
Return to capital and operator's labor and management - - - - -		1 431	2 512	142
5 percent of capital invested - - - - -		2 153	1 767	2 415
Labor and management wage - - - - -	\$	\$ -722	\$ 745	\$-2 273

Bureau, Warren, Henry Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in		I. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm			
	Corn	Oats	Wheat	Cattle					Hogs	Poultry	Mani labor	Operat- ing exoense		Per acre	Per farm	
8.64	64	66	38	128	303	298	189	140	28	1.50	21	44	37	10	500	350
7.64	61	63	36	118	283	278	179	130	26	2.00	23	49	34	9	500	330
6.64	58	60	34	108	263	258	169	120	24	2.50	25	54	31	8	500	310
5.64	55	57	32	98	243	238	159	110	22	3.00	27	59	28	7	500	290
4.64	52	54	30	88	223	218	149	100	20	3.50	29	64	25	6	500	270
3.64	49	51	28	78	203	198	139	90	18	4.00	31	69	22	5	500	250
2.64	46	48	26	68	183	178	129	80	16	4.50	33	74	19	4	500	230
1.64	43	45	24	58	163	158	119	70	14	5.00	35	79	16	3	500	210
.64	40	42	22	48	143	138	109	60	12	5.50	37	84	13	2	500	190
-.36	37	39	20	38	123	118	99	50	10	6.00	39	89	10	1	500	170
-1.36	34	36	18	28	103	98	89	40	8	6.50	41	94	7	500	150	
-2.36	31	33	16	18	83	78	79	30	6	7.00	43	99	4	---	---	130
-3.36	28	30	14	8	63	58	69	20	4	7.50	45	104	1	---	---	110
-4.36	25	27	12	---	43	38	59	10	2	8.00	47	109	---	---	---	90
-5.36	22	24	10	---	23	18	49	---	---	8.50	49	114	---	---	---	70

Bureau, Warren, and Henry Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 43 farms	14 most profitable farms	14 least profitable farms
Size of farm--acres - - - - -	-----	212	190	222
Percent of land area tillable - - -	-----	88%	91%	80%
Gross receipts per acre - - - - -	-----	16.23	21.05	18.00
Total expenses per acre - - - - -	-----	12.90	11.74	20.60
Net receipts per acre - - - - -	-----	3.33	9.31	- 2.60
Value of land per acre- - - - -	-----	141	134	144
Total investment per acre - - - - -	-----	203	186	218
Acres in Corn - " - - - - -	-----	88	88	80
Oats - - - - -	-----	33	30	23
Wheat- - - - -	-----	10	7	17
Barley - - - - -	-----	6	9	5
Crop yields--Corn, bu. per acre- - -	-----	43.3	45.4	41.8
Oats, bu. per acre- - -	-----	45.4	46.7	50.5
Wheat, bu. per acre - -	-----	26.7	35.4	24.3
Barley, bu. per acre- -	-----	30.6	29.2	29.3
Value of feed fed to productive livestock- - - - -	-----	2 665	2 152	3 849
Returns per \$100 of feed fed to productive livestock - -	-----	119	142	104
Returns per \$100 invested in:				
All productive livestock- -	-----	105	121	95
Cattle- - - - -	-----	58	70	58
Hogs- - - - -	-----	163	156	163
Poultry - - - - -	-----	158	175	140
Dairy sales per dairy cow - - - - -	-----	70	61	84
Investment in productive livestock per acre -	-----	14.32	13.28	18.95
Receipts from productive livestock per acre -	-----	15.01	16.08	17.91
Man labor cost per \$100 gross income- - - - -	-----	35	27	35
Man labor cost per acre - - - - -	-----	5.75	5.65	6.35
Value of feed fed to horses - - - -	-----	259	237	229
Power and machinery cost per crop acre- - - - -	-----	5.02	4.17	5.72
Expenses per \$100 gross income- - -	-----	79	56	114
Machinery cost per acre - - - - -	-----	2.44	1.93	2.77
Farm improvements cost per acre	-----	1.38	.87	2.06
Farms with tractor- - - - -	-----	72%	71%	79%
Excess of sales over expenses - - -	-----	2 907	2 361	2 918
Decrease in inventory - - - - -	-----	1 312	Inc. 323	2 633

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1915 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Fulton, Peoria and Schuyler Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. E. Wills, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Fulton, Peoria and Schuyler counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 52 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 1.1 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$360 a farm, there remains a rate of 1 tenth of 1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$739 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$113 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$166 an acre. The land and improvements exclusive of the residence averaged \$132 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies

*J. E. Watt, J. W. Whisenand and L. E. McClintic, farm advisers in Fulton, Peoria and Schuyler counties, respectively, cooperated in supervising and collecting the records on which this report is based.

show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$1406 while the surplus of sales over expenses was \$2670. For the more successful farms, the corresponding figures were \$2036 reduction in inventory and \$4312 surplus of income over expense. For the less successful farms the figures were \$1418 reduction in inventory and \$1763 surplus of income over expense. In this case farms in the high earnings group show a greater decrease in inventories, but they had on the average a much larger surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms. Probably the largest single item in the decreased inventories of the more successful farms was that of cattle decreases. These farms had about twice as many cattle per farm at the beginning of the year as did the less successful farms and during the year they show a decrease of 12 cattle per farm. The cattle remaining on hand also had to be written down due to the lower level of prices.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of

all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$1864 a farm.

The more profitable farms averaged 80 acres larger than the less profitable farms. This gave the first group some advantage in volume of business and the opportunity to gain efficient use and low cost per acre for labor, power and equipment.

As a rule one of the important advantages of the more successful farms is that of larger crop yields. In this case, however, there was little difference in crop yields between the two groups. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 21 acres more corn, 12 acres more oats, and 16 acres more wheat.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$143 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$105. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$38 from each \$100 worth of feed on the most profitable 17 farms was an important factor in their larger net incomes. On over \$2500 worth of feed which was fed on the average farm in this area this advantage of \$38 a hundred amounts to a total of more than \$950 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$83 dairy sales per dairy cow as compared with \$65 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference, each of them having about \$13 an acre invested in livestock exclusive of horses and mules. Of course the more successful farms with their larger acreage had more livestock per farm.

The labor efficiency was higher on farms of the more successful group. They had 69 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$25 as compared with \$42 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 17 farms had an advantage of \$17 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$2.53 higher on the less successful farms. Yet these farms had slightly lower crop yields and they had a little less livestock per acre. Of course they had a handicap in their smaller crop acreage over which to spread these costs.

The situation is summed up in the gross receipts and expense per acre. The most profitable 17 farms had an average gross income of \$19.04 and an expense of \$13.80 an acre as compared with \$13.11 income and \$15.82 expense on the least profitable 17 farms. This resulted in an average net income of \$5.24 and a net loss of \$2.71 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Fulton and Schuyler counties for the period 1928-1930 inclusive. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$12 an acre in the three year period and were lowest in 1930. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$1172.

Comparative Earnings and Investment Figures on Farms in Fulton and Schuyler Counties for 1928-1930

Items	1928	1929	1930 ¹
Numbers of farms - - - - -	41	33	52
Average size of farms, acres - - - - -	238	235	218
Average rate earned, to pay for management, risk and capital- - - - -	6.2%	4.5%	1.1%
Average labor and management wage- - - - -	\$1172	\$532	\$-739
Average value of land per acre - - - - -	125	114	113
Average investment per acre- - - - -	167	160	166
Investment in livestock per farm - - - - -	3018	3538	3455
Investment in cattle per farm- - - - -	1098	1534	1618
Investment in hogs per farm- - - - -	1121	1122	1090
Investment in poultry per farm - - - - -	124	118	123
Gross income per acre- - - - -	21.09	19.19	15.61
Operating cost per acre- - - - -	10.75	11.97	13.83
Net increase from crops per farm - - - - -	1094	000	000
Miscellaneous income per farm- - - - -	50	61	82
Livestock income per farm- - - - -	3880	4448	3317
Gross income per farm- - - - -	5024	4509	3399
Cattle income per farm - - - - -	934	847	525
Dairy sales per farm - - - - -	359	330	432
Hog income per farm- - - - -	2251	2931	2160
Poultry income per farm- - - - -	236	218	190
Average yield corn in bu.- - - - -	48	43	29
Average yield oats in bu.- - - - -	44	40	31

1/ Some records from Peoria county included for 1930.

Fulton, Peoria, and Schuyler Counties, 1930

Item	Your farm	Average of 52 farms	17 most profitable farms	17 least profitable farms
<u>Capital Investments--Land</u> - - - - -		24,546	29,955	19,546
Farm Improvements - - - - -		4,219	5,107	3,489
Horses- - - - -		462	493	401
Cattle- - - - -		1,618	2,509	1,332
Hogs- - - - -		1,090	1,433	895
Sheep - - - - -		162	114	263
Bees- - - - -		---	---	---
Poultry - - - - -		123	129	119
Livestock--Total - - - - -		<u>3,455</u>	<u>4,678</u>	<u>3,010</u>
Machinery and equipment- - - - -		1,578	1,889	1,367
Feed, grain and supplies - - - - -		2,257	2,626	1,985
Total Investment- - - - -	\$	<u>\$36,055</u>	<u>\$44,255</u>	<u>\$29,397</u>
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		525	1,036	391
Hogs- - - - -		2,160	3,062	1,451
Sheep - - - - -		10	19	9
Bees- - - - -		---	---	---
Poultry - - - - -		61	50	33
Egg sales - - - - -		129	125	113
Dairy sales - - - - -		432	604	300
Livestock--Total - - - - -		<u>3,317</u>	<u>4,896</u>	<u>2,297</u>
Feed, grain and supplies		---	---	---
Labor off farm - - - - -		67	80	71
Miscellaneous receipts - - - - -		15	9	12
Total Receipts--Net Increases - - - - -	\$	<u>\$ 3,399</u>	<u>\$ 4,985</u>	<u>\$ 2,380</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		243	256	214
Horses- - - - -		39	61	33
Miscellaneous livestock decreases		---	---	---
Machinery and equipment - - - - -		337	273	402
Feed, grain and supplies- - - - -		657	1,047	722
Livestock expense - - - - -		55	69	37
Crop expense- - - - -		181	218	161
Hired labor - - - - -		283	383	192
Taxes - - - - -		312	372	248
Miscellaneous expenses- - - - -		28	30	26
Total Expenses--Net Decreases - - - - -	\$	<u>\$ 2,135</u>	<u>\$ 2,709</u>	<u>\$ 2,035</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 1,264</u>	<u>\$ 2,276</u>	<u>\$ 345</u>
Total unpaid labor- - - - -		877	903	836
Operator's labor- - - - -		677	709	704
Family labor- - - - -		200	194	132
Net income from investment and management - - - - -		387	1,373	-491
Rate earned on investment - - - - -	%	<u>1.07%</u>	<u>3.10%</u>	<u>-1.67%</u>
Return to capital and operator's labor and management		1,064	2,082	213
5 percent of capital invested - - - - -		1,803	2,213	1,470
Labor and management wage - - - - -	\$	<u>\$ -739</u>	<u>\$ -131</u>	<u>\$ -1,257</u>

Fulton, Peoria, Schuyler Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm	
8.07	50	53	35	139	357	300	199	142	19	1.00	19	54	37	7000	360
7.07	47	50	33	129	337	280	189	132	18	1.50	21	59	34	6500	340
6.07	44	47	31	119	317	260	179	122	17	2.00	23	64	31	6000	320
5.07	41	44	29	109	297	240	169	112	16	2.50	25	69	28	5500	300
4.07	38	41	27	99	277	220	159	102	15	3.00	27	74	25	5000	280
3.07	35	38	25	89	257	200	149	92	14	3.50	29	79	22	4500	260
2.07	32	35	23	79	237	180	139	82	13	4.00	31	84	19	4000	240
1.07	29	32	21	69	217	160	129	72	12	4.50	33	89	16	3500	220
.07	26	29	19	59	197	140	119	62	11	5.00	35	94	13	3000	200
-.93	23	26	17	49	177	120	109	52	10	5.50	37	99	10	2500	180
-1.93	20	23	15	39	157	100	99	42	9	6.00	39	104	7	2000	160
-2.93	17	20	13	29	137	80	89	32	8	6.50	41	109	4	1500	140
-3.93	14	17	11	19	117	60	79	22	7	7.00	43	114	1	1000	120
-4.93	11	14	9	9	97	40	69	12	6	7.50	45	119	—	500	100
-5.93	8	11	7	—	77	20	59	2	5	8.00	47	124	—	—	80

Fulton, Peoria, and Schuyler Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 52 farms	17 most profitable farms	17 least profitable farms
Size of farm--acres - - - - -	_____	218	262	182
Percent of land area tillable - - - -	_____	74%	76%	68%
Gross receipts per acre - - - - -	_____	15.61	19.04	13.11
Total expenses per acre - - - - -	_____	13.33	13.80	15.82
Net receipts per acre - - - - -	_____	1.78	5.24	-2.71
Value of land per acre- - - - -	_____	113	114	108
Total investment per acre - - - - -	_____	166	169	162
Acres in Corn - - - - -	_____	56	66	45
Oats - - - - -	_____	27	32	20
Wheat- - - - -	_____	24	36	20
Barley - - - - -	_____	2	4	1
Crop yields--Corn, bu. per acre - - -	_____	29.3	28.9	27.0
Oats, bu. per acre - - -	_____	31.5	30.7	28.2
Wheat, bu. per acre- - -	_____	21.2	18.4	26.4
Value of feed fed to productive livestock- - - - -	_____	2581	3417	2185
Returns per \$100 of feed fed to productive livestock - - -	_____	129	143	105
Returns per \$100 invested in:				
All productive livestock- - -	_____	126	142	101
Cattle- - - - -	_____	69	84	58
Hogs- - - - -	_____	217	236	188
Poultry - - - - -	_____	159	148	129
Dairy sales per dairy cow - - - - -	_____	72	83	65
Investment in productive livestock per acre - -	_____	12.06	13.20	12.58
Receipts from productive livestock per acre - -	_____	15.24	18.70	12.65
Man labor cost per \$100 gross income- - - - -	_____	33	25	42
Man labor cost per acre - - - - -	_____	5.17	4.77	5.46
Value of feed fed to horses - - - - -	_____	244	244	214
Power and machinery cost per crop acre- - - - -	_____	4.47	3.38	5.91
Expenses per \$100 gross income- - - -	_____	89	72	121
Machinery cost per acre - - - - -	_____	1.55	1.04	2.21
Farm improvements cost per acre -	_____	1.12	.98	1.18
Farms with tractor- - - - -	_____	54%	59%	47%
Excess of sales over expenses - - - -	_____	2670	4312	1763
Decrease in inventory - - - - -	_____	1406	2036	1418

Meeting Low Prices For Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

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Annual Farm Business Report

Hancock County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seem evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Hancock County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 30 farmers in Hancock County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.1 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$420 a farm, there remains a rate of 1.1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$526 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$147 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$202 an acre. The land and improvements exclusive of the residence averaged \$168 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For *O. L. Welch, farm adviser in Hancock County, cooperated in supervising and collecting the records on which this report is based.

1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm account project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups, these indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$849 while the surplus of sales over expenses was \$2510. For the more successful farms, the corresponding figures were \$390 reduction in inventory and \$3146 surplus of income over expense. For the less successful farms the figures were \$1418 reduction in inventory and \$2147 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater writing off of inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay, since the small grains generally yielded well in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$1919 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 3 acres difference in average size between the most profitable 10 farms and the least profitable 10 farms, the average size of all farms being 208 acres. The difference in percentage of tillable land was only 7 percent. Difference in acreage was not an important factor in the difference in income.

As a rule, one of the important advantages of the more successful farms is that of larger crops yields. In this case, however, the yields were practically the same for the two groups. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 5 acres more corn, 4 acres more soybeans, and 18 acres more oats. The average acreage of wheat and barley was very small for both groups.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$149 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$106. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$43 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$2200 worth of feed which was fed on the average farm in this area this advantage of \$43 a hundred amounts to a total of more than \$950 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs, separately. As to the amount of livestock, the two groups show little difference. The more profitable do show \$1.25 an acre more investment in livestock exclusive of horses and mules.

The labor efficiency was higher on farms of the more successful group. They had 27 cents an acre more labor cost but due to their larger incomes from only slightly more labor their labor cost per \$100 income was only \$28 as compared with \$45 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$17 for each \$100 of income.

The combined cost of feed from horses, horse depreciations, and power and machinery per crop acre was \$1.21 higher on the less successful farms. This is in spite of the fact that yields were slightly lower on farms of the latter group and they had a little less livestock. There is no evidence of any return for the extra power and equipment cost.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$21.42 and an expense of \$11.94 an acre as compared with \$12.56 income and \$12.55 expense on the least profitable 10 farms. This resulted in average net incomes of \$9.48 and one cent an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Hancock County for the period 1926-1930 inclusive. The rate earned was lowest for 1927. For most areas of the state, 1930 farm earnings were

lower than those of 1927. It is interesting to note that the average operating cost per acre has been lower the past 3 years. There is considerable variation between individual farms in the operating cost per acre. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$965. Three years of the five there has been nothing left for wages after an interest charge on capital has been deducted.

Comparative Earnings and Investment Figures on Farms in
Hancock County for 1926-1930

Items	1926 ¹	1927	1928	1929	1930
Numbers of farms - - - - -	32	31	33	32	30
Average size of farms, acres - - -	236	218	223	229	208
Average rate earned, to pay for management, risk and capital- - -	3.4%	1.8%	5.6%	5.2%	2.1%
Average labor and management wage	\$-122	\$-652	\$965	\$805	\$-526
Average value of land per acre - -	137	143	143	140	147
Average investment per acre- - - -	190	195	192	192	202
Investment in livestock per farm -	3859	3579	3258	3037	3136
Investment in cattle per farm- - -	1528	1147	1342	1436	1484
Investment in hogs per farm- - - -	1483	1560	1080	805	1004
Investment in poultry per farm - -	149	157	144	130	151
Gross income per acre- - - - -	19.91	16.55	22.30	21.42	15.95
Operating cost per acre- - - - -	13.42	12.97	11.46	11.43	11.69
Net increase from crops per farm -	000	000	1440	1079	419
Miscellaneous income per farm- - -	112	44	49	71	40
Livestock income per farm- - - - -	4599	3558	3485	3746	2851
Gross income per farm- - - - -	4711	3602	4974	4896	3310
Cattle income per farm - - - - -	958	750	697	728	233
Dairy sales per farm - - - - -	210	269	486	547	466
Hog income per farm- - - - -	3078	2176	2009	2128	1960
Poultry income per farm- - - - -	261	277	236	293	190
Average yield corn in bu.- - - - -	39	30	48	45	34
Average yield oats in bu.- - - - -	32	23	50	38	39

¹Records from Adams County included for 1926.

Hancock County, 1930

Item	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
Capital Investments--Land - - - - -		30,500	35,098	27,696
Farm Improvements - - - - -		4,382	3,127	4,890
Horses- - - - -		476	479	429
Cattle- - - - -		1,484	1,310	1,567
Hogs- - - - -		1,004	1,035	1,069
Sheep - - - - -		21	2	10
Bees- - - - -		---	---	---
Poultry - - - - -		151	155	180
Livestock--Total - - - - -		<u>3,136</u>	<u>2,981</u>	<u>3,255</u>
Machinery and equipment- - - - -		1,593	1,578	1,610
Feed, grain and supplies - - - - -		2,345	2,380	2,006
Total Investment- - - - -	\$ _____	\$ <u>41,956</u>	\$ <u>45,164</u>	\$ <u>39,457</u>
<u>Receipts--Net Increases-</u> - - - - -				
Horses - - - - -		---	---	10
Cattle - - - - -		233	326	171
Hogs - - - - -		1,960	2,345	1,496
Sheep- - - - -		2	---	2
Bees - - - - -		---	---	---
Poultry- - - - -		62	60	79
Egg sales- - - - -		128	112	184
Dairy sales- - - - -		466	458	272
Livestock--Total - - - - -		<u>2,851</u>	<u>3,301</u>	<u>2,214</u>
Feed, grain and supplies		419	980	334
Labor off farm - - - - -		34	55	27
Miscellaneous receipts - - - - -		6	6	9
Total Receipts--Net Increases - - -	\$ _____	\$ <u>3,310</u>	\$ <u>4,342</u>	\$ <u>2,584</u>
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		239	169	296
Horses- - - - -		9	28	---
Miscellaneous livestock decreases		---	---	---
Machinery and equipment - - - - -		426	415	488
Feed, grain and supplies- - - - -		---	---	---
Livestock expense - - - - -		39	34	45
Crop expense- - - - -		207	189	216
Hired labor - - - - -		388	394	457
Taxes - - - - -		311	326	321
Miscellaneous expenses- - - - -		30	31	32
Total Expenses--Net Decreases - - -	\$ _____	\$ <u>1,649</u>	\$ <u>1,586</u>	\$ <u>1,855</u>
Receipts Less Expenses- - - - -	\$ _____	\$ <u>1,661</u>	\$ <u>2,756</u>	\$ <u>729</u>
Total unpaid labor- - - - -		778	835	727
Operator's labor- - - - -		689	720	662
Family labor- - - - -		89	115	65
Net income from investment and management - - -		883	1,921	2
Rate earned on investment - - - - -		<u>2.10%</u>	<u>4.25%</u>	<u>.005%</u>
Return to capital and operator's labor and management		1,572	2,641	664
5 percent of capital invested - -		2,098	2,258	1,973
Labor and management wage - - - - -	\$ _____	\$ <u>-526</u>	\$ <u>383</u>	\$ <u>-1,309</u>

Hancock County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	S. Beans	Cattle	Hogs					Poultry	Man labor	Operating expense	Per acre		Per farm
9.1	55	60	34	122	355	277	196	143	.50	21	38	37	7 000	350
8.1	52	57	32	112	335	257	186	133	1.00	25	45	34	6 500	330
7.1	49	54	30	102	315	237	176	123	1.50	25	48	31	6 000	310
6.1	46	51	28	92	295	217	166	113	2.00	27	53	28	5 500	290
5.1	43	48	26	82	275	197	156	103	2.50	29	58	25	5 000	270
4.1	40	45	24	72	255	177	146	93	3.00	31	63	22	4 500	250
3.1	37	42	22	62	235	157	136	83	3.50	33	68	19	4 000	230
2.1	34	39	20	52	215	137	126	73	4.00	35	73	16	3 500	210
1.1	31	36	18	42	195	117	115	63	4.50	37	78	13	3 000	190
.1	28	33	16	32	175	97	106	53	5.00	39	83	10	2 500	170
-.9	25	30	14	22	155	77	96	43	5.50	41	88	7	2 000	150
-1.9	22	27	12	12	135	57	86	33	6.00	43	93	4	1 500	130
-2.9	19	24	10	2	115	37	76	23	6.50	45	98	1	1 000	110
-3.9	16	21	8	--	95	17	66	13	7.00	47	103	--	500	90
-4.9	13	18	6	--	75	--	56	3	7.50	49	108	--	---	70

Hancock County, 1930

Factors helping to analyze the farm business	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -	_____	208	203	206
Percent of land area tillable - - -	_____	90%	94%	87%
Gross receipts per acre - - - - -	_____	15.95	21.42	12.56
Total expenses per acre - - - - -	_____	11.69	11.94	12.55
Net receipts per acre - - - - -	_____	4.26	9.48	.01
Value of land per acre- - - - -	_____	147	173	135
Total investment per acre - - - - -	_____	202	223	192
Acres in Corn - - - - -	_____	75	76	71
Oats - - - - -	_____	33	41	23
Wheat- - - - -	_____	10	8	17
Barley - - - - -	_____	3	2	5
Soybeans - - - - -	_____	19	22	18
Crop yields--Corn, bu. per acre- - -	_____	33.7	34.6	34.2
Oats, bu. per acre- - -	_____	39.1	39.3	39.9
Wheat, bu. per acre - -	_____	21.1	21.0	20.7
Soybeans, bu. per acre-	_____	19.7	21.9	20.5
Value of feed fed to productive livestock- - - - -	_____	2260	2220	2087
Returns per \$100 of feed fed to productive livestock - -	_____	126	149	106
Returns per \$100 invested in:				
All productive livestock- -	_____	119	134	98
Cattle- - - - -	_____	52	60	37
Hogs- - - - -	_____	215	232	169
Poultry - - - - -	_____	137	117	163
Dairy sales per dairy cow - - - - -	_____	73	66	63
Investment in productive livestock per acre -	_____	11.58	12.16	10.91
Receipts from productive livestock per acre -	_____	13.74	16.28	10.71
Man labor cost per \$100 gross income- - - - -	_____	35	28	45
Man labor cost per acre - - - - -	_____	5.51	5.92	5.65
Value of feed fed to horses - - - -	_____	230	157	260
Power and machinery cost per crop acre- - - - -	_____	4.13	3.55	4.76
Expenses per \$100 gross income- - -	_____	73	56	100
Machinery cost per acre - - - - -	_____	2.05	2.05	2.37
Farm improvements cost per acre	_____	1.15	.83	1.44
Farms with tractor- - - - -	_____	73%	90%	70%
Excess of sales over expenses - - -	_____	2510	3146	2147
Decrease in inventory - - - - -	_____	849	390	1418

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Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

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In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

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Annual Farm Business Report

Henderson County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

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The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Henderson County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 62 farmers in Henderson County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.1 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$342 a farm, there remains a rate of 1.1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$271 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$109 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$153 an acre. The land and improvements exclusive of the residence averaged \$124 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.3 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through

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In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$565 while the surplus of sales over expenses was \$2143. For the more successful farms, the corresponding figures were \$87 reduction in inventory and \$2807 surplus of income over expense. For the less successful farms the figures were \$892 reduction in inventory and \$1271 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops, however, is stored, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2369 a farm.

The most profitable 20 farms averaged 95 acres larger than the least profitable 20 farms. This gave the first group some advantage in securing lower costs per acre for labor, power and equipment. They also had some advantage in a larger gross business. It is significant that the reports for Henderson County for each of the past four years have shown the more successful farms larger than the less successful ones; the average difference in acreage for the four years between the most profitable and least profitable farms is 77 acres. Reports for other similar areas have often shown no advantage to the larger farms, however. It is doubtful whether larger acreage is a very important factor in the difference in earnings. The chief advantage in larger acreage is the opportunity to secure lower costs per acre, however, and in this case operating costs were materially lower on the more profitable farms.

One of the advantages of the more successful farms was that of larger crop yields. They produced 3 bushels more corn, $3\frac{1}{2}$ bushels more oats, and 3 bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 45 acres more corn, 9 acres more wheat, and 17 acres more oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$154 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$102. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$52 from each \$100 worth of feed on the most profitable 20 farms was an important factor in their larger net incomes. On nearly \$2000 worth of feed which was fed on the average farm in this area this advantage of \$52 a hundred amounts to a total of more than \$1000 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. There was little difference between the two groups in the average sales per dairy cow but dairying is a minor enterprise on the average farm in this county. The less profitable farms had nearly one-third more livestock investment per acre but the two groups had nearly the same total livestock investment per farm.

The labor efficiency was much higher on farms of the more successful group. They had \$2.15 an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$27 as compared with \$52 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 20 farms had an advantage of \$25 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.64 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group. Part of the difference is explained in the larger size and less livestock per acre reported by the more profitable farms.

The situation is summed up in the gross receipts and expenses per acre. The most profitable 20 farms had an average gross income of \$15.85 and an expense of \$8.92 an acre as compared with \$12.42 income and \$15.11 expense on the least profitable 20 farms. This resulted in an average net income of \$6.93 and a net loss of

\$2.69 an acre respectively, for the two groups. An important item in the larger expense of the less successful farms was that of purchased feed. Farms of this group had a net expense for feed amounting to \$437 a farm while the more successful farms had an increase from feed instead of a net expense.

The following table presents some comparative investment and earnings data on accounting farms in Henderson county for the period 1927-1930, inclusive. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$25 an acre. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In four years it has varied from nothing to \$1592.

Comparative Earnings and Investment Figures on Farms in Henderson County for 1927-1930

Items	1927	1928	1929	1930
Numbers of farms - - - - -	30	30	30	62
Average size of farms, acres - - - -	245	250	239	224
Average rate earned, to pay for management, risk and capital- - -	4.1%	6.9%	5.7%	2.1%
Average labor and management wage- -	\$239	\$1592	\$1042	\$-271
Average value of land per acre - - -	134	132	135	109
Average investment per acre- - - - -	187	179	184	153
Investment in livestock per farm - -	4491	3718	3570	2898
Investment in cattle per farm- - - -	2068	1693	1662	1123
Investment in hogs per farm- - - - -	1532	1189	1118	1012
Investment in poultry per farm - - -	105	128	139	126
Gross income per acre- - - - -	19.51	23.34	21.96	13.47
Operating cost per acre- - - - -	11.85	10.92	11.43	10.21
Net increase from crops per farm - -	822	921	1088	387
Miscellaneous income per farm- - - -	33	50	61	68
Livestock income per farm- - - - -	3935	4854	4100	2566
Gross income per farm- - - - -	4790	5825	5249	3021
Cattle income per farm - - - - -	1655	1685	794	270
Dairy sales per farm - - - - -	214	313	330	209
Hog income per farm- - - - -	1828	2537	2691	1940
Poultry income per farm- - - - -	155	220	214	123
Average yield corn in bu.- - - - -	38	51	45	37
Average yield oats in bu.- - - - -	33	48	40	35

Henderson County, 1930

Item	Your farm	Average of 62 farms	20 most profitable farms	20 least profitable farms
<u>Capital Investments--Land</u> - - - - -		24,541	27,327	20,496
Farm Improvements - - - - -		3,390	3,762	3,600
Horses- - - - -		516	546	471
Cattle- - - - -		1,123	1,225	1,119
Hogs- - - - -		1,012	1,133	956
Sheep - - - - -		121	53	248
Bees- - - - -		---	---	---
Poultry - - - - -		126	89	149
Livestock--Total - - - - -		<u>2,898</u>	<u>3,046</u>	<u>2,943</u>
Machinery and equipment- - - - -		1,371	1,559	1,282
Feed, grain and supplies - - - - -		2,032	2,105	1,735
Total Investment- - - - -	\$	<u>\$34,232</u>	<u>\$37,799</u>	<u>\$30,056</u>
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		270	396	177
Hogs- - - - -		1,940	2,688	1,534
Sheep - - - - -		24	10	49
Bees- - - - -		---	---	---
Poultry - - - - -		39	42	33
Egg sales - - - - -		84	59	110
Dairy sales - - - - -		209	191	238
Livestock--Total - - - - -		<u>2,566</u>	<u>3,386</u>	<u>2,141</u>
Feed, grain and supplies - - - - -		387	373	---
Labor off farm - - - - -		56	65	51
Miscellaneous receipts - - - - -		12	2	17
Total Receipts--Net Increases - - - - -	\$	<u>\$ 3,021</u>	<u>\$ 4,326</u>	<u>\$ 2,209</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		182	173	232
Horses- - - - -		19	42	4
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		361	370	383
Feed, grain and supplies- - - - -		---	---	437
Livestock expense - - - - -		51	62	42
Crop expense- - - - -		157	187	129
Hired labor - - - - -		321	390	316
Taxes - - - - -		321	349	258
Miscellaneous expenses- - - - -		31	33	29
Total Expenses--Net Decreases - - - - -	\$	<u>\$ 1,443</u>	<u>\$ 1,606</u>	<u>\$ 1,830</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 1,578</u>	<u>\$ 2,720</u>	<u>\$ 379</u>
Total unpaid labor- - - - -		847	829	857
Operator's labor- - - - -		710	696	715
Family labor - - - - -		137	133	142
Net income from investment and management - - - - -		731	1,691	-478
Rate earned on investment - - - - -	%	<u>2.14%</u>	<u>5.00%</u>	<u>-1.59%</u>
Return to capital and operator's labor and management - - - - -		1,441	2,587	237
5 percent of capital invested - - - - -		1,712	1,890	1,503
Labor and management wage - - - - -	\$	<u>\$ -271</u>	<u>\$ 697</u>	<u>\$-1,266</u>

Henderson County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm	
9.14	58	56	35	115	333	249	201	74	17	.25	17	41	34	6 500	365
8.14	55	53	33	105	313	229	191	69	16	.75	20	46	31	6 000	345
7.14	52	50	31	95	293	209	181	64	15	1.25	23	51	23	5 500	325
6.14	49	47	29	85	273	189	171	59	14	1.75	26	56	25	5 000	305
5.14	46	44	27	75	253	169	161	54	13	2.25	29	61	22	4 500	285
4.14	43	41	25	65	233	149	151	49	12	2.75	32	66	19	4 000	265
3.14	40	38	23	55	213	129	141	44	11	3.25	35	71	16	3 500	245
2.14	37	35	21	45	193	109	131	39	10	3.75	38	76	13	3 000	225
1.14	34	32	19	35	173	89	121	34	9	4.25	41	81	10	2 500	205
.14	31	29	17	25	153	69	111	29	8	4.75	44	86	7	2 000	185
-.86	28	26	15	15	133	49	101	24	7	5.25	47	91	4	1 500	165
-1.86	25	23	13	5	113	29	91	19	6	5.75	50	96	1	1 000	145
-2.86	22	20	11	---	93	9	81	14	5	6.25	53	101	---	500	125
-3.86	19	17	9	---	73	---	71	9	4	6.75	56	106	---	---	105
-4.86	16	14	7	---	53	---	61	4	3	7.25	59	111	---	---	85

Henderson County, 1930

Factors helping to analyze the farm business	Your farm	Average of 62 farms	20 most profitable farms	20 least profitable farms
Size of farm--acres - - - - -		224	273	178
Percent of land area tillable - - - -		80.2	79.2	76.2
Gross receipts per acre - - - - -		13.47	15.85	12.42
Total expenses per acre - - - - -		10.21	8.92	15.11
Net receipts per acre - - - - -		3.26	6.93	-2.69
Value of land per acre- - - - -		109	100	115
Total investment per acre - - - - -		153	138	169
Acres in Corn - - - - -		85	105	60
Oats - - - - -		34	41	24
Wheat- - - - -		13	18	9
Barley - - - - -		3	1	6
Crop yields--Corn, bu. per acre - - -		37.3	39.6	36.6
Oats, bu. per acre - - -		34.7	34.2	30.8
Wheat, bu. per acre- - -		21.0	20.7	17.6
Barley, bu. per acre - -		13.2	18.4	11.2
Value of feed fed to productive livestock- - - - -		1954	2201	2099
Returns per \$100 of feed fed to productive livestock - - -		131	154	102
Returns per \$100 invested in:				
All productive livestock- - -		112	134	94
Cattle- - - - -		45	53	41
Hogs- - - - -		193	210	165
Poultry - - - - -		109	116	112
Dairy sales per dairy cow - - - - -		39	39	38
Investment in productive livestock per acre - -		10.19	9.27	12.88
Receipts from productive livestock per acre - -		11.45	12.40	12.04
Man labor cost per \$100 gross income- - - - -		38	27	52
Man labor cost per acre - - - - -		5.06	4.31	6.46
Value of feed fed to horses - - - - -		226	237	221
Power and machinery cost per crop acre- - - - -		3.76	3.36	5.00
Expenses per \$100 gross income- - - -		76	56	122
Machinery cost per acre - - - - -		1.61	1.36	2.15
Farm improvements cost per acre -		.81	.63	1.30
Farms with tractor- - - - -		53%	65%	55%
Excess of sales over expenses - - - -		2143	2807	1271
Decrease in inventory - - - - -		565	87	892

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

McDonough County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. E. Wills, and H. C. M. Case*

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The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in McDonough County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 36 farmers in McDonough county who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.2 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$409 a farm, there remains a rate of 1.2 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$431 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$133 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$193 an acre. The land and improvements exclusive of the residence averaged \$154 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but

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On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2625 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 6 acres difference in average size between the most profitable 12 farms and the least profitable 12 farms, the average size of all farms being 212 acres. The difference in percentage of tillable land was 13 percent. Difference in acreage was not an important factor in the difference in income. In fact, reports of this kind have often shown the more successful farms somewhat smaller. It is probable that the extra 33 acres of tillable land which the more successful farms averaged did give some advantage in lower costs per acre for labor and equipment.

As a rule, one of the most important advantages of the more successful farms was that of larger crop yields. In this case, however, there was much less than the usual difference in yields. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 22 acres more corn, 9 acres more wheat, and 2 acres more oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$142 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$110. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$32 from each \$100 worth of feed on the most profitable 12 farms was an important factor in their larger net incomes. On over \$3400 worth of feed which was fed on the average farm in this area this advantage of \$32 a hundred amounts to a total of more than \$1000 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Farms of the less successful group show higher dairy sales per dairy cow than do those of the more successful group, but dairying is a minor enterprise on these farms. The less successful farms show about 24 percent larger investment per acre in livestock but since they realized no margin of profit from livestock the extra livestock was a handicap rather than an advantage.

The labor efficiency was higher on farms of the more successful group. They had 55 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was \$23 as compared with \$32 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 12 farms had an advantage of \$9 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.44 higher on the less successful farms. Some of the higher cost for power and equipment is explained in the larger amount of livestock and smaller acreage of crops on these less profitable farms. They secured no corresponding return for the extra cost, however.

The situation is summed up in the gross receipts and expense per acre. The most profitable 12 farms had an average gross income of \$24.80 and an expense of \$14.53 an acre as compared with \$19.63 income and \$21.42 expense on the least profitable 12 farms. This resulted in an average net income of \$10.27 and a net loss of \$1.74 an acre respectively for the two groups. The relatively large operating expense on the less profitable farms is in part due to large net feed purchases on these farms.

The following table presents some comparative investment and earnings data on accounting farms in McDonough County for the period 1926-1930 inclusive. The rate earned was lowest for 1927 and next lowest for 1930. Nearly all of the other accounting areas of the state show a lower average rate earned for 1930 than for 1927. Land values have been reduced about \$40 an acre in the 5 year period and were lowest in 1930. The livestock income per farm was lowest in 1927. This was largely due to the low price of hogs and unfavorable corn hog ratio prevailing in 1927. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$1369. The higher operating expense per acre shown for 1930 is due to the unusually large net feed purchases as compared with other years.

Comparative Earnings and Investment Figures on Farms in McDonough
County for 1926-1930

Items	1926	1927	1928	1929	1930
Numbers of farms - - - - -	26	28	31	32	36
Average size of farms, acres - - - - -	180	181	205	207	212
Average rate earned, to pay for management, risk and capital- - - - -	3.8%	1.6%	5.0%	6.5%	2.2%
Average labor and management wage- - - - -	\$212	\$642	\$739	\$1369	\$431
Average value of land per acre - - - - -	176	163	157	149	133
Average investment per acre- - - - -	236	220	210	207	193
Investment in livestock per farm - - - - -	3118	3247	2947	3417	3574
Investment in cattle per farm- - - - -	957	939	889	1236	1271
Investment in hogs per farm- - - - -	1287	1535	1318	1501	1570
Investment in poultry per farm - - - - -	155	180	183	165	158
Gross income per acre- - - - -	23.24	17.48	24.05	26.73	20.31
Operating cost per acre- - - - -	14.23	13.91	13.48	13.24	16.10
Net increase from crops per farm - - - - -	495	148	808	385	---
Miscellaneous income per farm- - - - -	61	54	81	49	44
Livestock income per farm- - - - -	3641	2968	4042	5100	4259
Gross income per farm- - - - -	4197	3170	4931	5534	4303
Cattle income per farm - - - - -	488	468	523	778	489
Dairy sales per farm - - - - -	291	325	353	373	308
Hog income per farm- - - - -	2493	1795	2702	3478	3214
Poultry income per farm- - - - -	325	346	434	433	241
Average yield corn in bu.- - - - -	49	37	50	49	35
Average yield oats in bu.- - - - -	37	27	51	50	40

McDonough County - 1930

Item	Your farm	Average of 36 farms	12 most profitable farms	12 least profitable farms
Capital Investments--Land - - - - -		28 190	29 570	26 443
Farm Improvements - - - - -		4 472	4 594	4 931
Horses- - - - -		491	475	496
Cattle- - - - -		1 271	949	1 949
Hogs- - - - -		1 570	1 757	1 623
Sheep - - - - -		84	107	105
Bees- - - - -		--	--	--
Poultry - - - - -		158	166	166
Livestock--Total - - - - -		3 574	3 454	4 339
Machinery and equipment- - - - -		1 696	1 720	1 806
Feed, grain and supplies - - - - -		2 922	3 376	2 498
Total Investment- - - - -	\$	\$ 40 854	\$ 42 714	\$ 40 017
<u>Receipts--Net Increases- - - - -</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		489	409	864
Hogs- - - - -		3 214	4 325	2 740
Sheep - - - - -		7	15	1
Bees- - - - -		--	--	--
Poultry - - - - -		93	125	69
Egg sales - - - - -		148	189	154
Dairy sales - - - - -		308	326	330
Livestock--Total - - - - -		4 259	5 389	4 158
Feed, grain and supplies - - - - -		---	---	---
Labor off farm - - - - -		41	51	41
Miscellaneous receipts - - - - -		3	2	1
Total Receipts--Net Increases - - -	\$	\$ 4 303	\$ 5 442	\$ 4 200
<u>Expenses--Net Decreases - - - - -</u>				
Farm Improvements - - - - -		303	237	356
Horses- - - - -		26	16	47
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		416	443	412
Feed, grain and supplies- - - - -		731	502	1 739
Livestock expense - - - - -		68	73	53
Crop expense- - - - -		216	250	181
Hired labor - - - - -		370	400	398
Taxes - - - - -		345	297	384
Miscellaneous expenses- - - - -		27	27	24
Total Expenses--Net Decreases - - -	\$	\$ 2 502	\$ 2 295	\$ 3 594
Receipts Less Expenses- - - - -	\$	\$ 1 801	\$ 3 147	\$ 606
Total unpaid labor- - - - -		909	893	977
Operator's labor- - - - -		720	720	720
Family labor- - - - -		189	173	257
Net income from investment and management - - -		892	2 254	- 371
Rate earned on investment - - - - -	%	2.18 %	5.28 %	-.93 %
Return to capital and operator's labor and management		1 612	2 974	349
5 percent of capital invested - -		2 043	2 136	2 001
Labor and management wage - - - - -	\$	\$ - 431	\$ 838	\$- 1 652

McDonough County - 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in		I. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm		
	Corn	Oats	Wheat	Cattle					Hogs	Poultry	Man labor	Operating expense		Per acre	Per farm
9.18	56	61	38	135	368	310	194	130	20	.90	15	45	41	8 000	350
8.18	53	58	36	125	348	290	184	120	19	1.40	17	50	38	7 500	370
7.18	50	55	34	115	328	270	174	110	18	1.90	19	55	35	7 000	310
6.18	47	52	32	105	308	250	164	100	17	2.40	21	60	32	6 500	290
5.18	44	49	30	95	288	230	154	90	16	2.90	23	65	29	6 000	270
4.18	41	46	28	85	268	210	144	80	15	3.40	25	70	26	5 500	250
3.18	38	43	26	75	248	190	134	70	14	3.90	27	75	23	5 000	230
2.18	35	40	24	65	228	170	124	60	13	4.40	29	80	20	4 500	210
1.18	32	37	22	55	208	150	114	50	12	4.90	31	85	17	4 000	190
.18	29	34	20	45	188	130	104	40	11	5.40	33	90	14	3 500	170
-.82	26	31	18	35	168	110	94	30	10	5.90	35	95	11	3 000	150
-1.82	23	28	16	25	148	90	84	20	9	6.40	37	100	8	2 500	130
-2.82	20	25	14	15	128	70	74	10	8	6.90	39	105	5	2 000	110
-3.82	17	22	12	5	108	50	64	---	7	7.40	41	110	2	1 500	90
-4.82	14	19	10	---	88	30	54	---	6	7.90	43	115	---	1 000	70

McDonough County - 1930

Factors helping to analyze the farm business	Your farm	Average of 36 farms	12 most profitable farms	12 least profitable farms
Size of farm--acres - - - - -		212	219	213
Percent of land area tillable - - -		86%	92%	79%
Gross receipts per acre - - - - -		20.31	24.80	19.68
Total expenses per acre - - - - -		16.10	14.53	21.42
Net receipts per acre - - - - -		4.21	10.27	-1.74
Value of land per acre- - - - -		133	135	124
Total investment per acre - - - - -		193	195	188
Acres in Corn - - - - -		79	90	68
Oats - - - - -		30	29	27
Wheat- - - - -		19	22	13
Barley - - - - -		3	2	3
Soybeans - - - - -		6	14	4
Crop yields--Corn, bu. per acre- - -		35.1	37.0	34.5
Oats, bu. per acre- - -		40.1	40.5	41.4
Wheat, bu. per acre- - -		24.5	29.1	21.1
Value of feed fed to productive livestock- - - - -		3424	3793	3770
Returns per \$100 of feed fed to productive livestock - -		124	142	110
Returns per \$100 invested in:				
All productive livestock- -		149	187	118
Cattle- - - - -		65	76	61
Hogs- - - - -		223	257	205
Poultry - - - - -		170	201	151
Dairy sales per dairy cow - - - - -		60	48	81
Investment in productive livestock per acre -		13.46	13.17	16.45
Receipts from productive livestock per acre -		20.11	24.56	19.48
Man labor cost per \$100 gross income- - - - -		29	23	32
Man labor cost per acre - - - - -		5.92	5.77	6.32
Value of feed fed to horses - - - -		251	223	250
Power and machinery cost per crop acre- - - - -		4.36	3.80	5.24
Expenses per \$100 gross income- - -		79	59	109
Machinery cost per acre - - - -		1.96	2.03	1.93
Farm improvements cost per acre		1.43	1.31	1.67
Farms with tractor- - - - -		78%	92%	75%
Excess of sales over expenses - - -		2725	3399	1939
Decrease in inventory - - - - -		924	252	1333

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Mercer County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, W. A. Gilbert, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921 one hundred farms in Woodford County which is typical of central Illinois had an average net loss of practically one percent of the total farm investment. In 1920 thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Mercer County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 40 farmers in this county who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.1 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$525 a farm, there remains a rate of 1.1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group lacked \$774 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$138 an acre not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$202 an acre. The land and improvements exclusive of the residence averaged \$160 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was

*J. E. Harris, farm adviser in Mercer County, cooperated in supervising and collecting the records on which this report is based.

11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent and for 1930, 1900 companies show 5.7 percent. Unlike farms, those companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm and for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$767 while the surplus of sales over expenses was \$2794. For the more successful farms, the corresponding figures were \$88 increase in inventory and \$3443 surplus of income over expense. For the less successful farms the figures were \$1778 decrease in inventory and \$2259 surplus of sales over expenses. It is evident that the farms in the low earnings group do show a greater writing off of inventories but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. The reason for the increase in inventory on the 13 most profitable farms is found in the fact that on these farms there was an increase in numbers of cattle and hogs on hand at the end of the year as compared with the beginning of the year. The increase consisted of 5 head of cattle and 32 head of hogs per farm. The least profitable farms had an average decrease of 6 head of cattle and an increase of only 14 head of hogs per farm.

On account of the difficulty in getting records of produce used by the farm family and by hired labor these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$3108 a farm.

The most profitable 13 farms averaged 72 acres larger than the 13 least profitable farms. This undoubtedly gave the first group an opportunity to use labor,

power and equipment more efficiently. It is doubtful, however, whether larger size was a very important factor in the greater success of these farms since the report for this area in 1929 showed the less successful farms larger than the more successful farms. The biggest difference in expense between the two groups was not in the amount spent for labor, power, and equipment but in the amount spent for feed. The least profitable 13 farms had an average net decrease in their feed accounts of over \$2500. Of this amount \$2352 was actually paid out in cash. It is true of course that the larger acreage contained in the more successful farms gave them larger supplies of feed but if they fed as much feed per acre they would still have the same proportionate shortage as the smaller farms.

One of the advantages of the more successful farms was that of larger crop yields. They produced 3 bushels more corn and 2 bushels more oats per acre. These farms had such small acreages of wheat and barley that differences in yields of these crops were insignificant. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 39 acres more corn, and 4 acres more oats.

On the more profitable farms the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$213 of livestock income from each \$100 worth of feed other than pasture while the less successful farmers had a corresponding income of only \$100. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms but the additional \$113 from each \$100 worth of feed on the most profitable 13 farms was an important factor in their larger net incomes. On \$3900 worth of feed which was fed on the average farm in this area this advantage of \$113 a hundred amounts to a total of more than \$4000 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$61 dairy sales per dairy cow as compared with \$56 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference. The more profitable farms had about \$3 an acre less investment in livestock. This was one factor in reducing their feed bills.

The labor efficiency was much higher on farms of the more successful group. They had \$1.38 an acre less labor cost. Due to their larger income from less labor, their labor cost per \$100 income was \$24 as compared with \$28 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 13 farms had an advantage of \$4 for each \$100 of income.

The combined cost of feed for horses, horse depreciations and power and machinery per crop acre was 86 cents higher on the less successful farms. Such advantage in labor, power and equipment costs as the more profitable farms show seems to be chiefly due to their larger average size.

The situation is summed up in the gross receipts and expense per acre. The most profitable 13 farms had an average gross income of \$21.38 and an expense of \$11.65 an acre as compared with \$23.66 income and \$25.65 expense on the least profitable 13 farms. This resulted in an average net income of \$9.73 and a net loss of \$1.99 an acre respectively. This is unusual in that the big difference is in expense, chiefly feed cost, whereas the biggest difference shown in reports of this kind is usually in

income.

The following table presents some comparative investment and earnings data on accounting farms in Mercer county for the period 1928-1930. The rate earned was lowest for 1930. The wide variation in the amount realized by these farm operators for their labor and time is shown in the labor and management wage from year to year. In three years it has varied from nothing to \$1506. There was a reduction in income from every enterprise for 1930 largely because of the general slump in prices. This area suffered little from the drought if we accept the evidence of average yields and make comparisons with previous years.

Comparative Earnings and Investment Figures on Farms in Mercer County
for 1928-1930

Items	1928 ¹	1929 ²	1930
Numbers of farms - - - - -	30	30	40
Average size of farms, acres - - - - -	208	248	260
Average rate earned, to pay for management, risk and capital- - - - -	5.9%	6.5%	2.1%
Average labor and management wage- - - - -	\$1151	\$1506	\$774
Average value of land per acre - - - - -	164	143	138
Average investment per acre- - - - -	232	208	202
Investment in livestock per farm - - - - -	3953	5046	5416
Investment in cattle per farm- - - - -	1496	2127	2640
Investment in hogs per farm- - - - -	1587	1940	1860
Investment in poultry per farm - - - - -	164	171	149
Gross income per acre- - - - -	28.10	27.36	20.68
Operating cost per acre- - - - -	14.41	13.81	16.34
Net increase from crops per farm - - - - -	723	000	000
Miscellaneous income per farm- - - - -	70	39	35
Livestock income per farm- - - - -	5053	6747	5339
Gross income per farm- - - - -	5846	6786	5374
Cattle income per farm - - - - -	1149	1658	1156
Dairy sales per farm - - - - -	574	489	333
Hog income per farm- - - - -	2894	4117	3578
Poultry income per farm- - - - -	316	396	238
Average yield corn in bu.- - - - -	56	47	49
Average yield oats in bu.- - - - -	43	42	41

¹A few records from Knox and Warren Counties included for 1928.

²A few records from Warren County included for 1929.

Mercer County-1930

Item	Your farm	Average of 40 farms	13 most profitable farms	13 least profitable farms
Capital Investments--Land - - - - -		35,801	38,676	27,162
Farm Improvements - - - - -		5,840	5,001	4,542
Horses - - - - -		523	466	503
Cattle - - - - -		2,640	3,009	2,718
Hogs - - - - -		1,860	1,741	2,168
Sheep- - - - -		244	268	161
Bees - - - - -		---	---	---
Poultry- - - - -		149	99	154
Livestock--Total - - - - -		5,416	5,583	5,704
Machinery and equipment- - - - -		1,974	2,058	1,553
Feed, grain and supplies - - - - -		3,442	3,906	3,036
Total Investment- - - - -	\$	\$52,473	\$55,224	\$41,997
<u>Receipts--Net. Increases-</u> - - - - -				
Horses - - - - -		---	---	---
Cattle - - - - -		1,156	1,290	954
Hogs - - - - -		3,578	4,009	3,346
Sheep- - - - -		34	42	2
Bees - - - - -		---	---	---
Poultry- - - - -		112	49	112
Egg sales- - - - -		126	115	124
Dairy sales- - - - -		333	394	269
Livestock--Total - - - - -		5,339	5,899	4,807
Feed, grain and supplies - - - - -		---	---	---
Labor off farm - - - - -		27	27	25
Miscellaneous receipts - - - - -		8	2	19
Total Receipts--Net Increases - - - - -	\$	\$ 5,374	\$ 5,928	\$ 4,851
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		329	219	300
Horses- - - - -		43	37	49
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		588	619	427
Feed, grain and supplies- - - - -		991	1	2,528
Livestock expense - - - - -		97	117	85
Crop expense- - - - -		188	223	135
Hired labor - - - - -		635	632	473
Taxes - - - - -		443	517	346
Miscellaneous expenses- - - - -		33	32	27
Total Expenses--Net Decreases - - - - -	\$	\$ 3,347	\$ 2,397	\$ 4,370
Receipts Less Expenses- - - - -	\$	\$ 2,027	\$ 3,531	\$ 481
Total unpaid labor- - - - -		898	832	890
Operator's labor- - - - -		720	720	720
Family labor- - - - -		178	112	170
Net income from investment and management - - - - -		1,129	2,699	409
Rate earned on investment - - - - -	%	2.15 %	4.89 %	-.97 %
Return to capital and operator's labor and management - - - - -		1,849	3,419	311
5 percent of capital invested - - - - -		2,623	2,761	2,099
Labor and management wage - - - - -	\$	\$ -774	\$ 658	\$ -1,788

Mercer County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farms in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm	
9.1	70	62	38	134	327	313	207	130	25	1.94	12	44	42	12 500	400
8.1	67	59	36	124	307	293	197	120	24	2.44	14	49	39	11 500	380
7.1	64	56	34	114	287	273	187	110	23	2.94	16	54	36	10 500	360
6.1	61	53	32	104	267	253	177	100	22	3.44	18	59	33	9 500	340
5.1	58	50	30	94	247	233	167	90	21	3.94	20	64	30	8 500	320
4.1	55	47	28	84	227	213	157	80	20	4.44	22	69	27	7 500	300
3.1	52	44	26	74	207	193	147	70	19	4.94	24	74	24	6 500	280
2.1	49	41	24	64	187	173	137	60	18	5.44	26	79	21	5 500	260
1.1	46	38	22	54	167	153	127	50	17	5.94	28	84	18	4 500	240
0.1	43	35	20	44	147	133	117	40	16	6.44	30	89	15	3 500	220
-0.9	40	32	18	34	127	113	107	30	15	6.94	32	94	12	2 500	200
-1.9	37	29	16	24	107	93	97	20	14	7.44	34	99	9	1 500	180
-2.9	34	26	14	14	87	73	87	10	13	7.94	36	104	6	---	160
-3.9	31	23	12	---	67	53	77	---	12	8.44	38	109	---	---	140
-4.9	28	20	10	---	47	33	67	---	11	8.94	40	114	---	---	120

Mercer County, 1930

Factors helping to analyze the farm business	Your farm	Average of 40 farms	13 most profitable farms	13 least profitable farms
Size of farm--acres - - - - -	_____	250	277	205
Percent of land area tillable - - - - -	_____	81	81	77
Gross receipts per acre - - - - -	_____	20.68	21.38	23.66
Total expenses per acre - - - - -	_____	16.34	11.65	25.65
Net receipts per acre - - - - -	_____	4.34	9.73	-1.99
Value of land per acre- - - - -	_____	138	140	132
Total investment per acre - - - - -	_____	202	199	205
Acres in Corn - - - - -	_____	95	109	70
Oats - - - - -	_____	31	27	23
Wheat- - - - -	_____	4	6	2
Barley - - - - -	_____	8	12	4
Crop yields--Corn, bu. per acre- - - - -	_____	48.9	50.8	47.9
Oats, bu. per acre- - - - -	_____	41.1	44.1	42.2
Wheat, bu. per acre - - - - -	_____	23.8	24.1	23.0
Barley, bu. per acre- - - - -	_____	30.0	26.8	36.0
Value of feed fed to productive livestock- - - - -	_____	3900	2770	4783
Returns per \$100 of feed fed to productive livestock - - - - -	_____	137	213	100
Returns per \$100 invested in:				
All productive livestock- - - - -	_____	116	113	106
Cattle- - - - -	_____	64	57	55
Hogs- - - - -	_____	187	207	167
Poultry - - - - -	_____	173	172	163
Dairy sales per dairy cow - - - - -	_____	61	61	56
Investment in productive livestock per acre- - - - -	_____	17.69	18.78	22.03
Receipts from productive livestock per acre- - - - -	_____	20.55	21.23	23.45
Man labor cost per \$100 gross income - - - - -	_____	26	24	28
Man labor cost per acre - - - - -	_____	5.83	5.19	6.57
Value of feed fed to horses - - - - -	_____	295	254	270
Power and machinery cost per crop acre - - - - -	_____	5.44	5.05	5.91
Expenses per \$100 gross income- - - - -	_____	79	54	108
Machinery cost per acre- - - - -	_____	2.26	2.23	2.08
Farm improvements cost per acre- - - - -	_____	1.27	.79	1.46
Farms with tractor- - - - -	_____	72%	92%	38%
Excess of sales over expenses - - - - -	_____	2794	3443	2259
Decrease in inventory - - - - -	_____	767	Inc. 88	1778

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Champaign County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921 one hundred farms in Woodford County which is typical of central Illinois had an average net loss of practically one percent of the total farm investment. In 1920 thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Champaign County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 38 farmers in this county who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 1.4 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$561 a farm, there remains a rate of $\frac{4}{10}$ tenths of one percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group lacked \$1344 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$181 an acre not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$235 an acre. The land and improvements exclusive of the residence average \$202 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520

*C. C. Burns, farm adviser in Champaign County, cooperated in supervising and collecting the records on which this report is based.

companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming but since these other industries slumped from a much higher level they show the usual higher return as compared with farming. After the slump they show a higher rate than was shown for farming in 1928 and 1929, two years of relatively good earnings in both farming and industry as compared with the ten year average.

In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm as well as for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$1330 while the surplus of sales over expenses was \$2916. For the more successful farms, the corresponding figures were \$862 reduction in inventory and \$3783 surplus of income over expense. For the less successful farms the figures were \$1139 and \$1590 respectively. It is evident that the farms in the low earnings group do show a greater writing off of inventories but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930 the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms

included in this report is very significant, however, since the difference in net income amounts to \$2576 a farm.

The farms of the most successful group averaged 91 acres larger than those of the least successful group. The larger farms undoubtedly had some advantage in securing lower costs per acre for labor, power and equipment, but this was not the most important difference between the two groups. There was a larger difference in income per acre than in expense per acre and larger acreage gives no advantage in income per acre. It probably is significant that this is the sixth successive annual farm business report for this area showing a larger average acreage for the more profitable group of farms. The difference in acreage between the two groups has varied from about 10 acres to 91 acres. Similar reports for other areas of the state frequently have shown a smaller acreage for the more successful farms than for those which were less successful.

One of the important advantages of the more successful farms was that of larger crop yields. They produced 3 bushels more corn, 6 bushels more oats, and $3\frac{1}{2}$ bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 42 acres more corn, 3 acres more oats, 16 acres more wheat, and 29 acres more soybeans. More than three-fourths of the larger acreage contained in these farms was in corn and soybeans.

The more profitable farms had some advantage in higher efficiency in the livestock enterprises. The operators of these farms secured \$151 of livestock income from each \$100 worth of feed other than pasture while the less successful farmers had a corresponding income of only \$129. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little margin of profit from feeding instead of selling crops on the less successful farms but the additional \$22 from each \$100 worth of feed on the most profitable 13 farms was an important factor in their larger net incomes. On over \$950 worth of feed which was fed on the average farm in this area this advantage of \$22 a hundred amounts to a total of more than \$200 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs separately. Hogs constitute the largest livestock enterprise on these farms. As to the amount of livestock, the two groups show little difference. The 13 most profitable farms had \$5.32 an acre invested in livestock exclusive of horses and mules while the corresponding figure for the 13 least profitable farms was \$6.50. In either case, the livestock investment per acre is low as compared with western and northern Illinois.

The labor efficiency was much higher on farms of the more successful group. They had \$1.92 an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$22 as compared with \$50 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 13 farms had an advantage of \$28 for each \$100 of income.

The combined cost of feed for horses, horse depreciations and power and machinery per crop acre was \$2.09 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group. Nearly all of the higher operating cost per acre on the less profitable farms is represented in labor, power, and equipment costs.

The situation is summed up in the gross receipts and expense per acre. The most profitable 13 farms had an average gross income of \$18.21 and an expense of \$10.38 an acre as compared with \$12.25 income and \$14.40 expense on the least profitable 13 farms. This resulted in average net income of \$7.83 and a net loss of \$2.15 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Champaign County for the period 1926-1930. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$20 an acre in the five year period and were lowest in 1930 if we leave out 1928 and 1929 when records from other counties were included. It is interesting to note that the average operating cost per acre has changed very little and is relatively stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$1513.

Comparative Income and Investment Figures on Farms in
Champaign County for 1926 to 1929

Items	1926 ¹	1927 ¹	1928 ²	1929 ³	1930 ¹
Number of farms- - - - -	30	30	36	31	38
Average size of farms, acres - - -	225	229	215	232	239
Average rate earned, to pay for management, risk and capital - -	4.1%	4.4%	6.2%	6.5%	1.4%
Average labor and management wage-	\$185	\$304	\$1270	\$1513	\$-1344
Average value of land per acre - -	203	208	173	179	181
Average investment per acre- - - -	246	255	218	232	235
Investment in livestock per farm -	1949	2243	2259	2357	2238
Investment in cattle per farm- - -	656	653	917	993	1003
Investment in hogs per farm- - - -	318	352	472	418	356
Investment in poultry per farm - -	203	161	151	148	140
Gross income per acre- - - - -	22.50	23.05	25.96	27.50	15.26
Operating cost per acre- - - - -	12.42	11.92	12.51	12.36	12.05
Net increase from crops per farm -	3379	3651	3242	3990	2126
Miscellaneous income per farm- - -	74	48	109	95	62
Livestock income per farm- - - - -	1609	1580	2231	2296	1457
Gross income per farm- - - - -	5062	5279	5582	6331	3645
Cattle income per farm - - - - -	196	257	503	465	244
Dairy sales per farm - - - - -	317	442	518	503	353
Hog income per farm- - - - -	724	513	877	1054	662
Poultry income per farm- - - - -	356	318	301	258	163
Average yield corn in bu.- - - - -	50	43	48	47	35
Average yield oats in bu.- - - - -	39	28	41	40	36

¹Records from Champaign County only for 1926, 1927, and 1930

²Records from Champaign and Vermilion Counties 1928.

³Records from Champaign and Piatt Counties 1929.

Champaign Coutry, 1930

Item	Your farm	Average of 38 farms	13 most profitable farms	13 least profitable farms
<u>Capital Investments--Land</u> - - - - -		43,329	50,264	35,298
Farm Improvements - - - - -		4,898	4,937	3,674
Horses- - - - -		635	614	639
Cattle- - - - -		1,003	787	819
Hogs- - - - -		356	341	307
Sheep - - - - -		104	264	13
Bees- - - - -		---	---	---
Poultry - - - - -		140	81	174
Livestock--Total - - - - -		2,238	2,087	1,952
Machinery and equipment- - - - -		2,017	2,360	1,991
Feed, grain and supplies - - - - -		3,635	4,389	2,952
Total Investment- - - - -	\$	\$56,117	\$64,037	\$45,867
<u>Receipts--Net Increases</u> - - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		244	225	93
Hogs- - - - -		662	763	411
Sheep - - - - -		35	84	---
Bees- - - - -		---	---	---
Poultry - - - - -		59	39	68
Egg sales - - - - -		104	35	180
Dairy sales - - - - -		353	328	372
Livestock--Total - - - - -		1,457	1,474	1,124
Feed, grain and supplies		2,126	3,483	1,132
Labor off farm - - - - -		53	83	30
Miscellaneous receipts - - - - -		9	15	2
Total Receipts--Net Increases - - -	\$	\$ 3,645	\$ 5,055	\$ 2,283
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		340	287	266
Horses- - - - -		38	43	33
Miscellaneous livestock decreases		---	---	2
Sheep		---	---	---
Machinery and equipment - - - - -		538	546	570
Feed, grain and supplies- - - - -		---	---	---
Livestock expense - - - - -		47	32	37
Crop expense- - - - -		183	201	133
Hired labor - - - - -		391	470	329
Taxes - - - - -		492	527	430
Miscellaneous expenses- - - - -		30	28	32
Total Expenses--Net Decreases - - -	\$	\$ 2,059	\$ 2,134	\$ 1,837
Receipts Less Expenses- - - - -	\$	\$ 1,586	\$ 2,921	\$ 451
Total unpaid labor- - - - -		820	747	853
Operator's labor- - - - -		696	679	720
Family labor- - - - -		124	68	133
Net income from investment and management - - -		766	2,174	-402
Rate earned on investment - - - - -	%	1.36%	3.39%	-.9%
Return to capital and operator's labor and management		1,462	2,853	318
5 percent of capital invested - - -		2,806	3,202	2,293
Labor and management wage - - - - -	\$	\$-1,344	\$ -349	\$-1,975

Champaign County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Soybeans	Cattle	Hogs	Poultry					Man labor	Overat- ing expense	Per acre	Per farm	
8.36	56	57	35	139	317	264	233	---	13	.73	18	44	35	10	330
7.36	53	54	33	129	297	244	213	---	12	1.23	20	49	32	9	360
6.36	50	51	31	119	277	224	203	---	11	1.73	22	54	29	8	340
5.36	47	48	29	109	257	204	193	---	10	2.23	24	59	26	7	320
4.36	44	45	27	99	237	184	183	---	9	2.73	26	64	23	6	300
3.36	41	42	25	89	217	164	173	---	8	3.23	28	69	21	5	280
2.36	38	39	23	79	197	144	163	---	7	3.73	30	74	18	4	260
1.36	35	36	21	69	177	124	153	---	6	4.23	32	79	15	3	240
.36	32	33	19	59	157	104	143	---	5	4.73	34	84	12	2	220
-.64	29	30	17	49	137	84	133	---	4	5.23	36	89	9	1	200
-1.64	26	27	15	39	117	64	123	---	3	5.73	38	94	6	500	180
-2.64	23	24	13	29	97	44	113	---	2	6.23	40	99	3	---	160
-3.64	20	21	11	19	77	24	103	---	1	6.73	42	104	---	---	140
-4.64	17	18	9	9	57	4	93	---	---	7.23	44	109	---	---	120
-5.64	14	15	7	---	37	---	83	---	---	7.73	46	114	---	---	100

Champaign County, 1930

Factors helping to analyze the farm business	Your farm	Average of 38 farms	13 most profitable farms	13 least profitable farms
Size of farm--acres - - - - -	-----	239	278	187
Percent of land area tillable - - -	-----	96.4	97.4	95.7
Gross receipts per acre - - - - -	-----	15.26	18.21	12.25
Total expenses per acre - - - - -	-----	12.05	10.38	14.40
Net receipts per acre - - - - -	-----	3.21	7.83	-2.15
Value of land per acre- - - - -	-----	181	181	189
Total investment per acre - - - - -	-----	235	231	246
Acres in Corn - - - - -	-----	102	122	80
Oats - - - - -	-----	38	38	35
Winter Wheat - - - - -	-----	20	26	10
Soybeans - - - - -	-----	27	42	13
Crop yields--Corn, bu. per acre- - -	-----	35.2	36.9	33.9
Oats, bu. per acre - - -	-----	36.2	40.1	33.9
Winter Wheat, bu. per acre - - - - -	-----	23.3	26.4	22.9
S.beans, bu. per acre- - -	-----	21.3	22.4	22.1
Value of feed fed to productive livestock- - - - -	-----	952	973	873
Returns per \$100 of feed fed to productive livestock - - -	-----	153	151	129
Returns per \$100 invested in:	-----			
All productive livestock- - -	-----	100	100	92
Cattle- - - - -	-----	69	69	60
Hogs- - - - -	-----	177	209	151
Poultry - - - - -	-----	124	95	155
Dairy sales per dairy cow - - - - -	-----	63	60	66
Investment in productive livestock per acre - - -	-----	6.09	5.32	6.50
Receipts from productive livestock per acre - - -	-----	6.10	5.31	6.01
Man labor cost per \$100 gross income- - - - -	-----	32	22	50
Man labor cost per acre - - - - -	-----	4.97	4.31	6.23
Value of feed fed to horses - - - - -	-----	282	256	226
Power and machinery cost per crop acre- - - - -	-----	4.23	3.47	5.56
Expenses per \$100 gross income- - -	-----	79	57	116
Machinery cost per acre - - - - -	-----	2.25	1.97	3.05
Farm improvements cost per acre	-----	1.42	1.03	1.42
Farms with tractor- - - - -	-----	79%	100%	69%
Excess of sales over expenses - - -	-----	2916	3783	1590
Decrease in inventory - - - - -	-----	1330	862	1139

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Ford County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, R. G. Trummel, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921 one hundred farms in Woodford County which is typical of central Illinois had an average net loss of practically one percent of the total farm investment. In 1920 thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Ford County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 32 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$610 a farm, there remains a rate of one percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group lacked \$1141 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$185 an acre not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$231 an acre. The land and improvements exclusive of the residence averaged \$202 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8

*W. F. Purnell, farm adviser in Ford County cooperated in supervising and collecting the records on which this report is based.

percent and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm and for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$1037 while the surplus of sales over expenses was \$3146. For the more successful farms, the corresponding figures were \$1259 reduction in inventory and \$5149 surplus of income over expense. For the less successful farms the figures were \$1061 reduction in inventory and \$1839 surplus of income over expenses. The farms in the higher earnings group show a greater writing off of inventories and they also had on the average a much larger surplus of income over expenses. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930 the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay since the small grains generally yielded well in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area and they are very select. The difference in average earnings between the most successful third and the least successful third of the farm included in this report is very significant, however, since the difference in net income amounts to \$2991 a farm.

The most profitable 10 farms averaged 116 acres larger than the least profitable 10 farms. This evidently gave the former group some advantage in lower costs per acre for labor, power and equipment. It is significant that for five years of the past six the reports for this area have shown a larger average acreage for the farms of the more profitable group. The big difference between the two groups, however, was in income per acre and not in expense and larger size gives no advantage in income per acre. The difference in gross income per farm in other years and other areas has usually been \$2000 or more. This area in the depression year of 1930 was no exception to the rule showing as it does a difference of \$3807.

One of the advantages of the more successful farms was that of larger crop yields. They produced 4 bushels more corn, 3 bushels more oats, and 4 bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 79 acres more corn, 14 acres more wheat, and 10 acres more oats than the less profitable farms.

On the more profitable farms another of the important advantages was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$158 of livestock income from each \$100 worth of feed other than pasture while the less successful farmers had a corresponding income of only \$121. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms but the additional \$37 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$1200 worth of feed which was fed on the average farm in this area this advantage of \$37 a hundred amounts to a total of more than \$450 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$104 dairy sales per dairy cow as compared with \$33 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference, each of them having about \$6 an acre invested in livestock exclusive of horses and mules. This is a relatively small amount of livestock. In the hog and beef cattle section of western Illinois the average investment in livestock normally is around \$15 an acre.

The labor efficiency was much higher on farms of the more successful group. They had 96 cents an acre less labor cost. Due to their larger incomes from less labor, their labor cost per \$100 income was only \$24 as compared with \$48 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$24 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, mechanical power and machinery per crop acre was \$1.02 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group. Probably most of the difference between the two groups in the cost per acre for labor, power and equipment is accounted for in the larger size of the more successful farms.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$19.14 and an expense of \$10.27 an acre as compared with \$11.59 income and \$12.06 expense on the least profit-

able 10 farms. This resulted in an average net income of \$8.87 and a net loss of 47 cents an acre respectively.

The following table presents some cooperative investment and earnings data on accounting farms in Ford County for the period 1926-1930. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$15 an acre in the 5 year period. The operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$1282.

Comparative Earnings and Investment Figures on Farms in Ford County
for 1926-1930

Items	1926 ¹	1927 ¹	1928 ¹	1929 ¹	1930
Numbers of farms - - - - -	31	28	34	41	32
Average size of farms, acres - - -	231	233	259	271	264
Average rate earned, to pay for management, risk and capital - -	3.9%	4.1%	6.0%	5.2%	2.0%
Average labor and management wage	\$53	\$218	\$1282	\$826	\$-1141
Average value of land per acre - - -	199	195	185	179	185
Average investment per acre - - - -	245	244	231	226	231
Investment in livestock per farm - -	2181	2549	2526	2498	2244
Investment in cattle per farm - - -	778	767	1057	942	965
Investment in hogs per farm - - - -	484	730	522	493	372
Investment in poultry per farm - - -	184	182	191	175	138
Gross income per acre - - - - -	20.96	21.83	25.17	23.80	15.62
Operating cost per acre - - - - -	11.39	11.72	11.36	12.05	10.90
Net increase from crops per farm - -	2819	2945	3929	3727	2287
Miscellaneous income per farm - - -	73	47	72	83	119
Livestock income per farm - - - - -	1953	2104	2518	2641	1710
Gross income per farm - - - - -	4845	5096	6519	6451	4116
Cattle income per farm - - - - -	228	421	401	506	222
Dairy sales per farm - - - - -	391	460	656	585	506
Hog income per farm - - - - -	966	855	1035	1061	741
Poultry income per farm - - - - -	330	307	365	412	200
Average yield corn in bu. - - - - -	52	39	46	42	35
Average yield oats in bu. - - - - -	34	28	37	38	30

¹A few records from Iroquois County included for 1926, 1927, 1928 and 1929.

Ford County, 1930

Item	Your farm	Average of 32 farms	10 most profitable farms	10 least profitable farms
<u>Capital Investments</u> --Land - - - - -		48,662	63,167	38,736
Farm Improvements - - - - -		4,721	5,091	3,795
Horses- - - - -		709	956	585
Cattle- - - - -		965	1,337	849
Hogs- - - - -		372	572	338
Sheep - - - - -		45	45	20
Bees- - - - -		15	40	6
Poultry - - - - -		138	158	172
Livestock--Total - - - - -		<u>2,244</u>	<u>3,108</u>	<u>1,970</u>
Machinery and equipment- - - - -		1,863	2,357	1,592
Feed, grain and supplies - - - - -		3,501	3,767	3,219
Total Investment- - - - -	\$	\$ 60,991	\$ 77,490	\$ 49,312
<u>Receipts--Net Increases</u>				
Horses- - - - -		23	69	---
Cattle- - - - -		222	326	219
Hogs- - - - -		741	1,136	661
Sheep - - - - -		18	9	17
Bees- - - - -		---	---	4
Poultry - - - - -		61	44	68
Egg sales - - - - -		139	116	215
Dairy sales - - - - -		506	829	149
Livestock--Total - - - - -		<u>1,710</u>	<u>2,529</u>	<u>1,333</u>
Feed, grain and supplies - - - - -		2,287	3,577	1,063
Labor off farm - - - - -		115	133	35
Miscellaneous receipts - - - - -		4	1	2
Total Receipts--Net Increases - - - - -	\$	\$ 4,116	\$ 6,240	\$ 2,433
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		263	290	222
Horses- - - - -		---	---	7
Miscellaneous livestock decreases - - - - -		4	14	---
Machinery and equipment - - - - -		528	573	461
Feed, grain and supplies- - - - -		---	---	---
Livestock expense - - - - -		41	56	18
Crop expense- - - - -		214	220	204
Hired labor - - - - -		447	541	311
Taxes - - - - -		479	622	398
Miscellaneous expenses- - - - -		31	34	34
Total Expenses--Net Decreases - - - - -	\$	\$ 2,007	\$ 2,350	\$ 1,655
Receipts Less Expenses- - - - -	\$	\$ 2,109	\$ 3,890	\$ 778
Total unpaid labor- - - - -		866	998	877
Operator's labor- - - - -		666	696	720
Family labor- - - - -		200	302	157
Net income from investment and management - - - - -		1,243	2,892	-99
Rate earned on investment - - - - -		2.04%	3.73%	-.20%
Return to capital and operator's labor and management - - - - -		1,909	3,588	621
5 percent of capital invested - - - - -		3,050	3,874	2,466
Labor and management wage - - - - -	\$	\$ -1,141	\$ -286	\$ -1,845

Ford County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operat- ing expense	Per acre	Per farm	
9	56	51	40	150	340	292	203	153	13	---	17	35	36	7 500	400
8	53	42	38	140	320	272	193	143	12	.50	19	40	33	7 000	320
7	50	45	36	130	300	252	183	133	11	1.00	21	45	31	6 500	360
6	47	42	34	120	280	232	173	123	10	1.50	23	50	28	6 000	340
5	44	39	32	110	260	212	163	113	9	2.00	25	55	25	5 500	320
4	41	36	30	100	240	192	153	103	8	2.50	27	60	22	5 000	300
3	38	33	28	90	220	172	143	93	7	3.00	29	65	19	4 500	280
2	35	30	26	80	200	152	133	83	6	3.50	31	70	16	4 000	260
1	32	27	24	70	180	132	123	73	5	4.00	33	75	13	3 500	240
0	29	24	22	60	160	112	113	63	4	4.50	35	80	10	3 000	220
-1	26	21	20	50	140	92	103	53	3	5.00	37	85	7	2 500	200
-2	23	18	18	40	120	72	93	43	2	5.50	39	90	4	2 000	180
-3	20	15	16	30	100	52	83	33	1	6.00	41	95	1	1 500	160
-4	17	12	14	20	80	32	73	23	--	6.50	43	100	--	1 000	140
-5	14	9	12	10	60	12	63	13	--	7.00	45	105	--	500	120

Ford County, 1930

Factors helping to analyze the farm business	Your farm	Average of 32 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -	_____	264	326	210
Percent of land area tillable - - -	_____	95.1	94.0	94.7
Gross receipts per acre - - - - -	_____	15.62	19.14	11.59
Total expenses per acre - - - - -	_____	10.90	10.27	12.06
Net receipts per acre - - - - -	_____	4.72	8.87	-.47
Value of land per acre- - - - -	_____	185	194	184
Total investment per acre - - - - -	_____	231	238	235
Acres in Corn - - - - -	_____	123	169	90
Oats - - - - -	_____	60	62	52
Wheat- - - - -	_____	14	19	5
Barley - - - - -	_____	2	1	4
Soybeans - - - - -	_____	4	6	5
Crop yields--Corn, bu. per acre - -	_____	34.7	36.8	32.6
Oats, bu. per acre - -	_____	29.8	33.4	30.2
Wheat, bu. per acre- -	_____	25.6	23.0	18.8
Value of feed fed to productive livestock- - - - -	_____	1268	1551	1101
Returns per \$100 of feed fed to productive livestock - -	_____	133	158	121
Returns per \$100 invested in:				
All productive livestock- - - -	_____	115	128	95
Cattle- - - - -	_____	80	102	42
Hogs- - - - -	_____	200	203	198
Poultry - - - - -	_____	152	109	171
Dairy sales per dairy cow - - - - -	_____	83	104	33
Investment in productive livestock per acre -	_____	5.55	5.85	6.65
Receipts from productive livestock per acre -	_____	6.39	7.50	6.35
Man labor cost per \$100 gross income - - - - -	_____	31	24	48
Man labor cost per acre - - - - -	_____	4.84	4.55	5.51
Value of feed fed to horses - - - -	_____	271	330	232
Power and machinery cost per crop acre- - - - -	_____	3.53	3.03	4.05
Expenses per \$100 gross income- - -	_____	70	54	104
Machinery cost per acre - - - -	_____	2.00	1.76	2.20
Farm improvements cost per acre	_____	1.00	.89	1.06
Farms with tractor- - - - -	_____	87%	100%	70%
Excess of sales over expenses - - -	_____	3,146	5,149	1,839
Decrease in inventory - - - - -	_____	1,037	1,259	1,061

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With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

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In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

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Annual Farm Business Report

Iroquois County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Iroquois County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 38 farmers in Iroquois County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2 tenths of 1 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$506 a farm, there is nothing left as pay for the risk and use of capital invested in these farms. In fact the result is a net loss. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$1723 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$147 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$208 an acre. The land and improvements exclusive of the residence averaged \$172 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through *C. E. Johnson, farm adviser in Iroquois County, cooperated in supervising and collecting the records on which this report is based.

their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$1308 while the surplus of sales over expenses was \$2244. For the more successful farms, the corresponding figures were \$816 reduction in inventory and \$2934 surplus of income over expense. For the less successful farms the figures were \$1870 reduction in inventory and \$1433 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops, however, is stored, the small grains, especially wheat, being marketed before inventory date on many farms. The larger inventory decrease on the less successful farms was due to the fact that they had 596 bushels less corn and 9 head less hogs per farm at the close of the year as compared with the beginning of the year. The more successful farms had only a small decrease in corn on hand and a small increase in number of hogs. The less profitable farms also had more cattle per farm and the decline in cattle values was more severe than in the cost of hogs and corn.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms

included in this report is very significant, however, since the difference in net income amounts to \$2509 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only one acre difference in average size between the most profitable 12 farms and the least profitable 12 farms, the average size of all farms being 243 acres. The difference in percentage of tillable land was only 2 percent. Difference in acreage was not an important factor in the difference in income. The big difference between the two groups was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule.

As a rule one of the important advantages of the more successful farms is that of larger crop yields. In this case the difference in yields was only one bushel of corn and three bushels of oats, an unusually small difference. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 16 acres more corn, 4 acres less wheat, and 9 acres less oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$132 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$85. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$97 from each \$100 worth of feed on the most profitable 12 farms was an important factor in their larger net incomes. On over \$1700 worth of feed which was fed on the average farm in this area this advantage of \$97 a hundred amounts to a total of more than \$1650 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$132 dairy sales per dairy cow as compared with \$70 per dairy cow on the less profitable farms. The less successful farms had about 25 percent more livestock as measured by the livestock investment but since there was no margin of profit in livestock on these farms the extra numbers were a handicap rather than an advantage.

The labor efficiency was higher on farms of the more successful group. They had 10 cents an acre less labor cost. Due to their larger incomes from slightly less labor their labor cost per \$100 income was only \$31 as compared with \$64 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 12 farms had an advantage of \$33 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.47 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group and there is no evidence of a corresponding return for the extra cost.

The situation is summed up in the gross receipts and expense per acre. The most profitable 12 farms had an average gross income of \$17.26 and an expense of \$11.92 an acre as compared with \$8.50 income and \$13.78 expense on the least profitable 12 farms. This resulted in an average net income of \$5.34 and a net loss of \$5.28 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Ford and Iroquois counties for the period 1926-1930. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$50 an acre in the 5 year period and were lowest in 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$1282.

Comparative Earnings and Investment Figures on Farms in
Ford and Iroquois Counties for 1926-1930

Items	1926	1927	1928	1929	1930 ¹
Numbers of farms - - - - -	31	28	34	41	38
Average size of farms, acres - - -	231	233	259	271	243
Average rate earned, to pay for management, risk and capital- - -	3.9%	4.1%	6.0%	5.2%	0.2%
Average labor and management wage-	\$53	\$218	\$1282	\$826	\$-1723
Average value of land per acre - -	199	195	185	179	147
Average investment per acre- - - -	245	244	231	226	208
Investment in livestock per farm -	2181	2549	2526	2498	3274
Investment in cattle per farm- - -	778	767	1057	942	1560
Investment in hogs per farm- - - -	484	730	522	493	526
Investment in poultry per farm - -	184	182	191	175	179
Gross income per acre- - - - -	20.96	21.83	25.17	23.80	12.27
Operating cost per acre- - - - -	11.39	11.72	11.36	12.05	11.83
Net increase from crops per farm -	2819	2945	3929	3727	898
Miscellaneous income per farm- - -	73	47	72	83	53
Livestock income per farm- - - - -	1953	2104	2518	2641	2035
Gross income per farm- - - - -	4845	5096	6519	6451	2986
Cattle income per farm - - - - -	228	421	401	506	301
Dairy sales per farm - - - - -	391	460	656	585	526
Hog income per farm- - - - -	966	855	1035	1061	849
Poultry income per farm- - - - -	330	307	365	412	331
Average yield corn in bu.- - - - -	52	39	46	42	33
Average yield oats in bu.- - - - -	34	28	37	38	32

¹Records for Iroquois County only 1930.

Iroquois County, 1930

Item	Your farm	Average of 38 farms	12 most profitable farms	12 least profitable farms
Capital Investments--Land - - - - -		35 700	34 502	34 339
Farm Improvements - - - - -		6 162	5 957	6 861
Horses- - - - -		825	700	781
Cattle- - - - -		1 560	1 317	1 692
Hogs- - - - -		526	398	485
Sheep - - - - -		179	92	351
Bees- - - - -		5	15	1
Poultry - - - - -		179	160	172
Livestock--Total - - - - -		3 274	2 682	3 482
Machinery and equipment- - - - -		1 809	1 838	2 221
Feed, grain and supplies - - - - -		3 679	3 663	3 696
Total Investment- - - - -	\$	\$50 624	\$ 48 642	\$ 50 599
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		301	133	324
Hogs- - - - -		849	888	657
Sheep - - - - -		25	64	---
Bees- - - - -		3	8	---
Poultry - - - - -		143	162	117
Egg sales - - - - -		188	204	155
Dairy sales - - - - -		526	848	267
Livestock--Total - - - - -		2 035	2 307	1 520
Feed, grain and supplies - - - - -		898	1 727	426
Labor off farm - - - - -		47	42	49
Miscellaneous receipts - - - - -		6	8	8
Total Receipts--Net Increases - - - - -	\$	\$ 2 986	\$ 4 084	\$ 2 003
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		299	294	298
Horses- - - - -		39	51	31
Miscellaneous livestock decreases sheep - - - - -		---	---	22
Machinery and equipment - - - - -		523	497	781
Feed, grain and supplies- - - - -		---	---	---
Livestock expense - - - - -		54	59	36
Crop expense- - - - -		204	181	252
Hired labor - - - - -		443	426	517
Taxes - - - - -		463	435	478
Mixcellaneous expenses- - - - -		25	23	25
Total Expenses--Net Decreases - - - - -	\$	\$ 2 050	\$ 1 966	\$ 2 440
Receipts Less Expenses- - - - -	\$	\$ 936	\$ 2 118	\$ -437
Total unpaid labor- - - - -		830	854	808
Operator's labor- - - - -		702	720	690
Family labor- - - - -		128	134	118
Net income from investment and management - - - - -		106	1 264	-1 245
Rate earned on investment - - - - -	%	.21 %	2.60 %	-2.46 %
Return to capital and operator's labor and management - - - - -		808	1 984	-555
5 percent of capital invested - - - - -		2 531	2 432	2 530
Labor and management wage - - - - -	\$	\$-1 723	\$ -448	\$ -3 085

Iroquois County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operat- ing expense	Per acre	Per farm	
7.21	54	53	34	128	308	335	189	161	16	.95	28	62	33	6 500	380
6.21	51	50	32	118	288	315	179	151	15	1.45	30	67	30	6 000	360
5.21	48	47	30	108	268	295	169	141	14	1.95	32	72	27	5 500	340
4.21	45	44	28	98	248	275	159	131	13	2.45	34	77	24	5 000	320
3.21	42	41	26	88	228	255	149	121	12	2.95	36	82	21	4 500	300
2.21	39	38	24	78	208	235	139	111	11	3.45	38	87	18	4 000	280
1.21	36	35	22	68	188	215	129	101	10	3.95	40	92	15	3 500	260
0.21	33	32	20	58	168	195	119	91	9	4.45	42	97	12	3 000	240
-1.79	30	29	18	48	148	175	109	81	8	4.95	44	102	9	2 500	220
-1.79	27	26	16	38	128	155	99	71	7	5.45	46	107	6	2 000	200
-2.79	24	23	14	28	108	135	89	61	6	5.95	48	112	3	1 500	180
-3.79	21	20	12	18	88	115	79	51	5	6.45	50	117	--	1 000	160
-4.79	18	17	10	8	68	95	69	41	4	6.95	52	122	--	500	140
-5.79	15	14	8	--	48	75	59	31	3	7.45	54	127	--	--	120
-6.79	12	11	6	--	28	55	49	21	2	7.95	56	132	--	--	100

Iroquois County, 1930

Factors helping to analyze the farm business	Your farm	Average of 38 farms	12 most profitable farms	12 least profitable farms
Size of farm--acres - - - - -	_____	243	237	236
Percent of land area tillable - - -	_____	91.2	91.5	89.3
Gross receipts per acre + - - - -	_____	12.27	17.26	8.50
Total expenses per acre - - - - -	_____	11.83	11.92	13.78
Net receipts per acre - - - - -	_____	.44	5.34	-5.28
Value of land per acre- - - - -	_____	147	146	146
Total investment per acre - - - - -	_____	208	206	215
Acres in Corn - - - - -	_____	106	112	96
Oats - - - - -	_____	62	54	63
Wheat- - - - -	_____	5	5	9
Barley - - - - -	_____	3	3	5
Crop yields--Corn, bu. per acre- - -	_____	33.2	34.4	33.3
Oats, bu. per acre- - -	_____	32.4	34.4	31.5
Value of feed fed to productive livestock- - - - -	_____	1719	1269	1762
Returns per \$100 of feed fed to productive livestock - -	_____	119	182	85
Returns per \$100 invested in:				
All productive livestock- -	_____	89	121	63
Cattle- - - - -	_____	58	84	39
Hogs- - - - -	_____	168	213	157
Poultry - - - - -	_____	195	232	166
Dairy sales per dairy cow - - - - -	_____	91	132	70
Investment in productive livestock per acre -	_____	9.38	8.04	10.16
Receipts from productive livestock per acre -	_____	8.36	9.75	6.36
Man labor cost per \$100 gross income- - - - -	_____	42	31	64
Man labor cost per acre - - - - -	_____	5.10	5.35	5.45
Value of feed fed to horses - - - -	_____	309	265	282
Power and machinery cost per crop acre - - - - -	_____	4.45	4.25	5.72
Expenses per \$100 gross income- - -	_____	97	69	162
Machinery cost per acre - - - -	_____	2.15	2.10	3.31
Farm improvements cost per acre	_____	1.23	1.24	1.26
Farms with tractor- - - - -	_____	74%	75%	100%
Excess of sales over expenses - - -	_____	2244	2934	1433
Decrease in inventory - - - - -	_____	1308	816	1870

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

LaSalle, Marshall, Putnam and Grundy Counties, Illinois, 1930

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The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on the farm investment last year. In considering the following figures for the farm account cooperators in LaSalle, Marshall-Putnam and Grundy counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 123 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 1.8 percent on their total farm investments. A wage of \$50 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$496 a farm, there remains a rate of eight-tenths of one percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group lacked \$858 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$152 an acre not including buildings. Other items including improvements; equipment, livestock, and feed made a total investment of \$212 an acre. The land and improvements exclusive of the residence averaged \$174 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 900 companies was 12.1 percent. For 1929, 1,500 companies were reported as earning 12.8 percent and for 1930, 900 companies show 7.2 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like

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In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory for the average farm and for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$1,081 while the surplus of sales over expenses was \$2,899. For the more successful farms, the corresponding figures were \$689 reduction in inventory, and \$3,784 surplus of income over expense. For the less successful farms the figures were \$1,492 and \$1,889 respectively. It is evident that the farms in the low earnings group do show a greater writing off of inventories but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930 the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay since the small grains generally yielded well in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms.

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Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2,649 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 30 acres difference in average size between the most profitable 41 farms and the least profitable 41 farms, the average size of all farms being 233 acres. The difference in percentage of tillable land was only 7 percent. Difference in acreage was not an important factor in the difference in income. In fact, reports of this kind have often shown the more successful farms somewhat smaller. It is probable that the extra 43 acres of tillable land which the more successful farms averaged did give some advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2,000 and \$3,000. This area in the depression year of 1930 was no exception to the rule.

One of the important advantages of the more successful farms was that of larger crop yields. They produced 5 bushels more corn, 9 bushels more oats, and 3 bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing and planting the crop usually do not increase materially. Since these are among the largest items of cost the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 26 acres more corn, 8 acres more wheat, and 4 acres more oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$150 of livestock income from each \$100 worth of feed other than pasture while the less successful farmers had a corresponding income of only \$97. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms but the additional \$53 from each \$100 worth of feed on the most profitable 41 farms was an important factor in their larger net incomes. On over \$2,000 worth of feed which was fed on the average farm in this area this advantage of \$53 a hundred amounts to a total of more than a \$1,000 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$84 dairy sales per dairy cow as compared with \$60 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference each of them having about \$11 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was much higher on farms of the more successful group. They had 49 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$25 as compared with \$54 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 41 farms had an advantage of \$29 for each \$100 of income.

The combined cost of feed for horses, horse depreciations and power and machinery per crop acre was \$1.26 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group.

The situation is summed up in the gross receipts and expense per acre. The most profitable 41 farms had an average gross income of \$20.42 and an expense of \$11.45 an acre as compared with \$10.52 income and \$12.77 expense on the least profitable 41 farms. This resulted in an average net income of \$8.97 and a net loss of \$2.25 an acre respectively.

The following table presents some comparative investment and earnings data on accounting farms in LaSalle, Marshall, Putnam, and Grundy counties for the period 1926-1930 inclusive. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$40 an acre in the 5-year period and were lowest in 1930. It is interesting to note that the average operating cost per acre has gradually been reduced but is very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$1095.

Comparative Earnings and Investment Figures on Farms in
LaSalle, Marshall, Putnam, and Grundy Counties
for 1926-1930

	1926	1927	1928	1929	1930
Number of farms - - - - -	115	102	94	118	123
Average size of farms, acres - - - - -	200	217	226	221	235
Average rate earned, to pay for - - - - management, risk and capital - - - - -	3.7%	4.2%	5.5%	5.8%	1.34%
Average labor and management wage - - - -	\$41	\$241	\$927	\$1095	\$-358
Average value of land per acre - - - - -	191	184	177	161	152
Average investment per acre - - - - -	255	244	237	218	212
Investment in livestock per farm - - - - -	3007	3281	3117	2947	3515
Investment in cattle per farm - - - - -	1184	1155	1316	1315	1572
Investment in hogs per farm - - - - -	859	1092	929	778	355
Investment in poultry per farm - - - - -	123	135	144	144	166
Gross income per acre - - - - -	22.90	23.06	25.57	25.02	15.92
Operating cost per acre - - - - -	13.63	12.92	12.30	12.43	12.01
Net increase from crops per farm - - - -	1414	2097	2137	2303	319
Miscellaneous income per farm - - - - -	42	45	75	75	87
Livestock income per farm - - - - -	3133	2871	3562	3141	2811
Gross income per farm - - - - -	4589	5013	5774	5519	3717
Cattle income per farm - - - - -	536	392	843	578	360
Dairy sales per farm - - - - -	573	791	532	473	551
Hog income per farm - - - - -	1655	1315	1742	1674	1312
Average yield corn in bu. - - - - -	46	39	43	44	37
Average yield oats in bu. - - - - -	33	44	45	41	43

LaSalle, Marshall, Putnam and Grundy Counties, 1930

Item	Your farm	Average of 123 farms	41 most profitable farms	41 least profitable farms
<u>Capital Investments--Land</u> - - - - -		35,403	36,180	29,404
Farm Improvements - - - - -		5,085	5,106	4,318
Horses- - - - -		574	631	494
Cattle- - - - -		1,572	1,332	1,707
Hogs- - - - -		355	1,125	627
Bees- - - - -		---	---	---
Sheep - - - - -		148	48	136
Foultry - - - - -		166	179	165
Livestock--Total - - - - -		<u>3,315</u>	<u>3,315</u>	<u>3,129</u>
Machinery and equipment- - - - -		2,155	2,370	2,018
Feed, grain and supplies - - - - -		3,596	3,697	3,287
Total Investment- - - - -	\$	<u>\$49,554</u>	<u>\$50,668</u>	<u>\$42,156</u>
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		360	388	333
Hogs- - - - -		1,612	2,444	1,135
Sheep - - - - -		38	18	33
Bees- - - - -		---	---	---
Poultry - - - - -		83	108	61
Egg sales - - - - -		167	199	154
Dairy sales - - - - -		551	575	342
Livestock---Total - - - - -		<u>2,811</u>	<u>3,732</u>	<u>2,058</u>
Feed, grain and supplies - - - - -		819	1,084	111
Labor off farm - - - - -		67	96	57
Miscellaneous receipts - - - - -		20	31	12
Total Receipts--Net Increases - - - - -	\$	<u>\$ 3,717</u>	<u>\$ 4,943</u>	<u>\$ 2,238</u>
<u>Expenses--Net Decreases</u>				
Farm Improvements- - - - -		263	249	240
Horses- - - - -		29	1	53
L.S. Decrease - - - - -		---	---	---
Machinery and equipment - - - - -		534	509	532
Feed, grain and supplies- - - - -		---	---	---
Livestock expense - - - - -		61	89	40
Crop expense- - - - -		202	189	189
Hired labor - - - - -		363	373	361
Taxes - - - - -		411	404	385
Miscellaneous expenses- - - - -		36	34	41
Total Expenses--Net Decreases - - - - -	\$	<u>\$ 1,899</u>	<u>\$ 1,848</u>	<u>\$ 1,841</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 1,818</u>	<u>\$ 3,095</u>	<u>\$ 397</u>
Total unpaid labor- - - - -		906	924	875
Operator's labor- - - - -		707	704	710
Family labor- - - - -		199	220	165
Net income from investment and management - - - - -		912	2,171	-478
<u>Rate earned on investment</u> - - - - -	%	<u>1.84%</u>	<u>4.28%</u>	<u>-1.13%</u>
Return to capital and operator's labor and management - - - - -		1,619	2,875	232
5 percent of capital invested - - - - -		2,477	2,534	2,108
Labor and management wage - - - - -	\$	<u>\$ -858</u>	<u>\$ 341</u>	<u>\$-1,876</u>

IaSalle, Marshall, Putnam and Grundy Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in		L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm	
	Corn	Oats	Wheat	Cattle	Hogs					Poultry	Man labor	Operating expense	Per acre		Per farm
						Man labor	Operating expense	Per acre	Per farm						
8.84	58	64	41	132	331	302	197	151	18	.86	12	40	37	7200	370
7.84	55	61	39	122	311	282	187	141	17	1.36	15	45	34	6700	350
6.84	52	58	37	112	291	262	177	131	16	1.86	18	50	31	6200	330
5.84	49	55	35	102	271	242	167	121	15	2.36	21	55	28	5700	310
4.84	46	52	33	92	251	222	157	111	14	2.86	24	60	25	5200	290
3.84	43	49	31	82	231	202	147	101	13	3.36	27	65	22	4700	270
2.84	40	46	29	72	211	182	137	91	12	3.86	30	70	19	4200	250
1.84	37	43	27	62	191	162	127	81	11	4.36	33	75	16	3700	230
0.84	34	40	25	52	171	142	117	71	10	4.86	36	80	13	3200	210
-0.16	31	37	23	42	151	122	107	61	9	5.36	39	85	10	2700	190
-1.16	28	34	21	32	131	102	97	51	8	5.86	42	90	7	2200	170
-2.16	25	31	19	22	111	82	87	41	7	6.36	45	95	4	1700	150
-3.16	22	28	17	12	91	62	77	31	6	6.86	48	100	---	1200	130
-4.16	19	25	15	---	71	42	67	21	5	7.36	51	105	---	700	110
-5.16	16	22	13	---	51	22	57	11	4	7.86	54	110	---	---	90

LaSalle, Marshall, Putnam, and Grundy Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 123 farms	41 most profitable farms	41 least profitable farms
Size of farm--acres - - - - -	_____	233.5	242.1	212.7
Percent of land area tillable - - -	_____	90.0	92.7	85.2
Gross receipts per acre - - - - -	_____	15.92	20.42	10.52
Total expenses per acre - - - - -	_____	12.01	11.45	12.77
Net receipts per acre - - - - -	_____	3.91	8.97	-2.25
Value of land per acre- - - - -	_____	152	149	138
Total investment per acre - - - - -	_____	212	209	198
Acres in Corn - - - - -	_____	97	109	83
Oats - - - - -	_____	50	48	44
Wheat- - - - -	_____	12	17	9
Barley - - - - -	_____	5	5	4
Crop yields--Corn, bu. per acre- - -	_____	37.2	39.7	34.2
Oats, bu. per acre- - -	_____	43.0	46.0	36.9
Wheat, bu. per acre- - -	_____	26.3	26.6	23.5
Barley, bu. per acre - - -	_____	27.6	23.2	26.2
Value of feed fed to productive livestock- - - - -	_____	2214	2486	2115
Returns per \$100 of feed fed to productive livestock - - -	_____	127	150	97
Returns per \$100 invested in:				
All productive livestock- - -	_____	108	142	85
Cattle- - - - -	_____	62	76	45
Hogs- - - - -	_____	191	211	177
Poultry - - - - -	_____	162	185	145
Dairy sales per dairy cow - - - - -	_____	81	84	60
Investment in productive livestock per acre - - -	_____	11.12	10.89	11.34
Receipts from productive livestock per acre - - -	_____	12.04	15.42	9.63
Man labor cost per \$100 gross income- - - - -	_____	33	25	54
Man labor cost per acre - - - - -	_____	5.30	5.18	5.67
Value of feed fed to horses - - - - -	_____	252	265	239
Power and machinery cost per crop acre- - - - -	_____	4.36	3.85	5.11
Expenses per \$100 gross income- - -	_____	75	56	121
Machinery cost per acre - - - - -	_____	2.29	2.10	2.50
Farm improvements cost per acre	_____	1.13	1.03	1.13
Farms with tractor- - - - -	_____	86%	80%	88%
Excess of sales over expenses - - -	_____	2899	3784	1889
Decrease in inventory - - - - -	_____	1081	689	1492

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Macon, Logan, Piatt and DeWitt Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Macon, Logan, Piatt and DeWitt counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 56 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 1.5 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$567 a farm, there remains a rate of 5 tenths of 1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$1290 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$173 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$228 an acre. The land and improvements exclusive of the residence averaged \$193 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929,

*E. H. Walworth, J. H. Checkley, S. S. Davis and H. N. Myers, farm advisers in Macon, Logan, Piatt and DeWitt counties, respectively, cooperated in supervising and collecting the records on which this report is based.

1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$1222 while the surplus of sales over expenses was \$2935. For the more successful farms, the corresponding figures were \$584 reduction in inventory and \$3505 surplus of income over expense. For the less successful farms, the figures were \$1743 reduction in inventory and \$1997 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops, however, is stored, the small grains, especially wheat, being marketed before inventory date on many farms. The chief items in the relatively large inventory decrease on the 19 least profitable farms were the decrease in cattle account and the decrease in the grain account. Farms of this group had considerably larger cattle inventories at the beginning of the year than did the more profitable farms and cattle values suffered severely during the year. The less profitable farms also showed a large decrease in quantity of grain on hand from the beginning to the end of the year.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm

prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2724 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 20 acres difference in average size between the most profitable 19 farms and the least profitable 19 farms, the average size of all farms being 248 acres. The difference in percentage of tillable land was only 1 percent. Difference in acreage was not an important factor in the difference in income. It is significant, however, that four years during the past five the annual farm business reports for this area have shown the more successful farms larger, the five year average difference being 26 acres per farm. It is probable that the extra 21 acres of tillable land which the more successful farms averaged did give some advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule.

One of the important advantages of the more successful farms was that of larger crop yields. They produced $5\frac{1}{2}$ bushels more corn, $7\frac{1}{2}$ bushels more oats, and 3 bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 24 acres more soybeans, 7 acres more wheat, 4 acres less oats, and 2 acres less corn.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$153 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$100. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$53 from each \$100 worth of feed on the most profitable 19 farms was an important factor in their larger net incomes. On over \$1750 worth of feed which was fed on the average farm in this area this advantage of \$53 a hundred amounts to a total of more than \$900 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$86 dairy sales per dairy cow as compared with \$50 per dairy cow on the less profitable farms. The 19 least profitable farms had about 60 percent more livestock per acre as measured by the livestock investment, but since they just barely received the value of feed fed to livestock this extra livestock was a handicap and not a help.

The labor efficiency was higher on farms of the more successful group. They had 84 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$26 as compared with \$53 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 19 farms had an advantage of \$27 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.06 higher on the less successful farms. This is in spite

of the fact that yields were lower on farms of the latter group. Of course, some of this higher cost for power and equipment is explained in the larger amount of livestock per acre on the less profitable farms.

The situation is summed up in the gross receipts and expense per acre. The most profitable 19 farms had an average gross income of \$20.79 and an expense of \$12.27 an acre as compared with \$11.71 income and \$14.52 expense on the least profitable 19 farms. This resulted in an average net income of \$8.52 and a net loss of \$2.81 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in the Macon and Logan county area for the period 1926-1930 inclusive. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$15 an acre in the 5 year period and were lowest in 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$1046.

Comparative Earnings and Investment Figures on Farms in Macon, Logan
Piatt and Adjoining Counties for 1926-1930

Items	1926	1927 ¹	1928 ¹	1929	1930
Numbers of farms - - - - -	28	31	53	40	56
Average size of farms, acres - - -	227	259	244	223	248
Average rate earned, to pay for management, risk and capital - -	3.3%	2.8%	5.6%	5.4%	1.5%
Average labor and management wage-	\$-265	\$-665	\$1046	\$907	\$-1290
Average value of land per acre - -	190	189	180	182	173
Average investment per acre - - - -	244	239	226	240	228
Investment in livestock per farm -	2385	3133	2780	2753	2907
Investment in cattle per farm - - -	1012	1310	1083	1436	1421
Investment in hogs per farm - - - -	885	879	763	544	628
Investment in poultry per farm - - -	154	151	147	152	131
Gross income per acre - - - - -	20.95	18.90	25.65	26.28	15.26
Operating cost per acre - - - - -	12.97	12.23	12.90	13.43	12.92
Net increase from crops per farm -	2074	2014	3383	3012	1798
Miscellaneous income per farm - - -	61	55	74	50	72
Livestock income per farm - - - - -	2617	2832	2791	2798	2170
Gross income per farm - - - - -	4752	4901	6248	5860	4040
Cattle income per farm - - - - -	666	1133	724	1007	483
Dairy sales per farm - - - - -	262	433	593	361	354
Hog income per farm - - - - -	1384	1018	1134	1085	1108
Poultry income per farm - - - - -	266	234	290	314	220
Average yield corn in bu. - - - - -	50	40	47	48	40
Average yield oats in bu. - - - - -	39	24	44	42	38

¹Some records from McLean county included for 1927 and 1928.

Macon, Logan, Piatt, DeWitt Counties, 1930

Item	Your farm	Average of 56 farms	19 most profitable farms	19 least profitable farms
<u>Capital Investments--Land</u> - - - - -		42,995	41,570	40,820
Farm Improvements - - - - -		4,933	3,942	5,516
Horses- - - - -		648	588	670
Cattle- - - - -		1,421	1,133	2,048
Hogs- - - - -		628	605	816
Sheep - - - - -		79	20	133
Bees- - - - -		---	---	---
Poultry - - - - -		131	140	123
Livestock--Total - - - - -		2,907	2,486	3,790
Machinery and equipment- - - - -		2,042	2,339	1,889
Feed, grain and supplies - - - - -		3,794	3,633	3,485
Total Investment- - - - -	\$	\$56,671	\$53,970	\$55,500
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		483	395	819
Hogs- - - - -		1,108	1,165	983
Sheep - - - - -		5	---	11
Bees- - - - -		---	---	---
Poultry - - - - -		74	148	41
Egg sales - - - - -		146	215	123
Dairy sales - - - - -		354	470	205
Livestock--Total - - - - -		2,170	2,393	2,182
Feed, grain and supplies - - - - -		1,798	2,614	409
Labor off farm - - - - -		65	93	49
Miscellaneous receipts - - - - -		7	3	5
Total Receipts--Net Increases - - - - -	\$	\$ 4,040	\$ 5,103	\$ 2,645
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		248	205	270
Horses- - - - -		57	28	66
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		549	549	555
Feed, grain and supplies- - - - -		---	---	---
Livestock expense - - - - -		59	45	77
Crop expense- - - - -		310	237	292
Hired labor - - - - -		548	556	557
Taxes - - - - -		522	530	538
Miscellaneous expenses- - - - -		34	32	36
Total Expenses--Net Decreases - - - - -	\$	\$ 2,327	\$ 2,182	\$ 2,391
Receipts Less Expenses - - - - -	\$	\$ 1,713	\$ 2,921	\$ 254
Total unpaid labor- - - - -		883	831	888
Operator's labor- - - - -		690	668	688
Family labor- - - - -		193	163	200
Net income from investment and management - - - - -		830	2,090	-634
<u>Rate earned on investment</u> - - - - -	%	1.46%	3.87%	-1.14%
Return to capital and operator's labor and management - - - - -		1,520	2,758	54
5 percent of capital invested- - - - -		2,810	2,698	2,775
Labor and management wage - - - - -	\$	\$-1,290	\$ 60	\$-2,721

Macon, Logan, Piatt, DeWitt Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of				Returns per \$100 invested in			L. S. income per \$100 worth of feed fed.	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm		
	Corn	Oats	Wheat	Poultry	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm		Per acre	Per farm
8.46	61	59	38	315	136	320	315	192	145	15	.75	13	45	30	7500	390		
7.46	58	56	36	295	126	300	295	182	135	14	1.25	16	50	28	7000	370		
6.46	55	53	34	275	116	280	275	172	125	13	1.75	19	55	26	6500	350		
5.46	52	50	32	255	106	260	255	162	115	12	2.25	22	60	24	6000	330		
4.46	49	47	30	235	96	240	235	152	105	11	2.75	25	65	22	5500	310		
3.46	46	44	28	215	86	220	215	142	95	10	3.25	28	70	20	5000	290		
2.46	43	41	26	195	76	200	195	132	85	9	3.75	31	75	18	4500	270		
1.46	40	38	24	175	66	180	175	122	75	8	4.25	34	80	16	4000	250		
.46	37	35	22	155	56	160	155	112	65	7	4.75	37	85	14	3500	230		
-.54	34	32	20	135	46	140	135	102	55	6	5.25	40	90	12	3000	210		
-1.54	31	29	18	115	36	120	115	92	45	5	5.75	43	95	10	2500	190		
-2.54	28	26	16	95	26	100	95	82	35	4	6.25	46	100	8	2000	170		
-3.54	25	23	14	75	16	80	75	72	25	3	6.75	49	105	6	1500	150		
-4.54	22	20	12	55	6	60	55	62	15	2	7.25	52	110	4	1000	130		
-5.54	19	17	10	35	---	40	35	52	5	1	7.75	55	115	2	500	110		

Macon, Logan, Piatt, DeWitt Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 56 farms	19 most profitable farms	19 least profitable farms
Size of farm--acres - - - - -		248	246	226
Percent of land area tillable - - - - -		95%	96%	95%
Gross receipts per acre - - - - -		16.26	20.79	11.71
Total expenses per acre - - - - -		12.92	12.27	14.52
Net receipts per acre - - - - -		3.34	8.52	-2.81
Value of land per acre- - - - -		173	169	181
Total investment per acre - - - - -		228	220	246
Acres in Corn - - - - -		98	95	97
Oats - - - - -		32	26	30
Wheat- - - - -		37	38	31
Soybeans - - - - -		18	29	5
Crop yields--Corn, bu. per acre- - - - -		39.6	42.1	36.5
Oats, bu. per acre- - - - -		38.1	41.4	33.6
Wheat, bu. per acre- - - - -		24.1	25.3	22.0
Soybeans, bu. per acre- - - - -		23.8	24.6	24.1
Value of feed fed to productive livestock- - - - -		1773	1562	2176
Returns per \$100 of feed fed to productive livestock - - - - -		122	153	100
Returns per \$100 invested in:				
All productive livestock- - - - -		105	133	81
Cattle- - - - -		66	82	59
Hogs- - - - -		180	203	136
Poultry - - - - -		175	255	141
Dairy sales per dairy cow - - - - -		75	86	50
Investment in productive livestock per acre - - - - -		8.32	7.30	11.89
Receipts from productive livestock per acre - - - - -		8.73	9.75	9.66
Man labor cost per \$100 gross income- - - - -		34	26	53
Man labor cost per acre - - - - -		5.60	5.42	6.26
Value of feed fed to horses - - - - -		278	236	295
Power and machinery cost per crop acre- - - - -		4.24	3.86	4.92
Expenses per \$100 gross income- - - - -		79	59	124
Machinery cost per acre - - - - -		2.21	2.24	2.46
Farm improvements cost per acre - - - - -		1.00	.84	1.20
Farms with tractor- - - - -		75%	95%	47%
Excess of sales over expenses - - - - -		2935	3505	1997
Decrease in inventory - - - - -		1222	584	1743

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Christian and Moultrie Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. E. Wills, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Christian and Moultrie counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 34 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.1 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$439 a farm, there remains a rate of 1.1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$580 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$133 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$174 an acre. The land and improvements exclusive of the residence averaged \$147 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms

*T. H. Brock and J. H. Hughes, farm advisers in Christian and Moultrie counties, respectively, cooperated in supervising and collecting the records on which this report is based.

included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$439 while the surplus of sales over expenses was \$2252. For the more successful farms the corresponding figures were \$651 reduction in inventory and \$3919 surplus of income over expense. For the less successful farms the figures were \$515 reduction in inventory and \$888 surplus of income over expense. In this case the farms in the high earnings group show a greater decrease in inventories, but they had on the average a much larger surplus of income over expense than farms of the low earnings group. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$3030 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 7 acres difference in average size between the most profitable 11 farms and the least profitable 11 farms, the average size of all farms being 252 acres. The difference in percentage of tillable land was about 11 percent. Difference in acreage was not an important factor in the difference in income. In fact, reports of this kind have often shown the more successful farms somewhat smaller. It is probable that the extra 34 acres of tillable land which the more successful farms averaged did give some advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule.

One of the important advantages of the more successful farms was that of larger crop yields. They produced 8 bushels more corn, 21 bushels more oats, and $6\frac{1}{2}$ bushels more soybeans per acre than the less successful farms. There was little difference in the yield of wheat. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 35 acres more corn, 13 acres more wheat, 17 acres more soybeans and 12 acres less oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$146 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$104. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$42 from each \$100 worth of feed on the most profitable 11 farms was an important factor in their larger net incomes. On over \$1750 worth of feed which was fed on the average farm in this area this advantage of \$42 a hundred amounts to a total of more than \$700 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$79 dairy sales per dairy cow as compared with \$53 per dairy cow on the less profitable farms. As to the amount of livestock, the less successful farms had nearly \$3 an acre larger livestock investments. This was nearly a 50 percent increase over the more successful farms but the extra livestock was no advantage since there was no margin of profit in it.

The labor efficiency was much higher on farms of the more successful group. They had 98 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$23 as compared with \$53 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 11 farms had an advantage of \$30 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$2.38 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group and there is no evidence of a corresponding return for this extra power and machinery cost.

The situation is summed up in the gross receipts and expense per acre. The most profitable 11 farms had an average gross income of \$20.08 and an expense of \$10.74 an acre as compared with \$10.67 income and \$13.21 expense on the least profitable 11 farms. This resulted in an average net income of \$9.34 and a net loss of \$2.54 an acre respectively for the two groups.

Christian and Moultrie Counties, 1930

Item	Your farm	Average of 34 farms	11 most profitable farms	11 least profitable farms
Capital Investments--Land - - - - -		33,427	37,688	29,417
Farm Improvements - - - - -		3,418	2,652	3,957
Horses- - - - -		536	560	480
Cattle- - - - -		1,143	908	1,543
Hogs- - - - -		623	643	659
Sheep - - - - -		56	34	133
Bees- - - - -		---	---	---
Poultry - - - - -		128	155	120
Livestock--Total - - - - -		2,486	2,300	2,935
Machinery and equipment- - - - -		2,141	2,318	1,808
Feed, grain and supplies - - - - -		2,439	2,989	1,763
Total Investment- - - - -	\$	\$43,911	\$47,947	\$39,880
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		162	143	349
Hogs- - - - -		1,476	1,928	1,603
Sheep - - - - -		3	---	10
Bees- - - - -		---	---	---
Poultry - - - - -		50	56	64
Egg sales - - - - -		97	142	87
Dairy sales - - - - -		358	332	316
Livestock--Total - - - - -		2,146	2,601	2,429
Feed, grain and supplies - - - - -		1,615	2,439	169
Labor off farm - - - - -		76	98	50
Miscellaneous receipts - - - - -		7	13	9
Total Receipts--Net Increases - - - - -	\$	\$ 3,844	\$ 5,151	\$ 2,657
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		202	176	267
Horses- - - - -		35	2	45
Miscellaneous livestock decreases		---	1	---
Bees		---	---	---
Machinery and equipment - - - - -		605	535	766
Feed, grain and supplies- - - - -		---	---	---
Livestock expense - - - - -		48	59	56
Crop expense- - - - -		259	223	274
Hired labor - - - - -		402	376	445
Taxes - - - - -		448	481	407
Miscellaneous expenses- - - - -		32	30	24
Total Expenses--Net Decreases - - - - -	\$	\$ 2,031	\$ 1,883	\$ 2,284
Receipts Less Expenses- - - - -	\$	\$ 1,813	\$ 3,268	\$ 373
Total unpaid labor- - - - -		907	872	1,007
Operator's labor- - - - -		710	709	698
Family labor- - - - -		197	163	309
Net income from investment and management - - - - -		906	2,396	-634
Rate earned on investment - - - - -	%	2.06%	5.00%	-1.59%
Return to capital and operator's labor and management - - - - -		1,616	3,105	64
5 percent of capital invested - - - - -		2,196	2,397	1,994
Labor and management wage - - - - -	\$	\$ -580	708	\$-1,930

Christian and Moultrie Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	S. beans	Cattle	Hogs					Poultry	Man labor	Operating expense	Per acre		Per farm
9.06	53	55	35	119	394	199	140	14	1.00	19	41	36	7 500	390
8.06	50	52	33	109	374	189	130	13	1.50	21	46	33	7 000	370
7.06	47	49	31	99	354	179	120	12	2.00	23	51	30	6 500	350
6.06	44	46	29	89	334	169	110	11	2.50	25	56	27	6 000	330
5.06	41	43	27	79	314	159	100	10	3.00	27	61	24	5 500	310
4.06	38	40	25	69	294	149	90	9	3.50	29	66	21	5 000	290
3.06	35	37	23	59	274	139	80	8	4.00	31	71	18	4 500	270
2.06	32	34	21	49	254	129	70	7	4.50	33	76	15	4 000	250
1.06	29	31	19	39	234	119	60	6	5.00	35	81	12	3 500	230
.06	26	28	17	29	214	109	50	5	5.50	37	86	9	3 000	210
-.94	23	25	15	19	194	99	40	4	6.00	39	91	6	2 500	190
-1.94	20	22	13	9	174	89	30	3	6.50	41	96	3	2 000	170
-2.94	17	19	11	---	154	79	20	2	7.00	43	101	---	1 500	150
-3.94	14	16	9	---	134	69	10	1	7.50	45	106	---	1 000	130
-4.94	11	13	7	---	114	59	---	---	8.00	47	111	---	500	110

Christian and Moultrie Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 34 farms	11 most profitable farms	11 least profitable farms
Size of farm--acres - - - - -	_____	252	256	249
Percent of land area tillable - - - -	_____	92%	96%	85%
Gross receipts per acre - - - - -	_____	15.24	20.08	10.67
Total expenses per acre - - - - -	_____	11.65	10.74	13.21
Net receipts per acre - - - - -	_____	3.59	9.34	-2.54
Value of land per acre - - - - -	_____	133	147	118
Total investment per acre - - - - -	_____	174	187	160
Acres in Corn - - - - -	_____	87	98	63
Oats - - - - -	_____	24	14	26
Wheat - - - - -	_____	34	40	27
Soybeans - - - - -	_____	41	55	38
Crop yields--Corn, bu. per acre - - -	_____	32.3	34.4	26.3
Oats, bu. per acre - - -	_____	34.2	43.5	27.6
Wheat, bu. per acre - - -	_____	21.5	22.6	21.4
Soybeans, bu. per acre -	_____	21.0	23.5	16.8
Value of feed fed to productive livestock- - - - -	_____	1,771	1,777	2,331
Returns per \$100 of feed fed to productive livestock - - -	_____	121	146	104
Returns per \$100 invested in:				
All productive livestock- - -	_____	119	158	104
Cattle- - - - -	_____	49	54	46
Hogs- - - - -	_____	254	316	245
Poultry - - - - -	_____	129	145	133
Dairy sales per dairy cow - - - - -	_____	70	79	53
Investment in productive livestock per acre - -	_____	7.14	6.43	9.38
Receipts from productive livestock per acre - -	_____	8.51	10.14	9.75
Man labor cost per \$100 gross income - - - - -	_____	33	23	53
Man labor cost per acre - - - - -	_____	5.01	4.69	5.67
Value of feed fed to horses - - - - -	_____	288	275	327
Power and machinery cost per crop acre- - - - -	_____	4.48	3.59	6.07
Expenses per \$100 gross income- - - -	_____	76	53	124
Machinery cost per acre - - - - -	_____	2.40	2.09	3.07
Farm improvements cost per acre	_____	.80	.69	1.07
Farms with tractor- - - - -	_____	88%	100%	82%
Excess of sales over expenses - - - - -	_____	2,252	3,919	888
Decrease in inventory - - - - -	_____	439	651	515

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Coles, Vermilion, Edgar and Douglas Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. E. Wills, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Coles, Vermilion, Edgar and Douglas Counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 61 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.3 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$483 a farm, there remains a rate of 1.3 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$348 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$158 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$210 an acre. The land and improvements exclusive of the residence averaged \$177 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.3 percent.

*Melvin Thomas, Otis Kercher, E. D. VanMatre and G. F. Hoover, farm advisers in Coles, Vermilion, Edgar and Douglas Counties, respectively, cooperated in supervising and collecting the records on which this report is based.

percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$582 while the surplus of sales over expenses was \$2492. For the more successful farms, the corresponding figures were \$214 reduction in inventory and \$3290 surplus of income over expense. For the less successful farms the figures were \$493 reduction in inventory and \$943 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay, since the small grains generally yielded well in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for the large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2526 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 17 acres difference in average size be-

tween the most profitable 20 farms and the least profitable 20 farms, the average size of all farms being 230 acres. The difference in percentage of tillable land was about 10 percent. Difference in acreage was not one of the most important factors in the difference in net income. In fact, reports of this kind have often shown the more successful farms somewhat smaller. It is probable that the extra 37 acres of tillable land which the more successful farms averaged did give some advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule.

One of the more important advantages of the more successful farms is usually that of larger crop yields. In this case, however, they show but little advantage in yields except in the case of soybeans. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 17 acres more corn, 24 acres more soybeans, 6 acres more wheat, and 12 acres less oats. All of the extra tillable land which they had was used for corn and soybeans.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$162 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$108. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$54 from each \$100 worth of feed on the most profitable 20 farms was an important factor in their larger net incomes. On over \$2000 worth of feed which was fed on the average farm in this area this advantage of \$54 a hundred amounts to a total of more than \$1000 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$100 dairy sales per dairy cow as compared with \$73 per dairy cow on the less profitable farms. The more successful farms had somewhat less livestock, averaging a livestock investment of \$3.21 an acre as compared with \$12.25 for the less successful farms. The larger livestock investment on farms of the latter group was invested mostly in cattle.

The labor efficiency was much higher on farms of the more successful group. They had \$1.05 an acre less labor cost. Due to their larger incomes from less labor, their labor cost per \$100 income was only \$23 as compared with \$50 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 20 farms had an advantage of \$27 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.57 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group which indicates that the extra power and equipment cost did not bring a corresponding return.

The situation is summed up in the gross receipts and expense per acre. The most profitable 20 farms had an average gross income of \$22.16 and an expense of \$11.67 an acre as compared with \$12.35 income and \$14.11 expense on the least profitable 20 farms. This resulted in an average net income of \$10.49 and a net loss of \$1.76 an acre respectively.

The following table presents some comparative investment and earnings data on accounting farms in the Coles and Douglas County area for the period 1926-1930 inclusive. The rate earned was lowest for 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$680.

Comparative Earnings and Investment Figures on Farms in
Coles, Vermilion, Edgar and Douglas Counties, for 1926-1930

Items	1926	1927	1928	1929	1930
Numbers of farms - - - - -	39	40	30	49	61
Average size of farms, acres - - -	196	218	233	224	230
Average rate earned, to pay for management, risk and capital- -	4.2%	3.3%	5.0%	4.5%	2.3%
Average labor and management wage-	\$275	\$-82	\$630	\$407	\$-648
Average value of land per acre - -	176	154	160	164	158
Average investment per acre- - - -	224	200	205	216	210
Investment in livestock per farm -	2013	2399	2645	2742	2868
Investment in cattle per farm- - -	785	738	955	1253	1424
Investment in hogs per farm- - - -	585	892	760	762	702
Investment in poultry per farm - -	127	139	112	129	142
Gross income per acre- - - - -	21.92	18.61	22.33	22.29	17.13
Operating cost per acre- - - - -	12.42	11.91	12.03	12.67	12.39
Net increase from crops per farm -	1970	1402	2727	1830	1221
Miscellaneous income per farm- - -	52	47	68	44	58
Livestock income per farm- - - - -	2287	2605	2417	3119	2668
Gross income per farm- - - - -	4309	4054	5212	4993	3947
Cattle income per farm - - - - -	368	610	602	654	464
Dairy sales per farm - - - - -	237	310	242	464	461
Hog income per farm- - - - -	1414	1402	1217	1668	1526
Poultry income per farm- - - - -	220	207	265	297	197
Average yield corn in bu.- - - - -	49	40	48	43	37
Average yield oats in bu.- - - - -	39	27	47	36	40

Coles, Vermilion, Edgar and Douglas Counties, 1930

Item	Your farm	Average of 51 farms	20 most profitable farms	20 least profitable farms
Capital Investments--Land- - - - -		36,329	34,936	27,433
Farm Improvements- - - - -		4,355	3,814	4,568
Horses- - - - -		532	490	487
Cattle- - - - -		1,424	1,114	1,682
Hogs- - - - -		702	547	607
Sheep - - - - -		68	59	105
Bees- - - - -		---	---	---
Poultry - - - - -		142	147	129
Livestock--Total- - - - -		2,868	2,357	3,010
Machinery and equipment - - - - -		1,983	1,800	1,760
Feed, grain and supplies- - - - -		2,812	2,594	2,418
Total Investment - - - - -	\$	\$ 48,347	\$45,501	\$ 39,189
<u>Receipts--Net Increases</u> - - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		464	324	406
Hogs- - - - -		1,526	1,279	1,334
Sheep - - - - -		20	15	3
Bees- - - - -		---	---	---
Poultry - - - - -		52	38	61
Egg sales - - - - -		145	161	130
Dairy sales - - - - -		461	552	472
Livestock--Total- - - - -		2,668	2,369	2,406
Feed, grain and supplies- - - - -		1,221	2,382	---
Labor off farm- - - - -		48	50	48
Miscellaneous receipts- - - - -		10	4	18
Total Receipts--Net Increases- - - - -	\$	\$ 3,947	\$ 4,805	\$ 2,472
<u>Expenses--Net Decreases</u>				
Farm Improvements- - - - -		251	189	251
Horses - - - - -		13	20	7
Miscellaneous livestock decreases		---	---	---
Machinery and equipment- - - - -		513	457	507
Feed, grain and supplies - - - - -		---	---	74
Livestock expense- - - - -		54	50	54
Crop expense - - - - -		244	230	286
Hired labor- - - - -		512	353	463
Taxes- - - - -		419	404	348
Miscellaneous expenses - - - - -		31	26	32
Total Expenses--Net Decreases- - - - -	\$	\$ 2,037	\$ 1,729	\$ 2,002
Receipts Less Expenses - - - - -	\$	\$ 1,910	\$ 3,076	\$ 450
Total unpaid labor - - - - -		813	802	802
Operator's labor - - - - -		677	656	679
Family labor - - - - -		141	136	123
Net income from investment and management- - - - -		1,092	2,274	-352
Rate earned on investment- - - - -		2.26 %	5.00 %	-.90 %
Return to capital and operator's labor and management		1,769	2,940	327
5 percent of capital invested- - - - -		2,417	2,275	1,959
Labor and management wage- - - - -	\$	\$ -648	\$ 665	\$ -1,632

Coles, Vermilion, Edgar and Douglas Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in		L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm		
	Corn	Oats	S. Beans	Cattle					Hogs	Poultry	Man labor	Operat- ing expense		Per acre	Per farm
9.26	58	61	36	139	368	234	201	153	17.50	---	12	37	38	7 500	370
8.26	55	58	34	129	348	274	191	143	16.50	---	15	42	35	7 000	350
7.25	52	55	32	119	328	254	181	133	14.50	1.76	18	47	32	6 500	330
6.26	49	52	30	109	308	234	171	123	13.50	2.26	21	52	29	6 000	310
5.26	46	49	28	99	288	214	161	113	12.50	2.76	24	57	26	5 500	290
4.26	43	46	26	89	268	194	151	103	11.50	3.26	27	62	23	5 000	270
3.26	40	43	24	79	248	174	141	93	10.50	3.76	30	67	20	4 500	250
2.26	37	40	22	69	228	154	131	83	9.50	4.26	33	72	17	4 000	230
1.26	34	37	20	59	208	134	121	73	8.50	4.76	36	77	14	3 500	210
0.26	31	34	18	49	188	114	111	63	7.50	5.26	39	82	11	3 000	190
-0.74	28	31	16	39	168	94	101	53	6.50	5.76	42	87	8	2 500	170
-1.74	25	28	14	29	148	74	91	43	5.50	6.26	45	92	5	2 000	150
-2.74	22	25	12	19	128	54	81	33	4.50	6.76	48	97	---	1 500	130
-3.74	19	22	10	---	108	34	71	23	3.50	7.26	51	102	---	1 000	110
-4.74	16	19	8	---	88	14	61	13	2.50	7.76	54	107	---	---	90

Coles, Vermilion, Edgar and Douglas Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 61 farms	20 most profitable farms	20 least profitable farms
Size of farm--acres - - - - -	_____	230	217	200
Percent of land area tillable - - -	_____	88.8	92.3	81.8
Gross receipts per acre - - - - -	_____	17.13	22.16	12.35
Total expenses per acre - - - - -	_____	12.39	11.67	14.11
Net receipts per acre - - - - -	_____	4.74	10.49	-1.76
Value of land per acre- - - - -	_____	158	161	137
Total investment per acre - - - - -	_____	210	210	196
Acres in Corn - - - - -	_____	86	83	66
Oats - - - - -	_____	34	24	36
Wheat- - - - -	_____	16	16	10
Barley - - - - -	_____	2	1	3
Soybeans - - - - -	_____	20	32	8
Crop yields--Corn, bu. per acre- - -	_____	37.0	38.1	36.7
Oats, bu. per acre- - -	_____	40.4	43.4	38.2
Wheat, bu. per acre - - -	_____	19.2	17.5	20.7
S. beans, bu. per acre - - -	_____	22.5	23.5	17.6
Value of feed fed to productive livestock- - - - -	_____	2044	1463	2221
Returns per \$100 of feed fed to productive livestock - - -	_____	131	162	108
Returns per \$100 invested in:				
All productive livestock - - -	_____	122	133	98
Cattle - - - - -	_____	69	84	54
Hogs - - - - -	_____	228	233	217
Poultry- - - - -	_____	154	147	161
Dairy sales per dairy cow - - - - -	_____	83	100	73
Investment in productive livestock per acre - - -	_____	9.52	8.21	12.25
Receipts from productive livestock per acre - - -	_____	11.58	10.93	12.02
Man labor cost per \$100 gross income- - - - -	_____	33	23	50
Man labor cost per acre - - - - -	_____	5.65	5.16	6.21
Value of feed fed to horses - - - - -	_____	228	197	218
Power and machinery cost per crop acre - - - - -	_____	4.26	3.80	5.37
Expenses per \$100 gross income- - -	_____	72	53	114
Machinery cost per acre - - - - -	_____	2.23	2.11	2.53
Farm improvements cost per acre	_____	1.09	.87	1.25
Farms with tractor- - - - -	_____	79%	85%	60%
Excess of sales over expenses - - -	_____	2492	3290	943
Decrease in inventory - - - - -	_____	582	214	493

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

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In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

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Annual Farm Business Report

Greene County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, L. Wright, and H. C. M. Case*

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The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Greene County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 30 farmers in Greene County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.5 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$367 a farm, there remains a rate of 1.5 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$290 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$107 an acre, not including buildings. Other items including improvements, equipment, live-stock, and feed made a total investment of \$156 an acre. The land and improvements exclusive of the residence averaged \$124 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning

*R. H. Clanahan, farm adviser in Greene County, cooperated in supervising and collecting the records on which this report is based.

12.3 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$631 while the surplus of sales over expenses was \$2401. For the more successful farms, the corresponding figures were \$148 increase in inventory and \$2562 surplus of income over expense. For the less successful farms the figures were \$1323 reduction in inventory and \$2244 surplus of income over expenses. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a smaller surplus of income over expense. The increase in inventory on the more profitable farms consisted of an increase in quantity of grain on hand at the close of the year and an increase in value of improvements and equipment. The operators of these farms spent more than twice as much on improvements and equipment during the year as did the less successful operators and hence had an increase in inventory of these items. They had about 240 bushels more corn, 160 bushels more oats, and 15 acres more growing wheat per farm at the end than at the beginning of the year. On the other hand, the least profitable farms had a decrease of nearly 1000 bushels of corn per farm between the beginning and the end of the year. Both groups show a decrease in livestock inventories.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2356 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 14 acres difference in average size between the most profitable 10 farms and the least profitable 10 farms, the average size of all farms being 236 acres. The difference in percentage of tillable land was 12 percent. Difference in acreage was not an important factor in the difference in income. The more profitable farms were smaller but they had a higher percentage of tillable land which gave them a few acres more tillable land per farm than was contained in the less profitable farms.

One of the most important advantages of the more successful farms was that of larger crop yields. They produced 15 bushels more corn, 7 bushels more oats, and 12 bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing and planting the crop usually do not increase materially. Since there are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 9 acres more corn and 6 acres more wheat. The larger acreage and higher yields gave the more profitable farms an average of 1900 bushels more grain than the less profitable farms had from the 1930 crop.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$157 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$114. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$43 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$2500 worth of feed which was fed on the average farm in this area this advantage of \$43 a hundred amounts to a total of more than \$1000 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs, separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$135 dairy sales per dairy cow as compared with \$78 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference, each of them having about \$11 an acre invested in livestock exclusive of horses and mules.

There was little difference in the labor efficiency of the two groups of farms. The more successful farms had \$2.70 an acre more labor cost but due to their larger incomes from this additional labor, their labor cost per \$100 income was \$33 as compared with \$37 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$4 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$2.26 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group, and there is no evidence that the extra cost for power and equipment brought a corresponding return.

The situation is summed up in the gross receipts and expenses per acre. The most profitable 10 farms had an average gross income of \$23.29 and an expense of \$14.17 an acre as compared with \$13.56 income and \$15.23 expense on the least

profitable 10 farms. This resulted in an average net income of \$9.12 and a net loss of \$1.67 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Greene and Jersey counties for the period 1926-1930 inclusive. The rate earned was lowest for 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$877.

Comparative Earnings and Investment Figures on Farms in Greene and Jersey Counties for 1926-1930

Items	1926	1927	1928	1930	1931 ¹
Numbers of farms - - - - -	31	28	38	38	30
Average size of farms, acres - - -	207	215	204	198	236
Average rate earned, to pay for- management, risk and capital- - -	6.0%	3.9%	6.0%	5.4%	2.5%
Average labor and management wage-	\$861	\$176	\$877	\$804	\$-290
Average value of land per acre - -	111	106	113	108	107
Average investment per acre- - - -	161	153	164	160	156
Investment in livestock per farm -	3281	2819	2778	2741	3203
Investment in cattle per farm- - -	1478	1292	1465	1358	1694
Investment in hogs per farm- - - -	981	756	648	627	783
Investment in poultry per farm - -	130	166	144	135	144
Gross income per acre- - - - -	22.38	18.95	23.26	22.52	16.09
Operating cost per acre- - - - -	12.63	13.00	13.48	13.83	12.25
Net increase from crops per farm -	351	554	1014	455	102
Miscellaneous income per farm- - -	63	92	99	134	120
Livestock income per farm- - - - -	4218	3428	3633	3869	3568
Gross income per farm- - - - -	4632	4074	4746	4458	3790
Cattle income per farm - - - - -	987	951	772	577	257
Dairy sales per farm - - - - -	600	629	906	887	937
Hog income per farm- - - - -	2271	1456	1549	2003	2132
Poultry income per farm- - - - -	306	326	320	330	203
Average yield corn in bu.- - - - -	42	38	46	44	35
Average yield wheat in bu. - - - -	20	12	16	15	20

¹Records for Jersey County only for 1930.

Greene County, 1930

Item	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
<u>Capital Investments--Land</u> - - - - -		25,297	25,237	19,775
Farm Improvements - - - - -		4,000	3,765	4,170
Horses- - - - -		483	497	419
Cattle- - - - -		1,694	1,819	1,935
Hogs- - - - -		783	782	691
Sheep - - - - -		87	25	170
Bees- - - - -		12	--	6
Poultry - - - - -		144	101	116
Livestock--Total - - - - -		<u>3,203</u>	<u>3,224</u>	<u>3,337</u>
Machinery and equipment- - - - -		1,753	1,910	1,428
Feed, grain and supplies - - - - -		2,463	2,309	2,388
Total Investment- - - - -	\$ _____	<u>\$36,716</u>	<u>\$36,445</u>	<u>\$31,098</u>
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		267	317	317
Hogs- - - - -		2,132	2,148	1,799
Sheep - - - - -		27	16	39
Bees- - - - -		2	---	---
Poultry - - - - -		77	43	85
Egg sales - - - - -		126	78	111
Dairy sales - - - - -		937	1,494	664
Livestock--Total - - - - -		<u>3,568</u>	<u>4,096</u>	<u>3,015</u>
Feed, grain and supplies - - - - -		102	799	---
Labor off farm - - - - -		88	133	73
Miscellaneous receipts - - - - -		32	7	30
Total Receipts--Net Increases - - -	\$ _____	<u>\$ 3,790</u>	<u>\$ 5,035</u>	<u>\$ 3,118</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		230	284	222
Horses- - - - -		10	24	18
Miscellaneous livestock decreases		---	---	1
Bees		---	---	---
Machinery and equipment - - - - -		380	285	430
Feed, grain and supplies- - - - -		---	---	1,022
Livestock expense - - - - -		70	81	53
Crop expense- - - - -		285	283	268
Hired labor - - - - -		671	980	383
Taxes - - - - -		326	351	260
Miscellaneous expenses- - - - -		48	37	40
Total Expenses--Net Decreases - - -	\$ _____	<u>\$ 2,020</u>	<u>\$ 2,325</u>	<u>\$ 2,697</u>
Receipts Less Expenses- - - - -	\$ _____	<u>\$ 1,770</u>	<u>\$ 2,710</u>	<u>\$ 421</u>
Total unpaid labor- - - - -		865	738	805
Operator's labor- - - - -		641	576	689
Family labor- - - - -		224	162	116
Net income from investment and management - - -		905	1,972	-384
<u>Rate earned on investment</u> - - - - -	% _____	<u>2.47%</u>	<u>5.41%</u>	<u>-1.24%</u>
Return to capital and operator's labor and management		1,546	2,548	305
5 percent of capital invested - -		1,836	1,822	1,555
Labor and management wage - - - - -	\$ _____	<u>\$ -290</u>	<u>\$ 726</u>	<u>\$-1,250</u>

Greene County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn		Wheat	Cattle	Hogs	Poultry					Man labor	Operat-ing expense	Per acre	Per farm	
	Oats														
9.47	56	55	34	150	414	309	212	175	17	.85	25	41	37	7 500	375
8.47	53	52	32	140	394	289	202	165	16	1.35	27	46	34	7 000	355
7.47	50	49	30	130	374	269	192	155	15	1.85	29	51	31	6 500	335
6.47	47	46	28	120	354	249	182	145	14	2.35	31	56	28	6 000	315
5.47	44	43	26	110	334	229	172	135	13	2.85	33	61	25	5 500	295
4.47	41	40	24	100	314	209	162	125	12	3.35	35	66	22	5 000	275
3.47	38	37	22	90	294	189	152	115	11	3.85	37	71	19	4 500	255
2.47	35	34	20	80	274	169	142	105	10	4.35	39	76	16	4 000	235
1.47	32	31	18	70	254	149	132	95	9	4.85	41	81	13	3 500	215
.47	29	28	16	60	234	129	122	85	8	5.35	43	86	10	3 000	195
-.53	26	25	14	50	214	109	112	75	7	5.85	45	91	7	2 500	175
-1.53	23	22	12	40	194	89	102	65	6	6.35	47	96	4	2 000	155
-2.53	20	19	10	30	174	69	92	55	5	6.85	49	101	1	1 500	135
-3.53	17	16	8	20	154	49	82	45	4	7.35	51	106	--	1 000	115
-4.53	14	13	6	10	134	29	72	35	3	7.85	53	111	--	500	95

Greene County, 1930

Factors helping to analyze the farm business	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -		236	216	230
Percent of land area tillable - - - - -		79%	84%	72%
Gross receipts per acre - - - - -		16.09	23.29	13.56
Total expenses per acre - - - - -		12.25	14.17	15.23
Net receipts per acre - - - - -		3.84	9.12	-1.67
Value of land per acre- - - - -		107	117	86
Total investment per acre - - - - -		156	169	135
Acres in Corn - - - - -		75	73	64
Oats - - - - -		19	21	20
Wheat- - - - -		35	29	23
Soybeans - - - - -		5	5	2
Crop yields--Corn, bu. per acre - - -		34.8	41.5	26.2
Oats, bu. per acre - - -		34.1	37.1	30.3
Wheat, bu. per acre- - -		19.6	25.0	13.0
Value of feed fed to productive livestock- - - - -		2,506	2,617	2,646
Returns per \$100 of feed fed to productive livestock - - -		142	157	114
Returns per \$100 invested in:				
All productive livestock- - -		145	164	123
Cattle- - - - -		81	112	65
Hogs- - - - -		274	282	266
Poultry - - - - -		169	146	182
Dairy sales per dairy cow - - - - -		105	135	78
Investment in productive livestock per acre - -		10.47	11.52	10.66
Receipts from productive livestock per acre - -		15.14	18.94	13.11
Man labor cost per \$100 gross income- - - - -		39	33	37
Man labor cost per acre - - - - -		6.34	7.72	5.02
Value of feed fed to horses - - - - -		296	284	350
Power and machinery cost per crop acre - - - - -		4.33	3.78	6.04
Expenses per \$100 gross income- - - - -		76	61	112
Machinery cost per acre - - - - -		1.61	1.32	1.87
Farm improvements cost per acre -		.98	1.31	.97
Farms with tractor- - - - -		73%	70%	60%
Excess of sales over expenses - - - - -		2,401	2,562	2,244
Decrease in inventory - - - - -		631	148 inc.	1,823

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

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Jersey and Macoupin Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. E. Wills, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Jersey and Macoupin Counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 28 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.8 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$278 a farm, there remains a rate of 1.8 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group had enough income to pay 5 percent on his investment and leave only \$3 as pay for his labor and management. The average value of the land included in the report was \$39 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$134 an acre. The land and improvements exclusive of the residence averaged \$104 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

*C. T. Kibler and W. F. Coolidge, farm advisers in Jersey and Macoupin Counties, respectively, cooperated in supervising and collecting the records on which this report

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$198 while the surplus of sales over expenses was \$1,845. For the more successful farms, the corresponding figures were \$1,192 increase in inventory and \$1,726 surplus of income over expense. For the less successful farms the figures were \$1,393 reduction in inventory and \$1,999 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. Contrary to the general rule for 1930, the more profitable farms in this group had a considerable increased inventory at the close of the year. A study of the individual records shows that this increase was due to an increase in quantities of grain and numbers of livestock on hand at the end of the year. These farms show increases per farm amounting to 4 cattle, 10 hogs, and 544 bushels of grain. They also had small gains in the value of improvements and equipment. The less profitable group of farms had decreases in numbers of hogs and cattle and in quantities of grain on hand.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2,431 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 4 acres difference in average size between the most profitable 10 farms and the least profitable 10 farms, the average size of all farms being 207 acres. The difference in percentage of tillable land was only 11 percent. Difference in acreage was not an important factor in the difference in income. In fact, reports of this kind have often shown the more successful farms somewhat smaller. It is probable that the extra 28 acres of tillable land which the more successful farms averaged did give some advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2,000 and \$3,000. This area in the depression year

of 1930 was no exception to the rule.

As a rule, one of the important advantages of the more successful farms is that of larger crop yields. In this area for 1930, however, there was little difference in crop yields between the two groups. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averages one acre more corn, 16 acres more oats, 26 acres more soybeans, and 18 acres less wheat per farm.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$181 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$103. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$78 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$1,800 worth of feed which was fed on the average farm in this area this advantage of \$78 a hundred amounts to a total of more than \$1,400 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$109 dairy sales per dairy cow as compared with \$100 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference. The livestock investment per acre amounted to \$10 on the more profitable farms and nearly \$9 on the less profitable farms.

The labor efficiency was higher on farms of the more successful group. They had 63 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$25 as compared with \$58 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$33 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was 68 cents higher on the less successful farms.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$20.39 and an expense of \$10.78 an acre as compared with \$9.86 income and \$11.28 expense on the least profitable 10 farms. This resulted in an average net income of \$9.61 and a net loss of \$1.42 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Jersey and adjoining counties for the period 1926-1930 inclusive. The rate earned was lowest for 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from \$3 to \$877.

Comparative Earnings and Investment Figures on Farms in Jersey, Macoupin Counties
for 1926-1930

Items	1926 ^{1/}	1927 ^{1/}	1928 ^{1/}	1929 ^{1/}	1930
Numbers of farms - - - - -	31	28	38	38	28
Average size of farms, acres - - -	207	215	204	198	207
Average rate earned, to pay for management, risk, and capital--	6.0%	3.9%	6.0%	5.4%	2.8%
Average labor and management wage-	\$ 861	\$ 176	\$ 877	\$ 804	\$ 3
Average value of land per acre - -	111	106	113	108	89
Average investment per acre- - - -	161	153	164	160	134
Investment in livestock per farm -	3 281	2 819	2 778	2 741	2 520
Investment in cattle per farm- - -	1 478	1 292	1 465	1 368	1 211
Investment in hogs per farm- - - -	981	756	648	627	598
Investment in poultry per farm - -	130	166	144	135	151
Gross income per acre- - - - -	23.38	18.95	23.26	22.52	15.00
Operating cost per acre- - - - -	12.63	13.00	13.48	13.83	11.27
Net increase from crops per farm -	351	554	1 014	455	434
Miscellaneous income per farm- - -	63	92	99	134	67
Livestock income per farm- - - - -	4 218	3 428	3 633	3 869	2 608
Gross income per farm- - - - -	4 632	4 074	4 746	4 458	3 109
Cattle income per farm - - - - -	987	951	772	577	254
Dairy sales per farm - - - - -	600	629	906	887	797
Hog income per farm- - - - -	2 271	1 456	1 549	2 003	1 290
Poultry income per farm- - - - -	306	326	320	330	250
Average yield corn in bu.- - - - -	42	38	46	44	29
Average yield wheat in bu. - - - -	20	12	16	15	17

^{1/} Records from Green and Jersey counties, 1926, 1927, 1928 and 1929.

Jersey and Macoupin Counties - 1930

Item	Your farm	Average of 28 farms	10 most profitable farms	10 least profitable farms
Capital Investments--Land - - - - -		18 530	20 104	18 731
Farm Improvements - - - - -		3 090	3 863	2 600
Horses- - - - -		500	405	613
Cattle- - - - -		1 211	1 197	1 421
Hogs- - - - -		598	493	752
Sheep - - - - -		33	32	50
Bees- - - - -		27	69	6
Poultry - - - - -		151	136	125
Livestock--Total - - - - -		2 520	2 332	2 967
Machinery and Equipment- - - - -		1 692	1 890	1 680
Feed, grain and supplies - - - - -		1 924	1 815	1 990
Total Investment- - - - -	\$	\$27 756	\$30 004	\$28 028
<u>Receipts--Net Increases-</u> - - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		254	460	150
Hogs- - - - -		1 290	1 477	1 091
Sheep - - - - -		8	---	20
Bees- - - - -		9	25	1
Poultry - - - - -		84	92	70
Egg sales - - - - -		166	147	73
Dairy sales - - - - -		797	1 044	609
Livestock--Total - - - - -		2 608	3 245	2 014
Feed, grain and supplies - - - - -		434	1 167	61
Labor off farm - - - - -		64	87	65
Miscellaneous receipts - - - - -		3	4	2
Total Receipts--Net Increases - - - - -	\$	\$ 3 109	\$ 4 503	\$ 2 142
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		161	167	114
Horses- - - - -		44	23	66
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		455	463	492
Feed, grain and supplies- - - - -		---	---	---
Livestock expense - - - - -		33	43	13
Crop expense- - - - -		187	252	174
Hired labor - - - - -		294	357	353
Taxes - - - - -		258	253	291
Miscellaneous expenses- - - - -		30	27	33
Total Expenses--Net Decreases - - - - -	\$	\$ 1 462	\$ 1 535	\$ 1 536
Receipts Less Expenses- - - - -	\$	\$ 1 647	\$ 2 918	\$ 606
Total unpaid labor- - - - -		874	796	915
Operator's labor- - - - -		617	633	640
Family labor- - - - -		257	163	275
Net income from investment and management - - - - -		773	2 122	309
Rate earned on investment - - - - -	%	2.73	7.07	1.10
Return to capital and operator's labor and management - - - - -		1 390	2 755	331
5 percent of capital invested - - - - -		1 387	1 500	1 401
Labor and management wage - - - - -	\$	\$ 3	\$ 1 255	\$-1 070

Jersey and Macoupin Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operat-ing expense	Per acre	Per farm	
9.78	50	53	31	161	362	312	213	172	16	2.00	16	40	29	6 500	345
8.78	47	50	29	151	342	292	203	162	15	2.50	19	45	27	6 000	325
7.78	44	47	27	141	322	272	193	152	14	3.00	22	50	25	5 500	305
6.78	41	44	25	131	302	252	183	142	13	3.50	25	55	23	5 000	285
5.78	38	41	23	121	282	232	173	132	12	4.00	28	60	21	4 500	265
4.78	35	38	21	111	262	212	163	122	11	4.50	31	65	19	4 000	245
3.78	32	35	19	101	242	192	153	112	10	5.00	34	70	17	3 500	225
2.78	29	32	17	91	222	172	143	102	9	5.50	37	75	15	3 000	205
1.78	26	29	15	81	202	152	133	92	8	6.00	40	80	13	2 500	185
.78	23	26	13	71	182	132	123	82	7	6.50	43	85	11	2 000	165
-.22	20	23	11	61	162	112	113	72	6	7.00	46	90	9	1 500	145
-1.22	17	20	9	51	142	92	103	62	5	7.50	49	95	7	1 000	125
-2.22	14	17	7	41	122	72	93	52	4	8.00	52	100	5	500	105
-3.22	11	14	5	31	102	52	83	42	3	8.50	55	105	3	----	85
-4.22	8	11	3	21	82	32	73	32	2	9.00	58	110	1	----	65

Jersey and Macoupin Counties - 1930

Factors helping to analyze the farm business	Your farm	Average of 28 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -	_____	207	221	217
Percent of land area tillable - - -	_____	85%	91%	80%
Gross receipts per acre - - - - -	_____	15.00	20.39	9.86
Total expenses per acre - - - - -	_____	11.27	10.78	11.28
Net receipts per acre - - - - -	_____	3.73	9.61	1.42
Value of land per acre- - - - -	_____	89	91	86
Total investment per acre - - - - -	_____	134	136	129
Acres in Corn - - - - -	_____	62	67	66
Oats - - - - -	_____	20	31	15
Wheat- - - - -	_____	36	28	46
Soybeans - - - - -	_____	11	28	2
Crop yields--Corn, bu. per acre- - -	_____	29.4	29.0	29.0
Oats, bu. per acre- - -	_____	31.9	31.6	32.4
Wheat, bu. per acre - - -	_____	16.6	17.0	16.4
S. beans, bu. per acre- - -	_____	19.6	20.7	13.0
Value of feed fed to productive livestock- - - - -	_____	1 828	1 797	1 957
Returns per \$100 of feed fed to productive livestock - -	_____	143	181	103
Returns per \$100 invested in:				
All productive livestock- - -	_____	134	147	105
Cattle- - - - -	_____	91	113	66
Hogs- - - - -	_____	222	226	182
Poultry - - - - -	_____	172	176	120
Dairy sales per dairy cow - - - - -	_____	102	109	100
Investment in productive livestock per acre -	_____	9.37	10.02	8.82
Receipts from productive livestock per acre -	_____	12.59	14.70	9.27
Man labor cost per \$100 gross income- - - - -	_____	37	25	58
Man labor cost per acre - - - - -	_____	5.48	5.06	5.69
Value of feed fed to horses - - - - -	_____	306	302	263
Power and machinery cost per crop acre- - - - -	_____	5.43	4.72	5.40
Expenses per \$100 gross income- - -	_____	75	53	58
Machinery cost per acre - - - - -	_____	2.20	2.10	2.27
Farm improvements cost per acre	_____	.78	.76	.52
Farms with tractor- - - - -	_____	71%	70%	90%
Excess of sales over expenses - - -	_____	1 845	1 726	1 999
Decrease in inventory - - - - -	_____	198	1 192 Inc.	1 393

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings of those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per-unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1915, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1915 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.60 in 1920-1922 when the records from that county

Annual Farm Business Report

Mason County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, W. A. Gilbert, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Mason County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 33 farmers in Mason County who kept financial records in the Illinois farm account project for 1930 earned nothing as pay for the use of capital invested and for the management and risk of operating the business. In fact they show an average net loss of 3 tenths of one percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$367 a farm, the result is an average net loss of 1.3 percent. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$1223 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$106 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$148 an acre. The land and improvements exclusive of the residence averaged \$119 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For

*T. R. Isaacs, farm adviser in Mason County, cooperated in supervising and collecting the records on which this report is based.

1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$1352 while the surplus of sales over expenses was \$2102. For the more successful farms, the corresponding figures were \$572 reduction in inventory and \$2309 surplus of income over expense. For the less successful farms the figures were \$1258 reduction in inventory and \$983 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops, however, is stored, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$1954 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 5 acres difference in average size between the most profitable 11 farms and the least profitable 11 farms, the average size of all farms being 248 acres. The difference in percentage of tillable land was only 2 percent. Difference in acreage was not an important factor in the difference in income. Any advantage in larger size usually is a matter of more efficient use of labor, power and equipment and hence lower costs per acre on the larger farms. The big difference between these two groups, however, was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 shows a difference of \$1943.

One of the advantages of the more successful farms was that of larger crop yields. They produced $4\frac{1}{2}$ bushels more corn and $7\frac{1}{2}$ bushels more oats per acre than the less successful farms. There was no difference in the average yield of wheat. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 6 acres more corn, 2 acres more wheat, and 10 acres more oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$162 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$77. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$85 from each \$100 worth of feed on the most profitable 11 farms was an important factor in their larger net incomes. On over \$1150 worth of feed which was fed on the average farm in this area this advantage of \$85 a hundred amounts to a total of more than \$950 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$79 dairy sales per dairy cow as compared with \$58 per dairy cow on the less profitable farms. As to the amount of livestock, the more profitable farms had 33 percent more investment in livestock per acre. The farms covered by this report show only about one-third as much livestock per acre as is reported by accounting farms in counties west of the Illinois river.

The labor efficiency was higher on farms of the more successful group. They had 46 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$31 as compared with \$36 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 11 farms had an advantage of \$55 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was 41 cents higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group and they had less livestock to care for.

The situation is summed up in the gross receipts and expense per acre. The most profitable 11 farms had an average gross income of \$12.66 and an expense of \$9.39 an acre as compared with \$5.17 income and \$9.63 expense on the least profitable 11 farms. This resulted in an average net income of \$3.27 and a net loss of \$4.46 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Mason and nearby counties for the years 1929-1930. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In two years it has varied from nothing to \$1116.

Comparative Earnings and Investment Figures on Farms in Mason County for 1929-1930

Items	1929 ¹	1930
Numbers of farms - - - - -	52	33
Average size of farms, acres - - - - -	267	248
Average rate earned, to pay for management, risk and capital- - - - -	6.0%	-0.3%
Average labor and management wage- - - - -	\$1116	\$-1223
Average value of land per acre - - - - -	106	106
Average investment per acre- - - - -	149	148
Investment in livestock per farm - - - - -	2950	2061
Investment in cattle per farm- - - - -	1252	754
Investment in hogs per farm- - - - -	889	526
Investment in poultry per farm - - - - -	138	138
Gross income per acre- - - - -	19.02	9.36
Operating cost per acre- - - - -	10.07	9.80
Net increase from crops per farm - - - - -	1295	824
Miscellaneous income per farm- - - - -	59	67
Livestock income per farm- - - - -	3726	1434
Gross income per farm- - - - -	5080	2325
Cattle income per farm - - - - -	724	64
Dairy sales per farm - - - - -	301	354
Hog income per farm- - - - -	2353	822
Poultry income per farm- - - - -	301	194
Average yield corn in bu.- - - - -	43	24
Average yield wheat in bu. - - - - -	16	22

¹Records for Brown, Pike and Cass counties included for 1929.

Mason County, 1930

Item	Your farm	Average of 33 farms	11 most profitable farms	11 least profitable farms
<u>Capital Investments--Land</u> - - - - -		26,419	24,821	23,105
Farm Improvements - - - - -		3,335	3,078	3,213
Horses- - - - -		630	587	617
Cattle- - - - -		754	794	799
Hogs- - - - -		526	882	452
Sheep - - - - -		13	6	30
Bees- - - - -		---	---	---
Poultry - - - - -		138	129	179
Livestock--Total - - - - -		<u>2,061</u>	<u>2,398</u>	<u>2,077</u>
Machinery and equipment- - - - -		1,868	2,155	1,707
Feed, grain and supplies - - - - -		2,979	2,574	2,226
Total Investment- - - - -	\$	<u>\$36,662</u>	<u>\$35,026</u>	<u>\$32,328</u>
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		64	65	---
Hogs- - - - -		822	1,546	428
Sheep - - - - -		---	4	---
Bees- - - - -		---	---	---
Poultry - - - - -		94	68	131
Egg sales - - - - -		100	98	131
Dairy sales - - - - -		354	581	323
Livestock--Total - - - - -		<u>1,434</u>	<u>2,362</u>	<u>1,013</u>
Feed, grain and supplies - - - - -		824	757	242
Labor off farm - - - - -		47	91	28
Miscellaneous receipts - - - - -		20	28	12
Total Receipts--Net Increases - - - - -	\$	<u>\$ 2,325</u>	<u>\$ 3,238</u>	<u>\$ 1,295</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		167	163	178
Horses- - - - -		52	37	79
Miscellaneous livestock decreases		1	---	Cattle 1
<u>Sheep</u>		1	---	10
Machinery and equipment - - - - -		412	451	448
Feed, grain and supplies- - - - -		---	---	---
Livestock expense - - - - -		33	43	20
Crop expense- - - - -		213	213	138
Hired labor - - - - -		243	158	286
Taxes - - - - -		430	415	384
Miscellaneous expenses- - - - -		24	21	26
Total Expenses--Net Decreases- - - - -	\$	<u>\$ 1,575</u>	<u>\$ 1,501</u>	<u>\$ 1,570</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 750</u>	<u>\$ 1,737</u>	<u>\$ -275</u>
Total unpaid labor- - - - -		860	902	844
Operator's labor- - - - -		720	720	720
Family labor- - - - -		140	182	124
Net income from investment and management - - - - -		-110	835	-1,119
<u>Rate earned on investment</u> - - - - -	%	<u>-.30 %</u>	<u>2.38 %</u>	<u>-3.46 %</u>
Return to capital and operator's labor and management		610	1,555	-399
5 percent of capital invested - - - - -		1,833	1,751	1,616
Labor and management wage - - - - -	\$	<u>\$-1,223</u>	<u>\$ -196</u>	<u>\$-2,015</u>

Mason County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operat- ing expense	Per acre	Per farm	
6.70	45	48	36	128	308	290	192	131	12	.25	32	70	23	6 000	390
5.70	42	45	34	118	288	270	182	121	11	.75	34	75	21	5 500	370
4.70	39	42	32	108	268	250	172	111	10	1.25	36	80	19	5 000	350
3.70	36	39	30	98	248	230	162	101	9	1.75	38	85	17	4 500	330
2.70	33	36	28	88	228	210	152	91	8	2.25	40	90	15	4 000	310
1.70	30	33	26	78	208	190	142	81	7	2.75	42	95	13	3 500	290
.70	27	30	24	68	188	170	132	71	6	3.25	44	100	11	3 000	270
-1.30	24	27	22	58	168	150	122	61	5	3.75	46	105	9	2 500	250
-1.30	21	24	20	48	148	130	112	51	4	4.25	48	110	7	2 000	230
-2.30	18	21	18	38	128	110	102	41	3	4.75	50	115	5	1 500	210
-3.30	15	18	16	28	108	90	92	31	2	5.25	52	120	3	1 000	190
-4.30	12	15	14	18	88	70	82	21	1	5.75	54	125	1	500	170
-5.30	9	12	12	8	68	50	72	11	---	6.25	56	130	---	---	150
-6.30	6	9	10	---	48	30	62	1	---	6.75	58	135	---	---	130
-7.30	3	6	8	---	28	10	52	---	---	7.25	60	140	---	---	110

Mason County, 1930

Factors helping to analyze the farm business	Your farm	Average of 33 farms	11 most profitable farms	11 least profitable farms
Size of farm--acres - - - - -		248	256	251
Percent of land area tillable - - - - -		35%	34%	32%
Gross receipts per acre - - - - -		9.36	12.66	5.17
Total expenses per acre - - - - -		9.80	9.39	9.63
Net receipts per acre - - - - -		-.44	3.27	-4.46
Value of land per acre- - - - -		106	97	92
Total investment per acre - - - - -		148	137	129
Acres in Corn - - - - -		74	80	74
Oats - - - - -		22	25	15
Wheat- - - - -		65	59	57
Cow peas - - - - -		1	4	4
Soybeans - - - - -		9	10	10
Crop yields--Corn, bu. per acre - - - - -		24.1	25.4	20.7
Oats, bu. per acre - - - - -		27.3	28.5	21.0
Wheat, bu. per acre- - - - -		21.6	19.7	19.7
Value of feed fed to productive livestock- - - - -		1,179	1,455	1,298
Returns per \$100 of feed fed to productive livestock - - - - -		122	162	77
Returns per \$100 invested in:				
All productive livestock- - - - -		106	133	79
Cattle- - - - -		58	83	44
Hogs- - - - -		168	177	120
Poultry - - - - -		151	130	166
Dairy sales per dairy cow - - - - -		61	79	58
Investment in productive livestock per acre - - - - -		5.43	6.97	5.05
Receipts from productive livestock per acre - - - - -		5.77	9.24	4.00
Man labor cost per \$100 gross income- - - - -		46	31	86
Man labor cost per acre - - - - -		4.33	3.97	4.43
Value of feed fed to horses - - - - -		269	262	258
Power and machinery cost per crop acre- - - - -		3.73	3.73	4.14
Expenses per \$100 gross income- - - - -		105	74	186
Machinery cost per acre - - - - -		1.66	1.76	1.79
Farm improvements cost per acre - - - - -		.67	.64	.71
Farms with tractor- - - - -		66%	32%	55%
Excess of sales over expenses - - - - -		2,102	2,309	983
Decrease in inventory - - - - -		1,352	572	1,258

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Morgan County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Morgan County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 41 farmers in Morgan County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.1 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management in this case amounting to \$420 a farm, there remains a rate of 1.1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$529 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$136 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$183 an acre. The land and improvements exclusive of the residence averaged \$153 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of *I. E. Parrett, farm adviser in Morgan County, cooperated in supervising and collecting the records on which this report is based.

other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$887 while the surplus of sales over expenses was \$2607. For the more successful farms, the corresponding figures were \$111 increase in inventory and \$2756 surplus of income over expense. For the less successful farms the figures were \$1529 reduction in inventory and \$2174 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops, however, is stored, the small grains, especially wheat, being marketed before inventory date on many farms. The relatively large decrease in inventories on the less profitable farms is accounted for in three facts. First, these farms averaged nearly 900 bushels a farm less corn at the end of the year than at the beginning. Second, they also had a decrease in numbers of hogs on hand. Third, they had more livestock on which to suffer the decline in values which occurred in 1930. The small increase in inventories on the more profitable farms was due chiefly to an increase in numbers of hogs on hand at the close of the year.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2245 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 17 acres difference in average size be-

tween the most profitable 14 farms and the least profitable 14 farms, the average size of all farms being 230 acres. The difference in percentage of tillable land was 12 percent. Difference in acreage was not an important factor in the difference in income. In fact, reports of this kind have often shown the more successful farms somewhat smaller. It is probable that the extra 41 acres of tillable land which the more successful farms averaged did give some advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 showed a difference of \$1656.

One of the advantages of the more successful farms was that of larger crop yields. They produced $3\frac{1}{2}$ bushels more corn and 4 bushels more oats per acre than the less successful farms. This is less than the usual difference found in studies of this kind. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 15 acres more corn, 20 acres more wheat, and 3 acres more oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operator of these farms secured \$153 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$115. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$38 from each \$100 worth of feed on the most profitable 14 farms was an important factor in their larger net incomes. On over \$2000 worth of feed which was fed on the average farm in this area this advantage of \$38 a hundred amounts to a total of more than \$750 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs, separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$70 dairy sales per dairy cow as compared with \$30 per dairy cow on the less profitable farms. The less successful farms had about 30 percent more livestock per acre as measured by the livestock investment but since they secured no margin of profit on feed fed the extra livestock was no advantage.

The labor efficiency was much higher on farms of the more successful group. They had 1.24 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$27 as compared with \$50 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 14 farms had an advantage of \$23 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.00 higher on the less successful farms. This higher cost is at least partly explained by the larger amount of livestock and smaller crop acreage on the less successful farms but there is no evidence of the corresponding return to offset the extra cost.

The situation is summed up in the gross receipts and expenses per acre. The most profitable 14 farms had an average gross income of \$18.40 and an expense of \$9.94 an acre as compared with \$12.33 income and \$13.33 expense on the least profitable 14 farms. This resulted in an average net income of \$8.46 and a net loss of \$1.00 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Morgan County for 1929 and 1930. The rate earned dropped sharply for 1930. This is in spite of the fact that land values were reduced about \$15-an acre from the 1929 average. It is interesting to note that the average operating cost per acre dropped only slightly but the gross income per acre was almost cut in half. There was a very severe drop in the average income from crops and from hogs with smaller decreases in other enterprises. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage for the two years. It dropped in one year from \$1733 to nothing.

Comparative Earnings and Investment Figures on Farms in
Morgan County for 1929 and 1930

Items	1929	1930
Numbers of farms - - - - -	31	41
Average size of farms, acres - - - - -	242	230
Average rate earned, to pay for management, risk and capital- - - - -	7.1%	2.1%
Average labor and management wage- - - - -	\$1733	\$-529
Average value of land per acre - - - - -	151	136
Average investment per acre- - - - -	198	183
Investment in livestock per farm - - - - -	2879	2691
Investment in cattle per farm- - - - -	1149	1039
Investment in hogs per farm- - - - -	1054	963
Investment in poultry per farm - - - - -	137	138
Gross income per acre- - - - -	25.50	14.84
Operating cost per acre- - - - -	11.36	11.06
Net increase from crops per farm - - - - -	2173	629
Miscellaneous income per farm- - - - -	67	96
Livestock income per farm- - - - -	3930	2681
Gross income per farm- - - - -	6170	3406
Cattle income per farm - - - - -	729	283
Dairy sales per farm - - - - -	255	204
Hog income per farm- - - - -	2629	1997
Poultry income per farm- - - - -	274	185
Average yield corn in bu.- - - - -	49	34
Average yield oats in bu.- - - - -	41	34

Morgan County, 1930

Item	Your farm	Average of 41 farms	14 most profitable farms	14 least profitable farms
Capital Investments--Land - - - - -		31 220	29 760	31 178
Farm Improvements - - - - -		3 959	3 236	4 154
Horses- - - - -		435	434	390
Cattle- - - - -		1 039	951	1 083
Hogs- - - - -		963	732	1 103
Sheep - - - - -		116	74	172
Bees- - - - -		---	---	---
Poultry - - - - -		138	151	137
Livestock--Total - - - - -		<u>2 691</u>	<u>2 342</u>	<u>2 885</u>
Machinery and equipment- - - - -		1 566	1 473	1 459
Feed, grain and supplies - - - - -		2 594	2 423	2 563
Total Investment- - - - -	\$	<u>\$42 030</u>	<u>\$ 39 234</u>	<u>\$ 42 239</u>
<u>Receipts--Net Increases</u> - - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		283	207	276
Hogs- - - - -		1 997	1 662	2 050
Sheep - - - - -		12	16	3
Bees- - - - -		---	---	---
Poultry - - - - -		49	49	60
Egg sales - - - - -		136	156	165
Dairy sales - - - - -		204	362	109
Livestock--Total - - - - -		<u>2 681</u>	<u>2 452</u>	<u>2 663</u>
Feed, grain and supplies - - - - -		629	1 804	---
Labor off farm - - - - -		84	122	69
Miscellaneous receipts - - - - -		12	22	12
Total Receipts--Net Increases - - -	\$	<u>\$ 3 406</u>	<u>\$ 4 400</u>	<u>\$ 2 744</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		195	162	253
Horses- - - - -		25	18	58
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		410	374	369
Feed, grain and supplies- - - - -		---	---	214
Livestock expense - - - - -		48	38	58
Crop expense- - - - -		199	145	216
Hired labor - - - - -		432	410	552
Taxes - - - - -		344	355	343
Miscellaneous expenses- - - - -		33	31	36
Total Expenses--Net Decreases - - -	\$	<u>\$ 1 686</u>	<u>\$ 1 533</u>	<u>\$ 2 099</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 1 720</u>	<u>\$ 2 867</u>	<u>\$ 645</u>
Total unpaid labor- - - - -		852	844	867
Operator's labor- - - - -		704	699	694
Family labor- - - - -		148	145	173
Net income from investment and management		868	2 023	-222
Rate earned on investment - - - - -	%	<u>2.07%</u>	<u>5.16%</u>	<u>-.53%</u>
Return to capital and operator's labor and management		1 572	2 722	472
5 percent of capital invested		2 101	1 962	2 112
Labor and management wage - - - - -	\$	<u>\$ -529</u>	<u>\$ 760</u>	<u>\$ -1 640</u>

Morgan County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm	
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm		
9	55	55	38	123	365	279	200	120	16	.65	22	40	36	10	500	370
8	52	52	36	113	345	259	190	110	15	1.15	24	45	33	9	500	350
7	49	49	34	103	325	239	180	100	14	1.65	26	50	30	8	500	330
6	46	46	32	93	305	219	170	90	13	2.15	28	55	27	7	500	310
5	43	43	30	83	285	199	160	80	12	2.65	30	60	24	6	500	290
4	40	40	28	73	265	179	150	70	11	3.15	32	65	21	5	500	270
3	37	37	26	63	245	159	140	60	10	3.65	34	70	18	4	500	250
2	34	34	24	53	225	139	130	50	9	4.15	36	75	15	3	500	230
1	31	31	22	43	205	119	120	40	8	4.65	38	80	12	2	500	210
0	28	28	20	33	185	99	110	30	7	5.15	40	85	9	1	500	190
-1	25	25	18	23	165	79	100	20	6	5.65	42	90	6	500	170	
-2	22	22	16	13	145	59	90	10	5	6.15	44	95	3	---	---	150
-3	19	19	14	3	125	39	80	---	4	6.65	46	100	---	---	---	130
-4	16	16	12	---	105	19	70	---	3	7.15	48	105	---	---	---	110
-5	13	13	10	---	85	---	60	---	2	7.65	50	110	---	---	---	90

Morgan County, 1930

Factors helping to analyze the farm business	Your farm	Average of 41 farms	14 most profitable farms	14 least profitable farms
Size of farm--acres - - - - -	_____	230	239	222
Percent of land area tillable - - -	_____	81.6	88.2	75.9
Gross receipts per acre - - - - -	_____	14.84	18.40	12.33
Total expenses per acre - - - - -	_____	11.06	9.94	13.33
Net receipts per acre - - - - -	_____	3.78	8.46	-1.00
Value of land per acre- - - - -	_____	136	124	140
Total investment per acre - - - - -	_____	183	164	190
Acres in Corn - - - - -	_____	74	82	67
Oats - - - - -	_____	19	22	19
Wheat- - - - -	_____	48	60	40
Soybeans. - - - - -	_____	10	11	8
Crop yields--Corn, bu. per acre- - -	_____	33.8	35.2	31.6
Oats, bu. per acre- - -	_____	34.2	36.2	32.4
Wheat, bu. per acre- - -	_____	23.9	23.9	25.9
S. beans, bu. per acre - - -	_____	15.7	18.3	14.8
Value of feed fed to productive livestock - - - - -	_____	2049	1599	2315
Returns per \$100 of feed fed to productive livestock- - -	_____	131	153	115
Returns per \$100 invested in:				
All productive livestock - - -	_____	131	134	119
Cattle - - - - -	_____	53	65	40
Hogs - - - - -	_____	225	222	210
Poultry- - - - -	_____	139	145	157
Dairy sales per dairy cow - - - - -	_____	51	70	30
Investment in productive livestock per acre- - -	_____	8.90	7.68	10.03
Receipts from productive livestock per acre- - -	_____	11.68	10.26	11.97
Man labor cost per \$100 gross income - - - - -	_____	36	27	50
Man labor cost per acre - - - - -	_____	5.38	4.94	6.18
Value of feed fed to horses - - - - -	_____	257	246	217
Power and machinery cost per crop acre - - - - -	_____	4.14	3.31	4.31
Expenses per \$100 gross income- - -	_____	75	54	108
Machinery cost per acre- - - - -	_____	1.79	1.56	1.66
Farm improvements cost per acre	_____	.85	.68	1.14
Farms with tractor- - - - -	_____	75%	86%	65%
Excess of sales over expenses - - -	_____	2607	2756	2174
Decrease in inventory - - - - -	_____	887	Inc. 111	1529

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.39 in 1920-1922 when the records from that county

Annual Farm Business Report

Pike, Brown, Menard and Cass Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, L. Wright, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Pike, Brown, Menard and Cass counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 52 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$373 a farm, there remains a rate of 1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$446 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$105 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$153 an acre. The land and improvements exclusive of the residence averaged \$122 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump

*W. B. Bunn, W. E. Foard, L. W. Chalcraft and G. H. Husted, farm advisers in Pike, Brown, Menard and Cass counties, respectively, cooperated in supervising and collecting the records on which this report is based.

in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$515 while the surplus of sales over expenses was \$2119. For the more successful farms, the corresponding figures were \$117 reduction in inventory and \$3117 surplus of income over expense. For the less successful farms the figures were \$1091 reduction in inventory and \$1299 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion, however, of the corn and hay crops is stored, the small grains, especially wheat, being marketed before inventory date on many farms. The relatively larger inventory decreases on the less successful farms are largely explained by two facts; first, they had a smaller amount of grain on hand at the end than at the beginning of the year, and second, they had larger numbers of cattle than farms of the more successful group. Cattle values slumped more during the year than did hogs.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2777 a farm.

The most profitable 17 farms averaged 51 acres larger than the least profitable 17 farms. This gave the first group some advantage in securing lower costs per

acre for labor, power, and equipment. Larger size gives no advantage in gross income per acre, however, and between the two groups the difference in gross income per acre is greater than the difference in expense. The difference in gross income per farm in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule.

As a rule, one of the important advantages of the more successful farms is that of larger crop yields. In this case, however, the difference in crop yields between the two groups is very slight. The more profitable farms had larger yields of corn, but the less profitable farms had the advantage in oats and wheat. The cost per acre for production usually does not increase in proportion to the increase in yield, since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged .31 acres more corn, .14 acres more oats, and .9 acres less wheat.

On the more profitable farms the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$159 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$99. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$60 from each \$100 worth of feed on the most profitable 17 farms was an important factor in their larger net incomes. On over \$2850 worth of feed which was fed on the average farm in this area this advantage of \$60 a hundred amounts to a total of more than \$1700 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs, separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$66 dairy sales per dairy cow as compared with \$62 per dairy cow on the less profitable farms. Dairying is a minor enterprise on these farms, however. As to the amount of livestock, the less successful farms had about 17 percent larger investment in livestock per acre. Since the livestock on these farms scarcely returned the value of the feed fed to them the extra livestock was a handicap rather than an advantage.

The labor efficiency was higher on farms of the more successful group. They had 79 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$24 as compared with \$42 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 17 farms had an advantage of \$18 for each \$100 of incomes.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$1.12 higher on the less successful farms. There is no evidence of a corresponding return for this extra cost.

The situation is summed up in the gross receipts and expense per acre. The most profitable 17 farms had an average gross income of \$18.92 and an expense of \$11.36 an acre as compared with \$12.78 income and \$15.79 expense on the least profitable 17 farms. This resulted in an average net income of \$7.56 and a net loss of \$3.01 an acre respectively.

The following table presents some comparative investment and earnings data on accounting farms in Pike, Brown, Cass and adjoining counties for the period 1928-1930 inclusive. The rate earned was lowest for 1930. The livestock income per farm has

remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In three years it has varied from nothing to \$1116. The relatively high operating expense per acre in 1930 is due chiefly to larger net feed purchases as compared with the two preceding years.

Comparative Earnings and Investment Figures on Farms in Pike, Brown, Cass
and Adjoining Counties for 1928-1930

Items	1928 ¹	1929 ²	1930
Numbers of farms- - - - -	62	52	52
Average size of farms, acres- - - - -	240	267	244
Average rate earned, to pay for management, risk and capital- - - - -	5.3%	6.0%	2.0%
Average labor and management wage - - - - -	\$792	\$1116	\$1446
Average value of land per acre- - - - -	128	106	105
Average investment per acre - - - - -	174	149	153
Investment in livestock per farm- - - - -	2923	2950	3804
Investment in cattle per farm - - - - -	1214	1252	1942
Investment in hogs per farm - - - - -	963	889	1044
Investment in poultry per farm- - - - -	124	138	153
Gross income per acre - - - - -	20.49	19.03	16.21
Operating cost per acre - - - - -	11.32	10.07	13.18
Net increase from crops per farm- - - - -	1184	1295	---
Miscellaneous income per farm - - - - -	74	59	64
Livestock income per farm - - - - -	3665	3726	3883
Gross income per farm - - - - -	4923	5080	3947
Cattle income per farm- - - - -	1038	724	680
Dairy sales per farm- - - - -	222	301	302
Hog income per farm - - - - -	2117	2353	2654
Poultry income per farm - - - - -	239	301	218
Average yield corn in bu. - - - - -	48	43	33
Average yield oats in bu. - - - - -	38	36	29

1. Records from Morgan and Mason counties included for 1928
2. Records from Mason county included for 1929

Pike, Brown, Menard, and Cass Counties - 1930

Item	Your farm	Average of 52 farms	17 most profitable farms	17 least profitable farms
Capital Investments--Land		25 615	25 238	23 569
Farm Improvements		4 078	4 317	4 215
Horses		547	438	595
Cattle		1 942	2 090	2 471
Hogs		1 044	1 301	939
Sheep		107	126	151
Bees		11	9	14
Poultry		153	127	174
Livestock--Total		3 804	4 091	4 344
Machinery and equipment		1 526	1 377	1 517
Feed, grain and supplies		2 273	2 453	2 015
Total Investment	\$	\$ 37 296	\$ 37 476	\$ 35 660
Receipts--Net Increases				
Horses		---	---	---
Cattle		680	1 072	426
Hogs		2 654	3 590	1 832
Sheep		29	29	18
Bees		---	---	---
Poultry		59	38	21
Egg sales		159	117	192
Dairy sales		302	317	351
Livestock--Total		3 883	5 163	2 840
Feed, grain and supplies		---	---	---
Labor off farm		54	66	41
Miscellaneous receipts		10	19	4
Total Receipts--Net Increases	\$	\$ 3 947	\$ 5 248	\$ 2 885
Expenses--Net Decreases				
Farm Improvements		280	223	304
Horses		27	15	32
Miscellaneous livestock decreases		2	---	2
Bees		---	---	---
Machinery and equipment		434	364	367
Feed, grain and supplies		565	658	1 015
Livestock expense		68	69	73
Crop expense		207	167	199
Hired labor		397	388	349
Taxes		330	335	304
Miscellaneous expenses		33	29	32
Total Expenses--Net Decreases	\$	\$ 2 343	\$ 2 248	\$ 2 677
Receipts Less Expenses	\$	\$ 1 604	\$ 3 000	\$ 208
Total unpaid labor		866	903	888
Operator's labor		681	676	653
Family labor		185	227	235
Net income from investment and management		738	2 097	680
Rate earned on investment	%	1.98 %	5.60 %	-1.91 %
Return to capital and operator's labor and management		1 419	2 773	27
5 percent of capital invested		1 865	1 874	1 783
Labor and management wage	\$	\$ - 446	\$ 899	\$ -1 810

Pike, Brown, Menard and Cass Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross Receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operat- ing expense	Per acre	Per farm	
9	54	51	36	124	398	292	206	129	20	1.25	10	45	30	7 500	385
8	51	48	34	114	378	272	196	119	19	1.75	13	50	28	7 000	365
7	48	45	32	104	358	252	186	109	18	2.25	16	55	26	6 500	345
6	45	42	30	94	338	232	176	99	17	2.75	19	60	24	6 000	325
5	42	39	28	84	318	212	166	89	16	3.25	22	65	22	5 500	305
4	39	36	26	74	298	192	156	79	15	3.75	25	70	20	5 000	285
3	36	33	24	64	278	172	146	69	14	4.25	28	75	18	4 500	265
2	33	30	22	54	258	152	136	59	13	4.75	31	80	16	4 000	245
1	30	27	20	44	238	132	126	49	12	5.25	34	85	14	3 500	225
0	27	24	18	34	218	112	116	39	11	5.75	37	90	12	3 000	205
- 1	24	21	16	24	198	92	106	29	10	6.25	40	95	10	2 500	185
- 2	21	18	14	14	178	72	96	19	9	6.75	43	100	8	2 000	165
- 3	18	15	12	4	158	52	86	9	8	7.25	46	105	6	1 500	145
- 4	15	12	10	--	138	32	76	--	7	7.75	49	110	4	1 000	125
- 5	12	9	8	--	118	12	66	--	6	8.25	52	115	2	500	105

Pike, Brown, Menard, and Cass Counties - 1930

Factors helping to analyze the farm business	Your farm	Average of 52 farms	17 most profitable farms	17 least profitable farms
Size of farm--acres - - - - -	_____	244	277	226
Percent of land area tillable - - -	_____	79%	75%	77%
Gross receipts per acre - - - - -	_____	16.21	18.92	12.78
Total expenses per acre - - - - -	_____	13.18	11.36	15.79
Net receipts per acre - - - - -	_____	3.03	7.56	3.01
Value of land per acre- - - - -	_____	105	91	104
Total investment per acre - - - - -	_____	153	135	158
Acres in Corn - - - - -	_____	68	85	54
Oats - - - - -	_____	25	30	16
Wheat- - - - -	_____	30	22	31
Barley - - - - -	_____	2	2	3
Soybeans - - - - -	_____	2	1	3
Crop yields--Corn, bu. per acre- - -	_____	32.8	33.7	30.0
Oats, bu. per acre- - -	_____	29.4	25.1	26.4
Wheat, bu. per acre - - -	_____	22.5	16.3	23.5
Value of feed fed to productive livestock- - - - -	_____	2 852	3 257	2 878
Returns per \$100 of feed fed to productive livestock - - -	_____	136	159	99
Returns per \$100 invested in:				
All productive livestock- - -	_____	125	145	84
Cattle- - - - -	_____	54	71	35
Hogs- - - - -	_____	258	264	216
Poultry - - - - -	_____	152	131	139
Dairy sales per dairy cow - - - - -	_____	59	66	62
Investment in productive livestock per acre - - -	_____	12.72	12.81	15.00
Receipts from productive livestock per acre - - -	_____	15.94	18.61	12.57
Man labor cost per \$100 gross income- - - - -	_____	31	24	42
Man labor cost per acre - - - - -	_____	5.06	4.55	5.34
Value of feed fed to horses - - - - -	_____	259	247	245
Power and machinery cost per crop acre- - - - -	_____	4.76	3.80	4.92
Expenses per \$100 gross income- - - - -	_____	81	60	124
Machinery cost per acre - - - - -	_____	1.78	1.31	1.63
Farm improvements cost per acre	_____	1.15	.80	1.35
Farms with tractor- - - - -	_____	67%	71%	53%
Excess of sales over expenses - - - - -	_____	2 119	3 117	1 299
Decrease in inventory - - - - -	_____	515	117	1 091

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm, should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

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In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1915, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1915 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Sangamon County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Sangamon County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 36 farmers in Sangamon County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 1.9 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$540 a farm, there remains a rate of 9 tenths of 1 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$962 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$154 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$203 an acre. The land and improvements exclusive of the residence averaged \$172 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.3 percent, and for 1930, 1900

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companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$1179 while the surplus of sales over expenses was \$3037. For the more successful farms, the corresponding figures were \$442 reduction in inventory and \$3475 surplus of income over expense. For the less successful farms the figures were \$1797 reduction in inventory and \$2480 surplus of income over expenses. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops, however, is stored, the small grains, especially wheat, being marketed before inventory date on many farms. The smaller decrease in inventory on the more successful farms is partly explained by the fact that they had a smaller decrease in quantity of feed and grain between the beginning and the end of the year than did the more successful farms. The more successful farms also had an increase in value of machinery and equipment during the year due to the purchase of more equipment.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this re-

port is very significant, however, since the difference in net income amounts to \$2401 a farm.

The most profitable 12 farms averaged 48 acres larger than the least profitable 12 farms which gave the first group some advantage in opportunity to reduce the cost per acre for labor, power and equipment. This is the fourth annual farm business report for Sangamon County and it is interesting to note that two reports have shown the most profitable group of farms larger and two have shown the most profitable farms smaller in size. Difference in acreage probably is not a very important factor in the difference in earnings when farms run as large as those represented in this report. The big difference between the two groups was in income and not in expense and larger size gives no advantage toward larger gross income per acre. The difference in gross income per farm in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule.

One of the important advantages of the more successful farms was that of larger crop yields. They produced 5 bushels more corn, 13 bushels more oats, and $5\frac{1}{2}$ bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 34 acres more corn, 5 acres more oats and 9 acres less wheat.

On the more profitable farms one of the larger advantages was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$136 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$115. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms, but the additional 21 from each \$100 worth of feed on the most profitable 12 farms was an important factor in their larger net incomes. On over \$2650 worth of feed which was fed on the average farm in this area this advantage of \$21 a hundred amounts to a total of more than \$550 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs, separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$93 dairy sales per dairy cow as compared with \$83 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference, each of them having about \$11 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was higher on farms of the more successful group. They had 24 cents an acre less labor cost. Due to their larger incomes from slightly less labor their labor cost per \$100 income was only \$28 as compared with \$50 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 12 farms had an advantage of \$22 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was 23 cents higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group. The small difference in cost however probably is explained in the smaller size of these farms.

The situation is summed up in the gross receipts and expense per acre. The most profitable 12 farms had an average gross income of \$21.05 and an expense of \$12.96 an acre as compared with \$12.44 income and \$13.14 expense on the least profit-

able 12 farms. This resulted in an average net income of \$3.07 and a net loss of 70 cents an acre respectively.

The following table presents some comparative investment and earnings data on accounting farms in Sangamon County for the period 1927-1930. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$20 an acre in the four year period and were lowest in 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In four years it has varied from nothing to \$1032.

Comparative Earnings and Investment Figures on Farms in
Sangamon County for 1927-1930

Items	1927	1928	1929	1930
Numbers of farms - - - - -	26	38	33	36
Average size of farms, acres - - - -	255	280	246	266
Average rate earned, to pay for management, risk and capital - -	2.8%	5.0%	5.6%	1.9%
Average labor and management wage - -	\$515	\$676	\$1032	\$962
Average value of land per acre - - -	175	172	166	154
Average investment per acre - - - - -	219	215	215	203
Investment in livestock per farm - - -	3090	3409	3359	3542
Investment in cattle per farm - - - -	1002	1395	1550	1520
Investment in hogs per farm - - - - -	1069	1051	961	1079
Investment in poultry per farm - - - -	122	113	131	125
Gross income per acre - - - - -	18.27	22.62	24.92	16.40
Operating cost per acre - - - - -	12.12	11.96	12.79	12.49
Net increase from crops per farm - - -	1284	2091	2004	723
Miscellaneous income per farm - - - -	96	107	57	95
Livestock income per farm - - - - -	3290	4136	4070	3542
Gross income per farm - - - - -	4670	6334	6131	4360
Cattle income per farm - - - - -	754	1279	886	645
Dairy sales per farm - - - - -	382	431	528	365
Hog income per farm - - - - -	1859	2095	2289	2260
Poultry income per farm - - - - -	222	210	259	204
Average yield corn in bu. - - - - -	41	47	50	34
Average yield wheat in bu. - - - - -	16	18	21	23

Sangamon County, 1930

Item	Your farm	Average of 36 farms	12 most profitable farms	12 least profitable farms
Capital Investments--Land- - - - -		41 017	44 220	34 010
Farm Improvements- - - - -		4 709	5 573	4 199
Horses - - - - -		624	738	514
Cattle - - - - -		1 520	1 806	1 725
Hogs - - - - -		1 079	1 325	780
Sheep- - - - -		187	82	103
Bees - - - - -		7	7	---
Poultry- - - - -		125	97	140
Livestock--Total- - - - -		3 542	4 055	3 262
Machinery and equipment - - - - -		1 631	1 578	1 498
Feed, grain and supplies- - - - -		3 091	3 117	2 696
Total Investment - - - - -	\$	\$ 53 990	\$ 58 543	\$ 45 665
<u>Receipts--Net Increases</u>				
Horses - - - - -		---	---	---
Cattle - - - - -		645	941	517
Hogs - - - - -		2 260	2 966	1 414
Sheep- - - - -		63	35	28
Bees - - - - -		5	3	---
Poultry- - - - -		75	68	82
Egg sales- - - - -		129	101	182
Dairy sales- - - - -		365	467	391
Livestock--Total- - - - -		3 542	4 581	2 614
Feed, grain and supplies- - - - -		723	1 189	198
Labor off farm- - - - -		71	65	47
Miscellaneous receipts- - - - -		24	4	8
Total Receipts--Net Increases- - - - -	\$	\$ 4 360	\$ 5 839	\$ 2 867
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		319	331	317
Horses - - - - -		27	45	46
Miscellaneous livestock decreases		---	---	---
Machinery and equipment- - - - -		521	493	466
Feed, grain and supplies - - - - -		---	---	---
Livestock expense- - - - -		68	84	58
Crop expense - - - - -		292	360	206
Hired labor- - - - -		689	904	615
Taxes- - - - -		498	549	450
Miscellaneous expenses - - - - -		38	40	26
Total Expenses--Net Decreases- - - - -	\$	\$ 2 452	\$ 2 806	\$ 2 184
Receipts Less Expenses - - - - -	\$	\$ 1 908	\$ 3 033	\$ 683
Total unpaid labor - - - - -		868	793	844
Operator's labor - - - - -		698	720	654
Family labor - - - - -		170	73	190
Net income from investment and management- - - - -		1 040	2 240	-161
Rate earned on investment- - - - -	%	1.93 %	3.83 %	-.35 %
Return to capital and operator's labor and management- - - - -		1 738	2 960	493
5 percent of capital invested- - - - -		2 700	2 927	2 283
Labor and management wage- - - - -	\$	\$ -962	\$ 33	\$ -1 790

Sangamon County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm	
8.93	55	58	37	144	362	307	202	150	17	.80	21	41	37	8 000	405
7.93	52	55	35	134	342	287	192	140	16	1.30	23	46	34	7 500	385
6.93	49	52	33	124	322	267	182	130	15	1.80	25	51	31	7 000	365
5.93	46	49	31	114	302	247	172	120	14	2.30	27	56	28	6 500	345
4.93	43	46	29	104	282	227	162	110	13	2.80	29	61	25	6 000	325
3.93	40	43	27	94	262	207	152	100	12	3.30	31	66	22	5 500	305
2.93	37	40	25	84	242	187	142	90	11	3.80	33	71	19	5 000	285
1.93	34	37	23	74	222	167	132	80	10	4.30	35	76	16	4 500	265
.93	31	34	21	64	202	147	122	70	9	4.80	37	81	13	4 000	245
-1.07	28	31	19	54	182	127	112	60	8	5.30	39	86	10	3 500	225
-1.07	25	28	17	44	162	107	102	50	7	5.80	41	91	7	3 000	205
-2.07	22	25	15	34	142	87	92	40	6	6.30	43	96	4	2 500	185
-3.07	19	22	13	24	122	67	82	30	5	6.80	45	101	1	2 000	165
-4.07	16	19	11	14	102	47	72	20	4	7.30	47	106	---	1 500	145
-5.07	13	16	9	4	82	27	62	10	3	7.80	49	111	---	1 000	125

Sangamon County, 1930

Factors helping to analyze the farm business	Your farm	Average of 36 farms	12 most profitable farms	12 least profitable farms
Size of farm--acres - - - - -		265	278	230
Percent of land area tillable - - - - -		89.1	90.4	83.2
Gross receipts per acre - - - - -		16.40	21.03	12.44
Total expenses per acre - - - - -		12.49	12.96	13.14
Net receipts per acre - - - - -		3.91	8.07	-0.70
Value of land per acre- - - - -		154	159	148
Total investment per acre - - - - -		203	211	198
Acres in Corn - - - - -		94	111	77
Oats - - - - -		30	29	24
Wheat- - - - -		40	32	41
Soybeans - - - - -		14	21	8
Crop yields--Corn, bu. per acre- - - - -		33.7	35.6	30.2
Oats, bu. per acre- - - - -		36.7	41.7	29.0
Wheat, bu. per acre - - - - -		23.2	27.0	21.5
S. beans, bu. per acre - - - - -		20.4	21.9	19.7
Value of feed fed to productive livestock- - - - -		2680	3362	2268
Returns per \$100 of feed fed to productive livestock - - - - -		132	136	115
Returns per \$100 invested in:				
All productive livestock- - - - -		133	147	108
Cattle- - - - -		74	88	62
Hogs- - - - -		222	223	197
Poultry - - - - -		167	174	202
Dairy sales per dairy cow - - - - -		79	93	83
Investment in productive livestock per acre - - - - -		10.00	11.23	10.48
Receipts from productive livestock per acre - - - - -		13.32	16.49	11.35
Man labor cost per \$100 gross income- - - - -		35	28	50
Man labor cost per acre - - - - -		5.73	5.98	6.22
Value of feed fed to horses - - - - -		325	371	300
Power and machinery cost per crop acre - - - - -		4.30	4.36	4.64
Expenses per \$100 gross income- - - - -		76	62	105
Machinery cost per acre - - - - -		1.96	1.78	2.02
Farm improvements cost per acre - - - - -		1.20	1.19	1.38
Farms with tractor- - - - -		64%	67%	50%
Excess of sales over expenses - - - - -		3087	3475	2480
Decrease in inventory - - - - -		1179	442	1797

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 17% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wares have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$25.00 in 1920-1922 when the records from that county

Annual Farm Business Report

Scott County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, L. W. Wright, and H. C. M. Case*

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The 30 farmers in Scott County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2.7 percent on their total farm investments. A wage of \$60 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$326 a farm, there remains a rate of 1.7 percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$70 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$100 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$140 an acre. The land and improvements exclusive of the residence averaged \$114 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported

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On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the differences in net income amounts to \$2316 a farm.

The most profitable 10 farms averaged 65 acres larger than the least profitable 10 farms. This gave the first named group some advantage in volume of business and in lower costs per acre for labor, power, and equipment. The less successful farmers spent \$1000 each more for feed than did the more successful farmers. This probably was partly due to the smaller size of their farms.

One of the important advantages of the more successful farms was that of larger crop yields. They produced $6\frac{1}{2}$ bushels more corn, 9 bushels more oats, and $3\frac{1}{2}$ bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 57 acres more corn, 11 acres more wheat, and 16 acres more oats. Their larger acreage and larger yields gave the more profitable farms 3500 bushels more grain per farm from the 1930 crop than the less profitable farms had.

On the more profitable farms one of the big advantages was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$182 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$103. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$79 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$2200 worth of feed which was fed on the average farm in this area this advantage of \$79 a hundred amounts to a total of more than \$1700 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock and on hogs which constituted the largest source of livestock income. Dairy sales per cow were somewhat higher on the less profitable farms, but the more profitable farms averaged only three cows per farm and most of the product was consumed at home. The less profitable farms had about 50% more livestock investment per acre than did the more profitable farms, but more livestock was no advantage so long as it yielded no margin of profit on the feed consumed.

The labor efficiency was higher on farms of the more successful group. They had 20 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$29 as compared with \$39 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income, the most profitable 10 farms had an advantage of \$10 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was \$3.41 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group, and there apparently was no corresponding return for the extra cost. Most of the extra cost may be due to a smaller acreage over which to spread the power and equipment charges.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$19.59 and an expense of \$10.53 an acre as compared with \$14.87 income and \$17.08 expense on the least profitable 10 farms. This resulted in an average net income of \$9.06 and a net loss of \$2.21 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Scott County for the period 1926-1930 inclusive. The rate

earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$20 an acre in the 5 year period and were lowest in 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$1137.

Comparative Earnings and Investment Figures on Farms in Scott County
for 1926-1930

Items	1926	1927 ¹	1928	1929	1930
Number of farms - - - - -	27	29	30	30	30
Average size of farms, acres - - -	210	225	222	207	232
Average rate earned, to pay for management, risk and capital -	2.8%	3.6%	6.3%	5.3%	2.7%
Average labor and management wage	\$-128	\$ 31	\$1137	\$780	\$-70
Average value of land per acre - -	118	145	110	105	100
Average investment per acre - - -	163	187	148	148	140
Investment in livestock per farm-	2133	2142	2247	2561	2710
Investment in cattle per farm - -	584	464	735	870	1172
Investment in hogs per farm - - -	754	955	798	973	852
Investment in poultry per farm- -	146	140	128	152	164
Gross income per acre - - - - -	16.43	18.28	19.91	19.61	14.91
Operating cost per acre - - - - -	11.99	11.61	10.52	11.79	11.15
Net increase from crops per farm-	622	1443	1668	979	311
Miscellaneous income per farm - -	41	33	75	81	103
Livestock income per farm - - - -	2785	2649	2678	2999	3042
Gross income per farm - - - - -	3448	4125	4421	4059	3461
Cattle income per farm- - - - -	449	436	535	518	412
Dairy sales per farm- - - - -	109	216	161	191	136
Hog income per farm - - - - -	1901	1735	1646	1876	2198
Poultry income per farm - - - - -	284	223	275	332	262
Average yield corn in bu. - - - -	40	39	49	47	38
Average yield wheat in bu. - - - -	17	15	16	15	21

¹A few records from Morgan County included for 1927.

Scott County, 1930

Item	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
<u>Capital Investments--Land</u> - - - - -		23,303	26,250	18,435
Farm Improvements - - - - -		3,200	2,371	3,297
Horses- - - - -		424	443	415
Cattle- - - - -		1,172	1,037	1,725
Hogs- - - - -		852	934	720
Sheep - - - - -		82	68	145
Bees- - - - -		16	---	48
Poultry - - - - -		164	116	212
Livestock--Total - - - - -		2,710	2,598	3,265
Machinery and equipment- - - - -		1,404	1,261	1,238
Feed, grain and supplies - - - - -		2,000	1,658	1,995
Total Investment- - - - -	\$	\$32,617	\$34,138	\$28,230
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		412	400	501
Hogs- - - - -		2,198	2,373	1,843
Sheep - - - - -		28	10	65
Bees- - - - -		6	---	17
Poultry - - - - -		87	70	60
Egg sales - - - - -		175	97	229
Dairy sales - - - - -		136	120	163
Livestock--Total - - - - -		3,042	3,070	2,878
Feed, grain and supplies - - - - -		311	1,849	---
Labor off farm - - - - -		56	109	29
Miscellaneous receipts - - - - -		52	117	37
Total Receipts--Net Increases - - - - -	\$	\$ 3,461	\$ 5,145	\$ 2,944
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		230	199	209
Horses- - - - -		49	53	49
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		371	303	399
Feed, grain and supplies- - - - -		---	---	1,041
Livestock expense - - - - -		55	54	58
Crop expense- - - - -		154	169	123
Hired labor - - - - -		494	725	339
Taxes - - - - -		358	403	298
Miscellaneous expenses- - - - -		27	27	28
Total Expenses--Net Decreases - - - - -	\$	\$ 1,738	\$ 1,933	\$ 2,544
Receipts Less Expenses- - - - -	\$	\$ 1,723	\$ 3,212	\$ 400
Total unpaid labor- - - - -		849	834	838
Operator's labor- - - - -		686	678	708
Family labor- - - - -		163	156	130
Net income from investment and management - - - - -		874	2,378	-438
<u>Rate earned on investment</u> - - - - -	%	2.58%	6.97%	-1.55%
Return to capital and operator's labor and management		1,560	3,056	270
5 percent of capital invested - - - - -		1,630	1,707	1,411
Labor and management wage - - - - -	\$	\$ -70	\$ 1,349	\$ -1,141

Scott County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operat- ing expense	Per acre	Per farm	
8.68	59	51	35	121	394	310	203	108	16	1.02	17	40	36	10 500	372
7.68	56	48	33	111	374	290	193	98	15	1.52	20	45	33	9 500	352
6.68	53	45	31	101	354	270	183	88	14	2.02	23	50	30	8 500	332
5.68	50	42	29	91	334	250	173	78	13	2.52	26	55	27	7 500	312
4.68	47	39	27	81	314	230	163	68	12	3.02	29	60	24	6 500	292
3.68	44	36	25	71	294	210	153	58	11	3.52	32	65	21	5 500	272
2.68	41	33	23	61	274	190	143	48	10	4.02	35	70	18	4 500	252
2.68	38	30	21	51	254	170	133	38	9	4.52	38	75	15	3 500	232
1.68	35	27	19	41	234	150	123	28	8	5.02	41	80	12	2 500	212
.68	32	24	17	31	214	130	113	18	7	5.52	44	85	9	1 500	192
-1.32	29	21	15	21	194	110	103	8	6	6.02	47	90	6	500	172
-1.32	26	18	13	11	174	90	93	---	5	6.52	50	95	3	---	152
-2.32	23	15	11	1	154	70	83	---	4	7.02	53	100	---	---	132
-3.32	20	12	9	---	134	50	73	---	3	7.52	56	105	---	---	112
-4.32	17	9	7	---	114	30	63	---	2	8.02	59	110	---	---	92

Scott County, 1930

Factors helping to analyze the farm business	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -		232	263	198
Percent of land area tillable - - -		78%	80%	76%
Gross receipts per acre - - - - -		14.91	19.59	14.87
Total expenses per acre - - - - -		11.15	10.53	17.08
Net receipts per acre - - - - -		3.76	9.06	-2.21
Value of land per acre- - - - -		100	100	93
Total investment per acre - - - - -		140	130	143
Acres in Corn - - - - -		73	99	42
Oats - - - - -		14	23	7
Wheat- - - - -		36	40	29
Crop yields--Corn, bu. per acre - -		37.9	40.6	34.0
Oats, bu. per acre - -		30.1	31.1	22.2
Wheat, bu. per acre- -		21.0	22.8	19.3
Value of feed fed to productive livestock- - - - -		2279	1685	2804
Returns per \$100 of feed fed to productive livestock - -		133	182	103
Returns per \$100 invested in:				
All productive livestock- -		140	141	118
Cattle- - - - -		51	48	50
Hogs- - - - -		254	256	248
Poultry - - - - -		170	150	151
Dairy sales per dairy cow - - - - -		38	39	50
Investment in productive livestock per acre -		9.39	8.30	12.28
Receipts from productive livestock per acre -		13.10	11.69	14.54
Man labor cost per \$100 gross income- - - - -		38	29	39
Man labor cost per acre - - - - -		5.59	5.61	5.81
Value of feed fed to horses - - - -		240	241	244
Power and machinery cost per crop acre- - - - -		4.52	3.24	6.65
Expenses per \$100 gross income- - -		75	54	115
Machinery cost per acre - - - -		1.60	1.15	2.02
Farm improvements cost per acre		.99	.76	1.06
Farms with tractor- - - - -		70%	70%	60%
Excess of sales over expenses - - -		2179	2848	1698
Decrease in inventory - - - - -		456	364 Inc.	1298

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Bond, Montgomery and Shelby Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, R. G. Trummel, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Bond, Montgomery, and Shelby counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 30 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 8 tenths of one percent on their total farm investments. A wage of \$50 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$253 a farm, the result becomes a net loss of 2 tenths of one percent of the capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$419 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$72 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$114 an acre. The land and improvements exclusive of the residence averaged \$87 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies

*J. H. Brock, A. E. Snyder, and H. M. Adams, farm advisers in Bond, Montgomery, and Shelby counties, respectively, cooperated in supervising and collecting the records on which this report is based.

show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$564 while the surplus of sales over expenses was \$1650. For the more successful farms, the corresponding figures were \$501 increase in inventory and \$1657 surplus of income over expense. For the less successful farms the figures were \$844 reduction in inventory and \$916 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops, however, is stored, the small grains, especially wheat, being marketed before inventory date on many farms. The increase in inventory on the most profitable 10 farms was caused chiefly by an increase in the quantity of feed and grain on hand at the close of the year as compared with the beginning. These farms also had an increase in the numbers of hogs on hand. The average increase for the group included about 400 bushels of corn and 26 head of hogs per farm.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all

farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2351 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 15 acres difference in average size between the most profitable 10 farms and the least profitable 10 farms, the average size of all farms being 221 acres. The difference in percentage of tillable land was only 6 percent. Difference in acreage was not an important factor in the difference in income. In fact, the two groups had exactly the same number of tillable acres per farm. In spite of this fact, however, the two groups of farms differed greatly in the amount of business done. The difference between them in average gross income amounted to \$2970 a farm. Many farms in this area are handicapped by too small a volume of business. An important factor in the larger sales of the more successful farms included in this study was that of a relatively large hog production enterprise.

One of the important advantages of the more successful farms was that of larger crop yields. They produced $14\frac{1}{2}$ bushels more corn, 9 bushels more oats, and $4\frac{1}{2}$ bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 39 acres more corn, 4 acres less wheat, and 9 acres less oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$129 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$98. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$31 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$2300 worth of feed which was fed on the average farm in this area this advantage of \$31 a hundred amounts to a total of more than \$700 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$86 dairy sales per dairy cow as compared with \$75 per dairy cow on the less profitable farms. As to the amount of livestock, the more profitable farms had 70 percent more livestock investment per acre than was reported by the less profitable farms. This greater amount of livestock, mostly hogs was a factor in the larger volume of business done by the higher earnings group.

The labor efficiency was higher on farms of the more successful group. They had 11 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$25 as compared with \$32 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$57 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was 66 cents higher on the more successful farms. This slightly larger cost was more than justified by the larger amount of livestock, and larger crop yields on these farms.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$19.17 and an expense of \$12.52 an acre as compared with \$6.01 income and \$10.44 expense on the least profitable 10 farms. This resulted in an average net income of \$6.65 and a net loss of \$4.43 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Bond and Montgomery counties for the period 1926-1930 inclusive. The rate earned was lowest for 1930. It is interesting to note that the average operating cost per acre has remained very uniform as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$817.

Comparative Earnings and Investment Figures on Farms in Bond and Montgomery Counties for 1926-1930

Items	1926 ¹	1927 ¹	1928 ¹	1929 ¹	1930
Numbers of farms - - - - -	30	27	33	42	30
Average size of farms, acres - - -	224	161	184	175	221
Average rate earned, to pay for management, risk and capital- -	1.6%	4.4%	4.6%	6.2%	0.8%
Average labor and management wage-	\$-285	\$497	\$508	\$817	\$-419
Average value of land per acre - -	68	65	75	62	72
Average investment per acre- - - -	109	107	117	106	114
Investment in livestock per farm -	2543	1627	1811	2128	2748
Investment in cattle per farm- - -	1203	683	844	1149	1502
Investment in hogs per farm- - - -	519	394	328	337	519
Investment in poultry per farm - -	199	188	176	172	206
Gross income per acre- - - - -	12.81	16.24	16.74	18.43	12.28
Operating cost per acre- - - - -	11.10	11.53	11.30	11.88	11.34
Net increase from crops per farm -	000	338	540	000	000
Miscellaneous income per farm - -	90	135	101	90	56
Livestock income per farm- - - - -	2781	2135	2439	3135	2658
Gross income per farm- - - - -	2871	2608	3080	3225	2714
Cattle income per farm - - - - -	539	292	452	427	282
Dairy sales per farm - - - - -	661	765	806	1094	685
Hog income per farm- - - - -	1174	734	772	1178	1353
Poultry income per farm- - - - -	340	296	328	392	310
Average yield corn in bu.- - - - -	30	31	40	38	27
Average yield wheat in bu. - - - -	19	14	7	10	14

¹Madison County records were included for the years 1926-1929.

Bond, Montgomery, and Shelby Counties, 1930

Item	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
<u>Capital Investments--Land</u> - - - - -		15,847	18,749	11,076
Farm Improvements - - - - -		3,395	3,757	2,423
Horses- - - - -		401	367	353
Cattle- - - - -		1,502	1,578	1,011
Hogs- - - - -		519	1,035	157
Sheep - - - - -		106	41	195
Bees- - - - -		14	--	37
Poultry - - - - -		206	155	229
Livestock--Total - - - - -		<u>2,748</u>	<u>3,176</u>	<u>1,982</u>
Machinery and equipment- - - - -		1,334	1,523	1,111
Feed, grain and supplies - - - - -		1,977	1,966	1,471
Total Investment- - - - -	\$	<u>\$25,301</u>	<u>\$29,171</u>	<u>\$18,063</u>
<u>Receipts--Net Increases</u> - - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		282	380	67
Hogs- - - - -		1,353	2,913	242
Sheep - - - - -		28	8	45
Bees- - - - -		---	---	---
Poultry - - - - -		78	39	94
Egg sales - - - - -		232	164	211
Dairy sales - - - - -		685	626	527
Livestock--Total - - - - -		<u>2,658</u>	<u>4,130</u>	<u>1,186</u>
Feed, grain and supplies - - - - -		---	---	---
Labor off farm - - - - -		40	52	25
Miscellaneous receipts - - - - -		16	6	7
Total Receipts--Net Increases - - - - -	\$	<u>\$ 2,714</u>	<u>\$ 4,188</u>	<u>\$ 1,218</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		228	220	253
Horses- - - - -		22	43	---
Miscellaneous livestock decreases		2	---	---
Bees		---	---	---
Machinery and equipment - - - - -		347	365	290
Feed, grain and supplies- - - - -		302	504	202
Livestock expense - - - - -		24	27	21
Crop expense- - - - -		193	208	134
Hired labor - - - - -		251	384	44
Taxes - - - - -		225	246	171
Miscellaneous expenses- - - - -		34	33	31
Total Expenses--Net Decreases - - - - -	\$	<u>\$ 1,628</u>	<u>\$ 2,030</u>	<u>\$ 1,146</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 1,086</u>	<u>\$ 2,158</u>	<u>\$ 72</u>
Total unpaid labor- - - - -		879	706	971
Operator's labor- - - - -		639	630	660
Family labor- - - - -		240	76	311
Net income from investment and management - - - - -		207	1,452	-899
Rate earned on investment - - - - -	%	<u>.82%</u>	<u>4.98%</u>	<u>-4.98%</u>
Return to capital and operator's labor and management		846	2,082	-239
5 percent of capital invested - - - - -		1,265	1,459	903
Labor and management wage - - - - -	\$	<u>\$ -419</u>	<u>\$ 623inc.</u>	<u>\$-1,142</u>

Bond, Montgomery and Shelby Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in		L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm		
	Corn	Oats	Wheat	Cattle					Hogs	Poultry	Man labor	Operat- ing expense		Per acre	Per farm
7.82	49	49	28	140	393	302	185	158	17	.70	20	57	35	6 000	360
6.82	46	46	26	130	373	282	175	148	16	1.20	23	62	30	5 500	340
5.82	43	43	24	120	353	262	165	138	15	1.70	26	67	27	5 000	320
4.82	40	40	22	110	333	242	155	128	14	2.20	29	72	24	4 500	300
3.82	37	37	20	100	313	222	145	118	13	2.70	32	77	21	4 000	280
2.82	34	34	18	90	293	202	135	108	12	3.20	35	82	18	3 500	260
1.82	31	31	16	80	273	182	125	98	11	3.70	38	87	15	3 000	240
.82	27	28	14	70	253	162	115	88	10	4.20	41	92	12	2 500	220
-.18	25	25	12	60	233	142	105	78	9	4.70	44	97	9	2 000	200
-1.18	22	22	10	50	213	122	95	68	8	5.20	47	102	6	1 500	180
-2.18	19	19	8	40	193	102	85	58	7	5.70	50	107	3	1 000	160
-3.18	16	16	6	30	173	82	75	48	6	6.20	53	112	---	500	140
-4.18	13	13	4	20	153	62	65	38	5	6.70	56	117	---	---	120
-5.18	10	10	2	10	133	42	55	28	4	7.20	59	122	---	---	100
-6.18	7	7	---	---	113	22	45	18	3	7.70	62	127	---	---	80

Bond, Montgomery, and Shelby Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 30 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -	-----	221	218	203
Percent of land area tillable - - - - -	-----	84%	82%	88%
Gross receipts per acre - - - - -	-----	12.28	19.17	6.01
Total expenses per acre - - - - -	-----	11.34	12.52	10.44
Net receipts per acre - - - - -	-----	.94	6.65	-4.43
Value of land per acre- - - - -	-----	72	86	55
Total investment per acre - - - - -	-----	114	133	89
Acres in Corn - - - - -	-----	63	81	42
Oats - - - - -	-----	26	22	31
Wheat- - - - -	-----	23	14	18
Soybeans - - - - -	-----	6	6	2
Crop yields--Corn, bu. per acre - - - - -	-----	28.1	32.8	18.2
Oats, bu. per acre - - - - -	-----	28.0	31.8	22.9
Wheat, bu. per acre - - - - -	-----	13.9	15.0	10.5
Value of feed fed to productive livestock- - - - -	-----	2308	3195	1209
Returns per \$100 of feed fed to productive livestock - - - - -	-----	115	129	98
Returns per \$100 invested in:				
All productive livestock- - - - -	-----	119	146	77
Cattle- - - - -	-----	70	67	61
Hogs- - - - -	-----	253	256	186
Poultry - - - - -	-----	162	147	144
Dairy sales per dairy cow - - - - -	-----	88	86	75
Investment in productive livestock per acre - - - - -	-----	10.07	12.98	7.55
Receipts from productive livestock per acre - - - - -	-----	12.02	18.90	5.85
Man labor cost per \$100 gross income- - - - -	-----	41	25	82
Man labor cost per acre - - - - -	-----	4.99	4.83	4.94
Value of feed fed to horses - - - - -	-----	286	285	242
Power and machinery cost per crop acre- - - - -	-----	4.21	4.43	3.77
Expenses per \$100 gross income- - - - -	-----	92	65	174
Machinery cost per acre - - - - -	-----	1.57	1.67	1.43
Farm improvements cost per acre - - - - -	-----	1.03	1.01	1.25
Farms with tractor- - - - -	-----	67%	60%	60%
Excess of sales over expenses - - - - -	-----	1650	1657	916
Decrease in inventory - - - - -	-----	564	501 inc.	844

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Clinton County, Illinois, 1930

Prepared By R. R. Hudelson, P. E. Johnston, R. G. Trummel, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921 one hundred farms in Woodford County which is typical of central Illinois had an average net loss of practically one percent of the total farm investment. In 1920 thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Clinton County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 36 farmers in Clinton County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 1.8 percent on their total farm investments. A wage of \$50 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$200 a farm, there remains a rate of 8 tenths of one percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group lacked \$47 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$67 an acre not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$116 an acre. The land and improvements exclusive of the residence averaged \$83 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1920

*W. A. Cope, farm adviser in Clinton County, cooperated in supervising and collecting the records on which this report is based.

companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.5 percent and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm and for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$217 while the surplus of sales over expenses was \$1514. For the more successful farms, the corresponding figures were \$230 increase in inventory and \$1908 surplus of income over expense. For the less successful farms the figures were \$671 reduction in inventory and \$1148 surplus of income over expense. The increase in inventory on the more profitable farms was due to an increased value of improvements and equipment. The operators of these farms spent an average of \$1096 a farm on improvements and machinery which considerably more than offset the depreciation and current expense on these items. The operators of the less profitable farms spent an average of only \$644 a farm on improvements and machinery. The less profitable farms also had a larger reduction in quantity of grain on hand at the end of the year as compared with the beginning of the year. This appears to have been due in part at least to a smaller production of feed and less efficient feeding. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income.

On account of the difficulty in getting records of produce used by the farm family and by hired labor these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$1675 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 11 acres difference in average size between the most profitable 12 farms and the least profitable 12 farms, the average size of all farms being 173 acres. The difference in percentage of tillable land was only 2.8 percent. Difference in acreage was not an important factor in the difference in income. In fact, reports of this kind have often shown the more successful farms somewhat smaller. It is probable that the extra 14 acres of tillable land which the more successful farms averaged did give a little advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The difference in gross income in other years and other areas has usually been over \$2000. For this area in the depression year of 1930 the difference was \$1232.

One of the important advantages of the more successful farms was that of larger crop yields. They produced 2 bushels more corn, 4 bushels more oats, and 2 bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 14 acres more corn, 5 acres more wheat, and 7 acres more oats than the less profitable farms.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$165 of livestock income from each \$100 worth of feed other than pasture while the less successful farms had a corresponding income of only \$119. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms but the additional \$46 from each \$100 worth of feed on the most profitable 12 farms was an important factor in their larger net incomes. On over \$1700 worth of feed which was fed on the average farm in this area this advantage of \$46 a hundred amounts to a total of more than \$800 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$130 dairy sales per dairy cow as compared with \$95 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference each of them having close to \$10 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was much higher on farms of the more successful group. They had 58 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$32 as compared with \$53 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 12 farms had an advantage of \$21 for each \$100 of income.

The combined cost of feed for horses, horse depreciations and power and machinery per crop acre was \$1.83 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group. The larger power and machinery cost apparently did not result in greater production.

The situation is summed up in the gross receipts and expense per acre. The most profitable 12 farms had an average gross income of \$18.16 and an expense of \$11.47 an acre as compared with \$12.13 income and \$14.79 expense on the least profit-

able 12 farms. This resulted in an average net income of \$6.69 and a net loss of \$2.66 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Clinton County for the period 1926-1930. The rate earned was lowest for 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged, yet there is considerable variation between individual farms in the operating cost per acre. All enterprises except hog production show a reduced income for 1930. This is due in a large part to the severe slump in prices which affected hogs somewhat less than other products. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$786.

Comparative Earnings and Investment Figures on Farms in
Clinton County for 1926-1930

Items	1926	1927	1928	1929	1930
Numbers of farms - - - - -	56	35	33	44	36
Average size of farms, acres - - -	172	153	161	167	173
Average rate earned, to pay for management, risk and capital- -	3.5%	4.4%	6.1%	5.8%	1.8%
Average labor and management wage-	\$320	\$430	\$786	\$765	\$-47
Average value of land per acre - -	66	69	68	68	67
Average investment per acre- - - -	108	112	113	117	116
Investment in livestock per farm -	1884	1755	1995	2099	2252
Investment in cattle per farm- - -	941	826	1014	1147	1228
Investment in hogs per farm- - - -	188	190	191	190	287
Investment in poultry per farm - -	279	281	304	278	282
Gross income per acre- - - - -	15.28	16.80	19.03	18.55	14.64
Operating cost per acre- - - - -	11.51	11.90	12.19	11.75	12.54
Net increase from crops per farm -	000	97	204	80	000
Miscellaneous income per farm- - -	139	107	113	98	91
Livestock income per farm- - - - -	2494	2370	2750	2920	2448
Gross income per farm- - - - -	2633	2574	3067	3098	2539
Cattle income per farm - - - - -	246	384	406	367	157
Dairy sales per farm - - - - -	1245	1172	1408	1460	1304
Hog income per farm- - - - -	358	286	314	428	439
Poultry income per farm- - - - -	629	514	608	641	496
Average yield corn in bu.- - - - -	18	25	35	31	18
Average yield wheat in bu. - - - -	19	14	4	14	21

Clinton County, 1930

Item	Your farm	Average of 36 farms	12 most profitable farms	12 least profitable farms
Capital Investments--Land - - - - -		11,600	12,796	10,577
Farm Improvements - - - - -		2,741	2,947	2,848
Horses- - - - -		422	400	431
Cattle- - - - -		1,228	1,176	1,164
Hogs- - - - -		287	232	262
Sheep - - - - -		21	52	11
Bees- - - - -		12	8	30
Poultry - - - - -		282	267	301
Livestock--Total - - - - -		<u>2,252</u>	<u>2,135</u>	<u>2,199</u>
Machinery and equipment- - - - -		1,663	1,715	1,721
Feed, grain and supplies - - - - -		1,807	1,940	1,729
Total Investment- - - - -	\$	<u>\$20,063</u>	<u>\$21,533</u>	<u>\$19,074</u>
<u>Receipts--Net Increases-</u> - - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		157	158	126
Hogs- - - - -		489	370	415
Sheep - - - - -		2	2	4
Bees- - - - -		---	---	---
Poultry - - - - -		97	78	133
Egg sales - - - - -		399	512	336
Dairy sales - - - - -		1,304	1,495	985
Livestock--Total - - - - -		<u>2,448</u>	<u>2,615</u>	<u>1,999</u>
Feed, grain and supplies - - - - -		---	533	---
Labor off farm - - - - -		72	115	68
Miscellaneous receipts - - - - -		19	44	8
Total Receipts--Net Increases - - -	\$	<u>\$ 2,539</u>	<u>\$ 3,307</u>	<u>\$ 2,075</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		226	264	250
Horses- - - - -		16	19	19
Miscellaneous livestock decreases				
Bees		1	1	2
Machinery and equipment - - - - -		294	219	361
Feed, grain and supplies- - - - -		93	---	322
Livestock expense - - - - -		35	25	52
Crop expense- - - - -		220	216	211
Hired labor - - - - -		179	213	211
Taxes - - - - -		154	188	147
Miscellaneous expenses- - - - -		24	24	23
Total Expenses--Net Decreases - - -	\$	<u>\$ 1,242</u>	<u>\$ 1,169</u>	<u>\$ 1,598</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 1,297</u>	<u>\$ 2,138</u>	<u>\$ 477</u>
Total unpaid labor- - - - -		952	919	933
Operator's labor- - - - -		591	600	575
Family labor- - - - -		341	319	358
Net income from investment and management - - -		365	1,219	-346
<u>Rate earned on investment</u> - - - - -		<u>1.82%</u>	<u>5.66%</u>	<u>-2.39%</u>
Return to capital and operator's labor and management		956	1,819	119
5 percent of capital invested - -		1,003	1,077	953
Labor and management wage - - - - -	\$	<u>\$ -47</u>	<u>\$ 742</u>	<u>\$ -834</u>

Clinton County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm	
	Corn	Oats	Wheat	Cattle	Hogs					Poultry	Man labor	Operat- ing expense	Per acre		Per farm
8.82	59	53	35	191	517	315	209	186	17	1.40	21	51	29	6 000	310
7.82	36	50	33	181	297	295	199	176	15	1.90	24	56	27	5 500	290
6.82	33	47	31	171	277	275	189	166	15	2.40	27	61	25	5 000	270
5.82	30	44	29	161	257	255	179	156	14	2.90	30	66	23	4 500	250
4.82	27	41	27	151	237	235	169	146	13	3.40	33	71	21	4 000	230
3.82	24	38	25	141	217	215	159	136	12	3.90	36	76	19	3 500	210
2.82	21	35	23	131	197	195	149	126	11	4.40	39	81	17	3 000	190
1.82	18	32	21	121	177	175	139	116	10	4.90	42	86	15	2 500	170
.82	15	29	19	111	157	155	129	106	9	5.40	45	91	13	2 000	150
-.18	12	26	17	101	137	135	119	96	8	5.90	48	96	11	1 500	130
-1.18	9	23	15	91	117	115	109	86	7	6.40	51	101	9	1 000	110
-2.18	6	20	13	81	97	95	99	76	6	6.90	54	106	7	500	90
-3.18	3	17	11	71	77	75	89	66	5	7.40	57	111	5	---	70
-4.18	--	14	9	61	57	55	79	56	4	7.90	60	116	3	---	50
-5.18	--	11	7	51	37	35	69	46	3	8.40	63	121	1	---	30

Clinton County, 1930

Factors helping to analyze the farm business	Your farm	Average of 36 farms	12 most profitable farms	12 least profitable farms
Size of farm--acres - - - - -	_____	173	182	171
Percent of land area tillable	_____	87.3	89.2	86.4
Gross receipts per acre - - - - -	_____	14.64	18.16	12.13
Total expenses per acre - - - - -	_____	12.54	11.47	14.79
Net receipts per acre - - - - -	_____	2.10	6.69	-2.66
Value of land per acre- - - - -	_____	67	70	62
Total investment per acre - - - - -	_____	116	118	111
Acres in Corn - - - - -	_____	40	49	35
Oats - - - - -	_____	27	31	24
Wheat- - - - -	_____	43	46	41
Crop yields--Corn, bu. per acre- - - - -	_____	18.0	19.1	17.5
Oats, bu. per acre- - - - -	_____	32.0	35.8	29.9
Wheat, bu. per acre - - - - -	_____	20.9	22.0	20.2
Value of feed fed to productive livestock- - - - -	_____	1,766	1,582	1,680
Returns per \$100 of feed fed to productive livestock - - - - -	_____	139	165	119
Returns per \$100 invested in:				
All productive livestock- - - - -	_____	136	153	117
Cattle- - - - -	_____	121	140	99
Hogs- - - - -	_____	177	172	164
Poultry - - - - -	_____	175	219	157
Dairy sales per dairy cow - - - - -	_____	116	130	95
Investment in productive livestock per acre - - - - -	_____	10.35	9.40	9.98
Receipts from productive livestock per acre - - - - -	_____	14.11	14.35	11.67
Man labor cost per \$100 gross income- - - - -	_____	42	32	53
Man labor cost per acre - - - - -	_____	6.16	5.86	6.44
Value of feed fed to horses - - - - -	_____	346	331	339
Power and machinery cost per crop acre - - - - -	_____	4.91	3.89	5.72
Expenses per \$100 gross income- - - - -	_____	86	63	122
Machinery cost per acre - - - - -	_____	1.70	1.20	2.11
Farm improvements cost per acre - - - - -	_____	1.30	1.45	1.46
Farms with tractor- - - - -	_____	55%	83%	50%
Excess of sales over expenses - - - - -	_____	1,514	1,908	1,148
Decrease in inventory - - - - -	_____	217	Inc 230	671

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1919-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Effingham County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, W. A. Gilbert, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Effingham County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 32 farmers in Effingham County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 2 tenths of one percent on their total farm investments. A wage of \$50 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$129 a farm, there is nothing left to pay for the risk and use of invested capital. In fact, the result is a net loss of 8 tenths of one percent of the investment. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$61 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$40 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$68 an acre. The land and improvements exclusive of the residence averaged \$50 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929,

*G. H. Iftner, farm adviser in Effingham County cooperated in supervising and collecting the records on which this report is based.

1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that the average farm in this area in 1930, unlike most other areas had an increase in inventory amounting to \$67 while the surplus of sales over expenses was \$687. For the more successful farms, the corresponding figures were \$411 increase in inventory and \$854 surplus of income over expense. For the less successful farms the figures were \$171 reduction in inventory and \$458 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater writing off of inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. The most profitable 10 farms covered by this report actually show more grain on hand at the close of the year 1930 than at the beginning. In spite of the severe drought, they report twice as much corn on hand January 1, 1931, as reported for January 1, 1930. Part of this apparently was purchased but part of it seems to have resulted from a larger acreage of corn per farm for 1930 than was planted in the wet spring of 1929. Few accounts are available for 1929, but these few show higher yields of corn than the same farms produced in 1930. It is the increased quantity of grain on the more successful farms at the close of the year that explains the average increase in inventory for farms of this area.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings

between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$932 a farm.

The most profitable 10 farms averaged 45 acres larger than the least profitable 10 farms, both groups having the same percentage of tillable land. One of the greatest handicaps of farms of this area is their small volume of business. It is likely that more successful farms were helped in this respect by their larger size. Other methods of increasing size of business consist in increasing the size of the intensive enterprises such as dairying and poultry raising. Both dairy and poultry sales were larger on the more successful farms. It is probable that the extra 45 acres of tillable land which the more successful farms averaged did give some advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The most profitable 10 farms show more than twice as large gross incomes as the least profitable 10 farms.

One of the advantages of the more successful farms was that of larger crop yields. They produced $6\frac{1}{2}$ bushels more corn and $1\frac{1}{2}$ bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 13 acres more corn, 15 acres more wheat, and 5 acres more oats than the less profitable farms.

On the more profitable farms one of the largest advantages was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$150 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$123. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$22 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$950 worth of feed which was fed on the average farm in this area this advantage of \$22 a hundred amounts to a total of more than \$200 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$63 dairy sales per dairy cow as compared with \$44 per dairy cow on the less profitable farms. As to the amount of livestock, the most profitable 10 farms had two dollars an acre more capital invested in livestock exclusive of horses and mules than did the least profitable 10 farms.

The labor efficiency was much higher on farms of the more successful group. They had 32 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$39 as compared with \$35 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$46 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was 96 cents higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group and there is no evidence that the extra cost for power and machinery brought a corresponding return.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$9.11 and an expense of \$6.60 an acre as compared with \$5.13 income and \$7.67 expense on the least profitable 10 farms. This resulted in average net income of \$2.51 and a net loss of \$2.54 an acre respectively for the two groups.

Previous to 1930 there are not enough records available from Effingham County to make definite comparisons with data for previous years, but the following table compares 1929 data for the area just south of Effingham County with the 1930 county data.

Comparative Earnings and Investment Figures on Farms in Effingham
and Adjoining Counties for 1929 and 1930

Items	1929 ¹	1930
Numbers of farms - - - - -	46	32
Average size of farms, acres - - - - -	181	189
Average rate earned, to pay for management, risk and capital- - - - -	4.9%	0.2%
Average labor and management wage- - - - -	\$ 584	\$ -61
Average value of land per acre - - - - -	37	40
Average investment per acre- - - - -	67	68
Investment in livestock per farm - - - - -	1539	1741
Investment in cattle per farm- - - - -	777	957
Investment in hogs per farm- - - - -	102	116
Investment in poultry per farm- - - - -	206	269
Gross income per acre- - - - -	11.20	7.44
Operating cost per acre- - - - -	7.94	7.32
Net increase from crops per farm - - - - -	380	62
Miscellaneous income per farm- - - - -	79	48
Livestock income per farm- - - - -	1569	1296
Gross income per farm- - - - -	2028	1406
Cattle income per farm - - - - -	316	141
Dairy sales per farm - - - - -	424	410
Hog income per farm- - - - -	272	238
Poultry income per farm- - - - -	484	494
Average yield corn in bu.- - - - -	28	14
Average yield wheat in bu. - - - - -	12	13

¹Records from Clay, Marion, Jefferson, Wayne and Richland counties for 1929.

Effingham County, 1930

Item	Your farm	Average of 32 farms	10 most profitable farms	10 least profitable farms
<u>Capital Investment</u> --Land - - - - -		7,507	8,325	6,457
Farm Improvements- - - - -		1,983	2,300	1,845
Horses - - - - -		336	409	277
Cattle - - - - -		957	1,053	653
Hogs - - - - -		116	152	65
Sheep- - - - -		63	93	52
Bees - - - - -		---	---	---
Poultry- - - - -		269	261	217
Livestock--Total- - - - -		<u>1,741</u>	<u>1,968</u>	<u>1,264</u>
Machinery and equipment - - - - -		1,011	1,007	936
Feed, grain and supplies- - - - -		704	743	674
Total Investment - - - - -	\$	<u>\$12,946</u>	<u>\$14,343</u>	<u>\$11,176</u>
<u>Receipts--Net Increases</u> - - - - -				
Horses - - - - -		---	---	---
Cattle - - - - -		141	180	76
Hogs - - - - -		238	385	56
Sheep- - - - -		13	16	11
Bees - - - - -		---	---	---
Poultry- - - - -		142	159	84
Egg sales- - - - -		352	362	223
Dairy sales- - - - -		410	396	268
Livestock--Total- - - - -		<u>1,296</u>	<u>1,498</u>	<u>718</u>
Feed, grain and supplies- - - - -		62	310	68
Labor off farm- - - - -		40	68	30
Miscellaneous receipts- - - - -		8	12	15
Total Receipts--Net Increases- - -	\$	<u>\$ 1,406</u>	<u>\$ 1,888</u>	<u>\$ 831</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements- - - - -		86	85	83
Horses - - - - -		17	3	37
Miscellaneous livestock decreases		---	---	---
Machinery and equipment- - - - -		179	164	148
Feed, grain and supplies - - - - -		---	---	---
Livestock expense- - - - -		15	15	10
Crop expense - - - - -		135	159	91
Hired labor- - - - -		64	23	33
Taxes- - - - -		130	144	118
Miscellaneous expenses - - - - -		26	30	24
Total Expenses--Net Decreases- - -	\$	<u>\$ 652</u>	<u>\$ 623</u>	<u>\$ 544</u>
Receipts Less Expenses - - - - -	\$	<u>\$ 754</u>	<u>\$ 1,265</u>	<u>\$ 287</u>
Total unpaid labor - - - - -		732	745	699
Operator's labor - - - - -		564	600	600
Family labor - - - - -		168	145	99
Net income from investment and management- - -		22	520	-412
<u>Rate earned on investment</u> - - - - -	%	<u>.17%</u>	<u>3.63%</u>	<u>-3.69%</u>
Return to capital and operator's labor and management		586	1,120	188
5 percent of capital invested- -		647	717	559
Labor and management wage- - - - -	\$	<u>\$ -61</u>	<u>\$ 403</u>	<u>\$ -371</u>

Effingham County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm	
7.17	35	41	27	130	340	534	204	127	14	--	35	63	28	5 000	330
6.17	32	38	25	120	320	314	194	117	13	.20	38	68	25	4 500	310
5.17	29	35	23	110	300	294	184	107	12	.70	41	73	22	4 000	290
4.17	26	32	21	100	280	274	174	97	11	1.20	44	78	19	3 500	270
3.17	23	29	19	90	260	254	164	87	10	1.70	47	83	16	3 000	250
2.17	20	26	17	80	240	234	154	77	9	2.20	50	88	13	2 500	230
1.17	17	23	15	70	220	214	144	67	8	2.70	53	93	10	2 000	210
.17	14	20	13	60	200	194	134	57	7	3.20	56	98	7	1 500	190
-.83	11	17	11	50	180	174	124	47	6	3.70	59	103	4	1 000	170
-1.83	8	14	9	40	160	154	114	37	5	4.20	62	108	1	500	150
-2.83	5	11	7	30	140	134	104	27	4	4.70	65	113	--	---	130
-3.83	2	8	5	20	120	114	94	17	3	5.20	68	118	--	---	110
-4.83	--	5	3	10	100	94	84	7	2	5.70	71	123	--	---	90
-5.83	--	2	1	--	80	74	74	--	1	6.20	74	128	--	---	70
-6.83	--	--	--	--	60	54	64	--	--	6.70	77	133	--	---	50

Effingham County, 1930

Factors helping to analyze the farm business	Your farm	Average of 32 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -		189	207	162
Percent of land area tillable - - -		87%	86%	86%
Gross receipts per acre - - - - -		7.44	9.11	5.13
Total expenses per acre - - - - -		7.32	6.60	7.67
Net receipts per acre - - - - -		.12	2.51	-2.54
Value of land per acre- - - - -		40	40	40
Total investment per acre - - - - -		68	69	69
Acres in Corn - - - - -		45	45	32
Oats - - - - -		29	33	28
Wheat- - - - -		13	21	6
Soybeans - - - - -		6	6	7
Crop yields--Corn, bu. per acre- - -		13.9	18.0	11.5
Oats, bu. per acre - - -		20.0	20.8	21.6
Wheat, bu. per acre- - -		13.0	12.3	10.9
Value of feed fed to productive livestock- - - - -		968	1,002	559
Returns per \$100 of feed fed to productive livestock - - -		134	150	128
Returns per \$100 invested in:				
All productive livestock- - -		96	98	77
Cattle- - - - -		60	56	54
Hogs- - - - -		200	228	104
Poultry - - - - -		194	210	160
Dairy sales per dairy cow - - - - -		57	63	44
Investment in productive livestock per acre - - -		7.11	7.34	5.72
Receipts from productive livestock per acre - - -		6.86	7.23	4.43
Man labor cost per \$100 gross income- - - - -		56	39	85
Man labor cost per acre - - - - -		4.17	3.53	4.35
Value of feed fed to horses - - - - -		210	208	212
Power and machinery cost per crop acre- - - - -		3.18	2.75	3.71
Expenses per \$100 gross income- - -		98	72	150
Machinery cost per acre - - - - -		.95	.79	.91
Farm improvements cost per acre		.46	.41	.51
Farms with tractor- - - - -		44%	40%	30%
Excess of sales over expenses - - -		687	854	458
Decrease in inventory - - - - -		-57	411 Inc.	171

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

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In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1913 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Madison County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, R. G. Trummel, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921 one hundred farms in Woodford County which is typical of central Illinois had an average net loss of practically one percent of the total farm investment. In 1920 thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Madison County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 41 farmers in Madison County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 1.6 percent on their total farm investments. A wage of \$50 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$186 a farm, there remains a rate of 6 tenths of one percent as pay for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group lacked \$50 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$67 an acre not including buildings. Other items including improvements, equipment, live-stock, and feed made a total investment of \$121 an acre. The land and improvements exclusive of the residence averaged \$87 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8

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percent and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm and for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$264 while the surplus of sales over expenses was \$1415. For the more successful farms, the corresponding figures were \$163 reduction in inventory and \$1977 surplus of income over expense. For the less successful farms the figures were \$565 and \$1071 respectively. It is evident that the farms in the low earnings group do show a greater writing off of inventories but they also had on the average a much smaller surplus of income over expenses. The surplus of income over expenses comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930 the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay since the small grains generally yielded well in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area and they are very select. The difference in average earnings between the most successful third and the least successful third of the farm included in this report is very significant, however, since the difference in net income amounts to \$1356 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that the least profitable 14 farms averaged 27 acres larger than the most profitable 14 farms, the average size of all farms being 15⁴ acres. The two groups had practically the same percentage of tillable land. Their larger acreage gave the less profitable farms an opportunity to secure lower costs per acre for labor, power, and equipment but they failed to take advantage of this opportunity.

One of the important advantages of the more successful farms is usually in larger crop yields. In this case, however, the less successful farms show slightly larger yields of corn and oats. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. This report presents one of the comparatively rare cases in which lower cost operation and more efficient livestock production on the more successful farms have more than balanced a slight disadvantage in yields.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$160 of livestock income from each \$100 worth of feed other than pasture while the less successful farmers had a corresponding income of only \$131. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little margin of profit from feeding instead of selling crops on the less successful farms but the additional \$29 from each \$100 worth of feed on the most profitable 14 farms was an important factor in their larger net incomes. On over \$1750 worth of feed which was fed on the average farm in this area this advantage of \$29 a hundred amounts to a total of more than \$500 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$156 dairy sales per dairy cow as compared with \$115 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference each of them having close to \$12 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was higher on farms of the more successful group. They had 27 cents an acre more labor cost but due to their larger incomes from only slightly more labor their labor cost per \$100 income was only \$36 as compared with \$48 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 14 farms had an advantage of \$12 for each \$100 of income.

The combined cost of feed for horses, horse depreciations and power and machinery per crop acre was \$1.07 higher on the less successful farms. This is in spite of the fact that these farms were larger than those of the more successful group.

The situation is summed up in the gross receipts and expense per acre. The most profitable 14 farms had an average gross income of \$19.13 and an expense of \$12.46 an acre as compared with \$13.65 income and \$15.89 expense on the least profitable 14 farms. This resulted in an average net income of \$6.67 and a net loss of \$2.24 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Madison and adjoining counties for the period 1926-1930. The

rate earned was lowest for 1926 and 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre running a little higher in 1930 on account of larger feed expense. Similar stability is commonly found when data from a group of farms are averaged, yet there is considerable variation between individual farms in the operating cost per acre. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$817.

Comparative Earnings and Investment Figures on Farms in Madison
County for 1926-1930

Items	1926 ¹	1927 ¹	1928 ¹	1929 ¹	1930
Numbers of farms - - - - -	30	27	33	42	41
Average size of farms, acres - - - - -	224	161	184	175	154
Average rate earned, to pay for management, risk and capital- - - - -	1.6%	4.4%	4.6%	6.2%	1.6%
Average labor and management wage- - - - -	\$-285	\$497	\$508	\$817	\$-50
Average value of land per acre - - - - -	68	66	76	62	67
Average investment per acre- - - - -	109	107	117	106	121
Investment in livestock per farm - - - - -	2543	1627	1811	2128	2299
Investment in cattle per farm- - - - -	1203	683	844	1149	1413
Investment in hogs per farm- - - - -	519	394	328	337	263
Investment in poultry per farm - - - - -	199	188	176	172	234
Gross income per acre- - - - -	12.81	16.24	16.74	18.43	17.03
Operating cost per acre- - - - -	11.10	11.53	11.30	11.88	15.14
Net increase from crops per farm - - - - -	000	338	540	000	000
Miscellaneous income per farm- - - - -	90	135	101	90	91
Livestock income per farm- - - - -	2781	2135	2439	3135	2532
Gross income per farm- - - - -	2871	2608	3080	3225	2623
Cattle income per farm - - - - -	539	292	452	427	230
Dairy sales per farm - - - - -	661	765	806	1094	1377
Hog income per farm- - - - -	1174	734	772	1178	477
Poultry income per farm- - - - -	340	296	328	392	435
Average yield corn in bu.- - - - -	30	31	40	38	25
Average yield wheat in bu. - - - - -	19	14	7	10	16

¹A few records from Bond and Montgomery counties included for 1926, 1927, 1928 and 1929.

Madison County, 1930

Item	Your farm	Average of 41 farms	14 most profitable farms	14 least profitable farms
<u>Capital Investments--Land</u> - - - - -		10,383	10,195	10,805
Farm Improvements - - - - -		3,008	2,718	3,125
Horses- - - - -		351	396	402
Cattle- - - - -		1,413	1,332	1,570
Hogs- - - - -		263	288	265
Sheep - - - - -		26	14	21
Bees- - - - -		12	10	5
Poultry - - - - -		234	231	232
Livestock--Total - - - - -		<u>2,299</u>	<u>2,271</u>	<u>2,495</u>
Machinery and equipment- - - - -		1,390	1,567	1,354
Feed, grain and supplies - - - - -		1,546	1,718	1,631
Total Investment- - - - -	\$	<u>\$18,626</u>	<u>\$ 18,469</u>	<u>\$19,410</u>
<u>Receipts--Net Increases</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		230	318	219
Hogs- - - - -		477	519	380
Sheep - - - - -		13	9	12
Bees- - - - -		---	---	---
Poultry - - - - -		153	190	114
Egg sales - - - - -		282	299	288
Dairy sales - - - - -		1,377	1,386	1,241
Livestock--Total - - - - -		<u>2,532</u>	<u>2,721</u>	<u>2,254</u>
Feed, grain and supplies - - - - -		---	---	---
Labor off farm - - - - -		67	57	43
Miscellaneous receipts - - - - -		24	4	55
Total Receipts--Net Increases - - - - -	\$	<u>\$ 2,623</u>	<u>\$ 2,782</u>	<u>\$ 2,352</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		182	102	267
Horses- - - - -		27	22	31
Miscellaneous livestock decreases				
Bees		3	---	---
Machinery and equipment - - - - -		319	263	377
Feed, grain and supplies- - - - -		303	8	420
Livestock expense - - - - -		39	34	43
Crop expense- - - - -		161	169	199
Hired labor - - - - -		228	182	269
Taxes - - - - -		179	156	210
Miscellaneous expenses- - - - -		31	32	30
Total Expenses--Net Decreases - - - - -	\$	<u>\$ 1,472</u>	<u>\$ 968</u>	<u>\$ 1,846</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 1,151</u>	<u>\$ 1,814</u>	<u>\$ 506</u>
Total unpaid labor- - - - -		860	844	892
Operator's labor- - - - -		590	600	596
Family labor- - - - -		270	244	296
Net income from investment and management - - - - -		291	970	-386
<u>Rate earned on investment</u> - - - - -	%	<u>1.56%</u>	<u>5.25%</u>	<u>-1.99%</u>
Return to capital and operator's labor and management		881	1,570	210
5 percent of capital invested - - - - -		931	923	970
Labor and management wage - - - - -	\$	<u>\$ -50</u>	<u>\$ 647</u>	<u>\$ -760</u>

Madison County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of		Returns per \$100 invested in		L. S. income per \$100 worth of feed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm		
	Corn	Oats	Wheat	Cattle					Hogs	Poultry	Man labor	Operating expense		Per acre	Per farm
8.56	46	52	30	185	337	344	214	208	19	2.19	19	54	38	6 000	290
7.56	43	49	28	175	317	324	204	198	18	2.69	22	59	35	5 500	270
6.56	40	45	26	165	297	304	194	188	17	3.19	25	64	32	5 000	250
5.56	37	43	24	155	277	284	184	178	16	3.69	28	69	29	4 500	230
4.56	34	40	22	145	257	264	174	168	15	4.19	31	74	26	4 000	210
3.56	31	37	20	135	237	244	164	158	14	4.69	34	79	23	3 500	190
2.56	28	34	18	125	217	224	154	148	13	5.19	37	84	20	3 000	170
1.56	25	31	16	115	197	204	144	138	12	5.69	40	89	17	2 500	150
.56	22	28	14	105	177	184	134	128	11	6.19	43	94	14	2 000	130
-.44	19	25	12	95	157	164	124	118	10	6.69	46	99	11	1 500	110
-1.44	16	22	10	85	137	144	114	108	9	7.19	49	104	8	1 000	90
-2.44	13	19	8	75	117	124	104	98	8	7.69	52	109	5	500	70
-3.44	10	16	6	65	97	104	94	88	7	8.19	55	114	2	---	50
-4.44	7	13	4	55	77	84	84	78	6	8.69	58	119	---	---	30
-5.44	4	10	2	45	57	64	74	68	5	9.19	61	124	---	---	10

Madison County, 1930

Factors helping to analyze the farm business	Your farm	Average of 41 farms	14 most profitable farms	14 least profitable farms
Size of farm--acres - - - - -		154	145	172
Percent of land area tillable - - - -		83%	84%	83%
Gross receipts per acre - - - - -		17.03	19.13	13.65
Total expenses per acre - - - - -		15.14	12.46	15.89
Net receipts per acre - - - - -		1.89	6.67	-2.24
Value of land per acre- - - - -		67	70	63
Total investment per acre - - - - -		121	127	113
Acres in Corn - - - - -		36	35	36
Oats - - - - -		13	12	17
Wheat - - - - -		36	41	39
Crop yields--Corn, bu. per acre- - - -		25.4	24.9	26.9
Oats, bu. per acre- - - -		30.8	28.7	30.5
Wheat, bu. per acre - - - -		16.3	18.2	15.4
Value of feed fed to productive livestock- - - - -		1,751	1,702	1,721
Returns per \$100 of feed fed to productive livestock - - - -		144	160	131
Returns per \$100 invested in:				
All productive livestock- - - -		134	147	114
Cattle- - - - -		115	126	97
Hogs- - - - -		197	201	159
Poultry - - - - -		204	220	200
Dairy sales per dairy cow - - - - -		138	156	115
Investment in productive livestock per acre - -		12.26	12.77	11.49
Receipts from productive livestock per acre - -		16.42	18.71	13.08
Man labor cost per \$100 gross income- - - - -		40	36	48
Man labor cost per acre - - - - -		6.84	6.83	6.56
Value of feed fed to horses - - - - -		276	253	325
Power and machinery cost per crop acre - - - - -		5.69	4.91	5.98
Expenses per \$100 gross income- - - -		89	65	116
Machinery cost per acre - - - - -		2.07	1.81	2.19
Farm improvements cost per acre -		1.18	.70	1.55
Farms with tractor- - - - -		54%	57%	50%
Excess of sales over expenses - - - -		1,415	1,977	1,071
Decrease in inventory - - - - -		264	163	565

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Monroe, Randolph, and Washington Counties, Illinois, 1930

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The 32 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of 3 tenths of one percent on their total farm investments. A wage of \$50 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$177 a farm, the rate earned is changed to a loss of 7 tenths of one percent with no return for the risk and use of capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$237 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$53 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$94 an acre. The land and improvements exclusive of the residence averaged \$66 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known

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In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$236 while the surplus of sales over expenses was \$1146. For the more successful farms, the corresponding figures were \$91 increase in inventory and \$1789 surplus of income over expense. For the less successful farms the figures were \$420 reduction in inventory and \$455 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater writing off of inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay, since the small grains generally yielded well in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms. The small increase in inventory on the most profitable 10 farms was due to the fact that these farms had an increased quantity of wheat on hand at the close of the year. They had 70 acres of wheat per farm and it gave a much better yield than in 1929.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

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tween the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$1721 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 17 acres difference in average size between the most profitable 10 farms and the least profitable 10 farms, the average size of all farms being 190 acres. The difference in percentage of tillable land was only 5 percent. Difference in acreage was not an important factor in the difference in income. In fact, reports of this kind have often shown the more successful farms somewhat smaller. It is probable that the extra 23 acres of tillable land which the more successful farms averaged did give some opportunity to secure lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2000 and \$3000. This area in the depression year of 1930 was no exception to the rule.

One of the most important advantages of the more successful farms was that of larger crop yields. They produced 6 bushels more corn, $9\frac{1}{2}$ bushels more oats, and 7 bushels more wheat per acre than the less successful farms. On an acreage equal to that of the average farm covered by this report the larger yields of corn, oats and wheat represent an advantage of over 700 bushels of grain worth, even at 1930 prices, over \$400 a farm. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 12 acres more corn, 42 acres more wheat, and 9 acres less oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$155 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$102. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$53 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$1250 worth of feed which was fed on the average farm in this area this advantage of \$53 a hundred amounts to a total of more than \$650 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle, hogs, and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$92 dairy sales per dairy cow as compared with \$79 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference, each of them having about \$6 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was much higher on farms of the more successful group. They had 86 cents an acre more labor cost but due to their larger incomes from a little more labor their labor cost per \$100 income was only \$37 as compared with \$86 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$49 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was 64 cents higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group. The extra power and machinery cost apparently brought no corresponding return.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$15.83 and an expense of \$10.84 an acre as compared with \$5.76 income and \$10.00 expense on the least profitable 10 farms. This resulted in an average net income of \$4.99 and a net loss of \$4.24 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in Monroe, Randolph and Washington counties for the period 1926-1930 inclusive. The rate earned was lowest for 1930. It is interesting to note that the average operating cost per acre has remained relatively stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$742.

Comparative Earnings and Investment Figures on Farms in Monroe, Randolph and Washington Counties for 1926-1930

Items	1926	1927 ¹	1928	1929	1930
Numbers of farms - - - - -	33	36	27	30	32
Average size of farms, acres - - - - -	188	172	200	179	190
Average rate earned, to pay for management, risk and capital - - - - -	6.0%	4.0%	5.0%	5.4%	0.3%
Average labor and management wage - - - - -	\$742	\$383	\$601	\$641	\$-237
Average value of land per acre - - - - -	54	72	58	58	53
Average investment per acre - - - - -	83	114	91	97	94
Investment in livestock per farm - - - - -	1278	1734	1486	1578	1834
Investment in cattle per farm - - - - -	425	712	635	730	963
Investment in hogs per farm - - - - -	163	295	215	203	212
Investment in poultry per farm - - - - -	194	167	189	202	220
Gross income per acre - - - - -	13.88	15.68	13.86	15.80	10.25
Operating cost per acre - - - - -	8.92	11.15	9.28	10.57	9.96
Net increase from crops per farm - - - - -	1107	816	976	730	259
Miscellaneous income per farm - - - - -	93	88	82	39	49
Livestock income per farm - - - - -	1414	1787	1720	2059	1637
Gross income per farm - - - - -	2614	2691	2778	2828	1945
Cattle income per farm - - - - -	177	271	223	229	140
Dairy sales per farm - - - - -	440	806	715	750	716
Hog income per farm - - - - -	273	400	307	491	321
Poultry income per farm - - - - -	475	258	445	573	444
Average yield corn in bu. - - - - -	25	37	39	42	19
Average yield wheat in bu. - - - - -	23	11	11	12	20

¹Some records from St. Clair county were included for 1927.

Monroe, Randolph, Washington Counties, 1930

Item	Your farm	Average of 32 farms	10 most profitable farms	10 least profitable farms
<u>Capital Investments--Land</u> - - - - -		10,144	12,723	6,430
Farm Improvements - - - - -		2,457	1,756	2,074
Horses- - - - -		391	432	360
Cattle- - - - -		963	782	758
Hogs- - - - -		212	260	170
Sheep - - - - -		47	5	144
Bees- - - - -		1	1	1
Poultry - - - - -		220	249	140
Livestock--Total - - - - -		<u>1,834</u>	<u>1,729</u>	<u>1,573</u>
Machinery and equipment- - - - -		1,418	1,545	989
Feed, grain and supplies - - - - -		1,822	1,774	1,350
Total Investment- - - - -	\$	<u>\$17,675</u>	<u>\$19,527</u>	<u>\$12,416</u>
<u>Receipts--Net Increases</u> - - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		140	228	4
Hogs- - - - -		321	576	186
Sheep - - - - -		16	4	46
Bees- - - - -		---	1	---
Poultry - - - - -		85	120	38
Egg sales - - - - -		359	520	164
Dairy sales - - - - -		716	526	568
Livestock--Total - - - - -		<u>1,637</u>	<u>1,975</u>	<u>1,006</u>
Feed, grain and supplies - - - - -		259	1,042	---
Labor off farm - - - - -		39	54	10
Miscellaneous receipts - - - - -		10	2	5
Total Receipts--Net Increases - - - - -	\$	<u>\$ 1,945</u>	<u>\$ 3,073</u>	<u>\$ 1,021</u>
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		146	85	133
Horses- - - - -		52	55	59
Miscellaneous livestock decreases		---	---	---
Machinery and equipment - - - - -		300	361	260
Feed, grain and supplies- - - - -		---	---	132
Livestock expense - - - - -		15	15	13
Crop expense- - - - -		178	236	135
Hired labor - - - - -		160	252	101
Taxes - - - - -		158	161	129
Miscellaneous expenses- - - - -		26	28	24
Total Expenses--Net Decreases - - - - -	\$	<u>\$ 1,035</u>	<u>\$ 1,193</u>	<u>\$ 986</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 910</u>	<u>\$ 1,880</u>	<u>\$ 35</u>
Total unpaid labor- - - - -		855	911	787
Operator's labor- - - - -		592	640	535
Family labor- - - - -		263	271	252
Net income from investment and management - - - - -		55	969	-752
<u>Rate earned on investment</u> - - - - -	%	<u>.31%</u>	<u>4.96%</u>	<u>-6.06%</u>
Return to capital and operator's labor and management		647	1,609	-217
5 percent of capital invested - - - - -		884	976	621
Labor and management wage - - - - -	\$	<u>\$ -237</u>	<u>\$ 633</u>	<u>\$ -838</u>

Monroe, Randolph, Washington Counties, 1950

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operat-ing expense	Per acre	Per farm	
7.31	40	43	34	161	303	346	201	163	14	1.66	23	43	38	5 500	330
6.31	37	40	32	151	283	326	191	153	13	2.16	27	55	34	5 000	310
5.31	34	37	30	141	263	306	181	143	12	2.66	31	62	30	4 500	290
4.31	31	34	28	131	243	286	171	133	11	3.16	35	69	26	4 000	270
3.31	28	31	26	121	223	266	161	123	10	3.66	39	76	22	3 500	250
2.31	25	28	24	111	203	246	151	113	9	4.16	43	83	18	3 000	230
1.31	22	25	22	101	183	226	141	103	8	4.66	47	90	14	2 500	210
0.31	19	22	20	91	163	206	131	93	7	5.16	51	97	10	2 000	190
-.69	16	19	18	81	143	186	121	83	6	5.66	55	104	6	1 500	170
-1.69	13	16	16	71	123	166	111	73	5	6.16	59	111	2	1 000	150
-2.69	10	13	14	61	103	146	101	63	4	6.66	63	118	---	500	130
-3.69	7	10	12	51	83	126	91	53	3	7.16	67	125	---	---	110
-4.69	4	7	10	41	63	106	81	43	2	7.66	71	132	---	---	90
-5.69	1	4	8	31	43	86	71	33	1	8.16	75	139	---	---	70
-6.69	---	1	6	21	23	66	61	23	---	8.66	79	146	---	---	50

Monroe, Randolph, Washington Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 32 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -	_____	190	194	177
Percent of land area tillable - - -	_____	80.9	83.7	78.6
Gross receipts per acre - - - - -	_____	10.25	15.83	5.76
Total expenses per acre - - - - -	_____	9.96	10.84	10.00
Net receipts per acre - - - - -	_____	.29	4.99	-4.24
Value of land per acre- - - - -	_____	53	66	36
Total investment per acre - - - - -	_____	94	101	70
Acres in Corn - - - - -	_____	32	36	24
Oats - - - - -	_____	17	12	21
Wheat- - - - -	_____	52	70	28
Crop yields--Corn, bu. per acre - -	_____	18.7	20.8	14.5
Oats, bu. per acre - -	_____	22.3	27.4	17.8
Wheat, bu. per acre- -	_____	20.3	24.1	17.1
Value of feed fed to productive livestock- - - - -	_____	1,251	1,277	986
Returns per \$100 of feed fed to productive livestock - -	_____	131	155	102
Returns per \$100 invested in:				
All productive livestock- -	_____	117	158	91
Cattle- - - - -	_____	91	104	84
Hogs- - - - -	_____	163	218	121
Poultry - - - - -	_____	206	259	146
Dairy sales per dairy cow - - - - -	_____	93	92	79
Investment in productive livestock per acre - -	_____	7.35	6.44	6.22
Receipts from productive livestock per acre - -	_____	8.62	10.18	5.68
Man labor cost per \$100 gross income - - - - -	_____	51	37	86
Man labor cost per acre - - - - -	_____	5.22	5.81	4.95
Value of feed fed to horses - - - - -	_____	294	308	256
Power and machinery cost per crop acre - - - - -	_____	5.16	5.11	5.75
Expenses per \$100 gross income- - -	_____	97	68	174
Machinery cost per acre - - - -	_____	1.58	1.86	1.47
Farm improvements cost per acre	_____	.77	.44	.75
Farms with tractor- - - - -	_____	71%	80%	70%
Excess of sales over expenses - - -	_____	1,146	1,789	455
Decrease in inventory - - - - -	_____	236	-91	420

Meeting Low Prices for Farm Products With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

St. Clair County, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in St. Clair County, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 34 farmers in St. Clair County who kept financial records in the Illinois farm account project for 1930 earned as pay for the use of capital invested and for the management and risk of operating the business, an average of seven tenths of one percent on their total farm investments. A wage of \$50 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow one percent of the investment as pay for management, in this case amounting to \$224 a farm, there is nothing left as pay for the risk and use of capital invested in these farms. In fact the result is a net loss of three tenths of one percent. A second method of computing earnings is to deduct five percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$365 of having enough income to pay five percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$86 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$139 an acre. The land and improvements exclusive of the residence averaged \$105 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through

*B. W. Tillman, farm adviser in St. Clair County, cooperated in supervising and collecting the records on which this report is based.

their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$656 while the surplus of sales over expenses was \$1756. For the more successful farms, the corresponding figures were \$384 reduction in inventory and \$2321 surplus of income over expense. For the less successful farms the figures were \$1089 reduction in inventory and \$1569 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies pertains chiefly to corn and hay, since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops, however, is stored, the small grains, especially wheat, being marketed before inventory date on many farms. The large decrease in inventory on the less successful farms in this case was chiefly a result of reduced supplies of feed and grain on hand at the close of the year.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records, the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$1547 a farm.

The two groups of farms are comparable so far as acreage is concerned. This

is indicated by the fact that there was only 15 acres difference in average size between the most profitable 11 farms and the least profitable 11 farms, the average size of all farms being 161 acres. The difference in percentage of tillable land was only 2 percent. Difference in acreage was not an important factor in the difference in income. In fact, reports of this kind have often shown the more successful farms somewhat smaller. It is probable that the extra 10 acres of tillable land which the more successful farms averaged did give some advantage in lower costs per acre for labor and equipment. The big difference between the two groups, however, was in income and not in expenses. The difference in gross income in other years and other areas has usually been between \$2000 and \$3000. For this area in the depression year of 1930 the difference was \$1405. Farmer's of this section of the state often find it difficult to do a large enough gross business and a larger acreage per farm does of course help some in this direction.

One of the important advantages of the more successful farms was that of larger crop yields. They produced $11\frac{1}{2}$ bushels more corn, 7 bushels more oats, and 6 bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 9 acres more corn, 17 acres more wheat, and 8 acres less oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$154 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$83. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$71 from each \$100 worth of feed on the most profitable 11 farms was an important factor in their larger net incomes. On over \$1700 worth of feed which was fed on the average farm in this area this advantage of \$71 a hundred amounts to a total of more than \$1200 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$131 dairy sales per dairy cow as compared with \$127 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference, each of them having about \$10 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was higher on farms on the more successful group. They had 21 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$33 as compared with \$59 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 11 farms had an advantage of \$21 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was 63 cents higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group and there is no evidence of a corresponding return for the extra cost.

The situation is summed up in the gross receipts and expense per acre. The most profitable 11 farms had an average gross income of \$20.43 and an expense of \$14.85 an acre as compared with \$13.39 income and \$17.24 expense on the least profitable 11 farms. This resulted in an average net income of \$5.58 and a net loss of \$3.85 an acre respectively.

The following table presents some comparative investment and earnings data on accounting farms in St. Clair County for the period 1928-1930 inclusive. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$7 an acre in the three year period and were lowest in 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In three years it has varied from nothing to \$10.21.

Comparative Earnings and Investment Figures on Farms in St. Clair County for 1928-1930

Items	1928	1929	1930
Numbers of farms - - - - -	32	31	34
Average size of farms, acres - - - - -	151	158	161
Average rate earned, to pay for management, risk and capital- - - - -	6.3%	6.9%	0.7%
Average labor and management wage- - - - -	\$874	\$1021	\$-365
Average value of land per acre - - - - -	93	88	86
Average investment per acre- - - - -	140	137	139
Investment in livestock per farm - - - - -	1682	1897	1949
Investment in cattle per farm- - - - -	812	938	1009
Investment in hogs per farm- - - - -	232	309	305
Investment in poultry per farm - - - - -	181	200	221
Gross income per acre- - - - -	22.78	23.12	14.68
Operating cost per acre- - - - -	13.98	13.61	13.72
Net increase from crops per farm - - - - -	1307	1286	271
Miscellaneous income per farm- - - - -	43	44	79
Livestock income per farm- - - - -	2098	2333	2009
Gross income per farm- - - - -	3448	3663	2359
Cattle income per farm - - - - -	331	263	114
Dairy sales per farm - - - - -	927	930	894
Hog income per farm- - - - -	395	595	484
Poultry income per farm- - - - -	400	521	510
Average yield corn in bu.- - - - -	52	48	25
Average yield wheat in bu. - - - - -	8	12	20

St. Clair County, 1930

Item	Your farm	Average of 34 farms	11 most profitable farms	11 least profitable farms
Capital Investments--Land - - - - -		13 766	15 735	12 471
Farm Improvements - - - - -		3 138	3 083	4 040
Horses - - - - -		398	295	450
Cattle - - - - -		1 009	1 039	1 187
Hogs - - - - -		305	351	295
Sheep - - - - -		14	9	3
Bees - - - - -		2	---	3
Poultry - - - - -		221	184	238
Livestock--Total - - - - -		1 949	1 878	2 176
Machinery and equipment - - - - -		1 348	1 669	1 262
Feed, grain and supplies - - - - -		2 161	2 271	2 303
Total Investment - - - - -	\$	\$22 362	\$ 24 636	\$22 252
Receipts--Net Increases - - - - -				
Horses - - - - -		---	---	29
Cattle - - - - -		114	197	46
Hogs - - - - -		484	663	370
Sheep - - - - -		7	3	---
Bees - - - - -		---	---	---
Poultry - - - - -		151	167	130
Egg sales - - - - -		359	362	473
Dairy sales - - - - -		894	956	986
Livestock--Total - - - - -		2 009	2 348	2 034
Feed, grain and supplies - - - - -		271	1 090	---
Labor off farm - - - - -		74	32	42
Miscellaneous receipts - - - - -		5	11	---
Total Receipts--Net Increases - - - - -	\$	\$ 2 359	\$ 3 481	\$ 2 076
Expenses--Net Decreases - - - - -				
Farm Improvements - - - - -		155	141	177
Horses - - - - -		18	37	---
Miscellaneous livestock decreases - - - - -		---	---	---
Machinery and equipment - - - - -		351	442	311
Feed, grain and supplies - - - - -		---	---	467
Livestock expense - - - - -		32	29	34
Crop expense - - - - -		216	259	202
Hired labor - - - - -		243	351	182
Taxes - - - - -		219	258	198
Miscellaneous expenses - - - - -		25	27	25
Total Expenses--Net Decreases - - - - -	\$	\$ 1 259	\$ 1 544	\$ 1 596
Receipts Less Expenses - - - - -	\$	\$ 1 100	\$ 1 937	\$ 480
Total unpaid labor - - - - -		945	987	1 077
Operator's labor - - - - -		598	600	595
Family labor - - - - -		347	387	482
Net income from investment and management - - - - -		155	950	-597
Rate earned on investment - - - - -	%	.69 %	3.86 %	-2.68 %
Return to capital and operator's labor and management - - - - -		753	1 550	-2
5 percent of capital invested - - - - -		1 118	1 232	1 112
Labor and management wage - - - - -	\$	\$ -365	\$ 318	\$ -1 114

St. Clair County, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operat- ing expense	Per acre	Per farm	
7.69	46	50	34	245	305	374	257	191	16	2.10	20	58	36	6 600	300
6.69	43	47	32	225	285	354	237	181	15	2.60	24	63	33	6 000	280
5.69	40	44	30	205	265	334	217	171	14	3.10	28	68	30	5 400	260
4.69	37	41	28	185	245	314	197	161	13	3.60	32	73	27	4 800	240
3.69	34	38	26	165	225	294	177	151	12	4.10	36	78	24	4 200	220
2.69	31	35	24	145	205	274	157	141	11	4.60	40	83	21	3 600	200
1.69	28	32	22	125	185	254	137	131	10	5.10	44	88	18	3 000	180
0.69	25	29	20	105	165	234	117	121	9	5.60	48	93	15	2 400	160
-1.31	22	26	18	85	145	214	97	111	8	6.10	52	98	12	1 800	140
-1.31	19	23	16	65	125	194	77	101	7	6.60	56	103	9	1 200	120
-2.31	16	20	14	45	105	174	57	91	6	7.10	60	108	6	600	100
-3.31	13	17	12	25	85	154	37	81	5	7.60	64	113	3	---	80
-4.31	10	14	10	5	65	134	17	71	4	8.10	68	118	---	---	60
-5.31	7	11	8	---	45	114	---	61	3	8.60	72	123	---	---	40
-6.31	4	8	6	---	25	94	---	51	2	9.10	76	128	---	---	20

St. Clair County, 1930

Factors helping to analyze the farm business	Your farm	Average of 34 farms	11 most profitable farms	11 least profitable farms
Size of farm--acres - - - - -	_____	161	170	155
Percent of land area tillable - - -	_____	90.9	90.3	92.5
Gross receipts per acre - - - - -	_____	14.68	20.43	13.39
Total expenses per acre - - - - -	_____	13.72	14.85	17.24
Net receipts per acre - - - - -	_____	.96	5.58	-3.85
Value of land per acre- - - - -	_____	86	92	80
Total investment per acre - - - - -	_____	139	145	144
Acres in Corn - - - - -	_____	39	43	34
Oats - - - - -	_____	20	16	24
Wheat- - - - -	_____	43	51	34
Crop yields--Corn, bu. per acre- - -	_____	25.1	32.1	20.7
Oats, bu. per acre- - -	_____	29.2	34.5	27.2
Wheat, bu. per acre - - -	_____	19.8	23.1	17.1
Value of feed fed to productive livestock- - - - -	_____	1713	1526	2424
Returns per \$100 of feed fed to productive livestock - - -	_____	117	154	83
Returns per \$100 invested in:				
All productive livestock- - -	_____	135	144	126
Cattle- - - - -	_____	105	109	94
Hogs- - - - -	_____	165	189	142
Poultry - - - - -	_____	234	256	263
Dairy sales per dairy cow - - - - -	_____	121	131	127
Investment in productive livestock per acre - - -	_____	9.26	9.54	10.25
Receipts from productive livestock per acre - - -	_____	12.50	13.78	12.94
Man labor cost per \$100 gross income - - - - -	_____	48	38	59
Man labor cost per acre - - - - -	_____	7.08	7.72	7.93
Value of feed fed to horses - - - - -	_____	328	260	432
Power and machinery cost per crop acre - - - - -	_____	5.60	5.56	6.19
Expenses per \$100 gross income- - -	_____	93	73	129
Machinery cost per acre - - - - -	_____	2.18	2.59	2.01
Farm improvements cost per acre	_____	.96	.83	1.14
Farms with tractor- - - - -	_____	50%	27%	45%
Excess of sales over expenses - - -	_____	1756	2321	1569
Decrease in inventory - - - - -	_____	656	384	1089

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

Clay, Jefferson, Edwards, Marion, Richland and Wayne Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, J. Ackerman, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921 one hundred farms in Woodford County which is typical of central Illinois had an average net loss of practically one percent of the total farm investment. In 1920 thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Clay, Jefferson, Edwards, Marion, Richland and Wayne counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 34 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned nothing as pay for the use of capital invested and for the management and risk of operating the business. In fact they lost an average of 3 percent on their total farm investments. A wage of \$50 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$121 a farm, the loss is then 4 percent of the investment. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group lacked \$382 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$37 an acre not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$67 an acre. The land and improvements exclusive of the residence averaged \$46 an acre.

It is of some interest to note that other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 152 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8

*C. S. Love, C. E. Twigg, W. D. Murphy, F. J. Blackburn, C. L. Beatty and L. L. Corrie farm advisers in Edwards, Marion, Richland, Wayne, Clay and Jefferson counties respectively, cooperated in supervising and collecting the records on which this report is based.

percent and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm also for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$422 while the surplus of sales over expenses was \$514. For the more successful farms, the corresponding figures were \$114 reduction in inventory and \$1016 surplus of income over expense. For the less successful farms the figures were \$393 and \$386 respectively. It is evident that the farms in the low earnings group do show a greater writing off of inventories but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930 the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay since the small grains generally gave normal yields in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is significant, however, since the difference in net income amounts to \$844 a farm.

The two groups of farms show considerable difference in average size. The more successful farms averaged 226 acres as compared with 127 acres for the less successful farms. In this area the average farm does too small a volume of business and anything which gives a larger volume of gross sales usually adds greatly to the success of business. Besides larger acreage, sales may be increased by increasing the size of the dairy, poultry, or fruit enterprises. These three enterprises take considerable labor but they normally result in larger income per acre and hence in a larger gross business.

One of the important advantages of the more successful farms was that of larger crop yields. They produced 6 bushels more corn, 3 bushels more oats, and 4 bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 11 acres more corn, 16 acres more wheat, and 11 acres more oats.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$124 of livestock income from each \$100 worth of feed other than pasture while the less successful farmers had a corresponding income of only \$92. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms but the additional \$32 from each \$100 worth of feed on the most profitable 11 farms was an important factor in their larger net incomes. On over \$1100 worth of feed which was fed on the average farm in this area this advantage of \$32 a hundred amounts to a total of more than \$352 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and poultry separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$70 dairy sales per dairy cow as compared with \$44 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference each of them having about \$7 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was much higher on farms of the more successful group. They had \$2.09 an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$49 as compared with \$93 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 11 farms had an advantage of \$44 for each \$100 of income.

The combined cost of feed for horses, horse depreciations and power and machinery per crop acre was \$1.68 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of this group.

The situation is summed up in the gross receipts and expense per acre. The most profitable 11 farms had an average gross income of \$7.41 and an expense of \$6.94 an acre as compared with \$6.15 income and \$11.93 expense on the least profitable 11 farms. This resulted in average net income of 47 cents and a net loss of \$5.78 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in the area covered by this report for the period 1929-1930. For 1929 the accounting farms in this area reported an average rate earned of 4.9%. For 1930 the corresponding figure is a net loss of 3%. The unprecedented drought of 1930 affected this area much more than it did central and northern Illinois. This is indicated in the average corn yield which fell from 28 bushels in 1929 to 12 bushels in 1930. Other feed crops especially hay and pasture gave very low yields. The combination of low yields and low prices due to an acute business depression proved disastrous to the farmers of this area as this report shows clearly.

Comparative Earnings and Investment Figures on Farms in Clay, Jefferson,
Edwards, Marion, Richland and Wayne Counties
for 1929-1930

	1929	1930
Number of farms- - - - -	46	34
Average size of farms, acres - - - - -	181	181
Average rate earned, to pay for management, risk and capital- - - - -	4.9%	3% loss
Average labor and management wage- - - - -	\$534	\$-382
Average value of land per acre - - - - -	37	37
Average investment per acre- - - - -	67	67
Investment in livestock per farm - - - - -	1,539	1,604
Investment in cattle per farm- - - - -	777	771
Investment in hogs per farm- - - - -	102	163
Investment in poultry per farm - - - - -	206	201
Gross income per acre- - - - -	11.20	6.84
Operating cost per acre- - - - -	7.94	8.53
Net increase from crops per farm - - - - -	380	000
Miscellaneous income per farm- - - - -	79	57
Livestock income per farm- - - - -	1,569	1,180
Gross income per farm- - - - -	2,028	1,237
Cattle income per farm - - - - -	316	101
Dairy sales per farm - - - - -	424	348
Hog income per farm- - - - -	272	316
Poultry income per farm- - - - -	484	398
Average yield corn in bu.- - - - -	28	12
Average yield wheat in bu. - - - - -	12	16

Clay, Jefferson, Edwards, Marion, Richland and Wayne Counties, 1930

Item	Your farm	Average of 34 farms	11 most profitable farms	11 least profitable farms
<u>Capital Investments--Land</u> - - - - -		6,651	8,012	4,424
Farm Improvements - - - - -		1,788	2,118	1,291
Horses- - - - -		287	278	253
Cattle- - - - -		771	958	668
Hogs- - - - -		163	182	68
Sheep - - - - -		170	347	98
Bees- - - - -		12	---	2
Poultry - - - - -		201	214	149
Livestock--Total - - - - -		1,604	1,979	1,238
Machinery and equipment- - - - -		906	1,097	564
Feed, grain and supplies - - - - -		1,134	1,069	685
Total Investment- - - - -	\$	\$12,083	\$14,275	\$8,202
<u>Receipts--Net Increases</u> - - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		101	152	20
Hogs- - - - -		316	356	179
Sheep - - - - -		17	28	17
Bees- - - - -		---	---	1
Poultry - - - - -		88	125	87
Egg sales - - - - -		310	340	168
Dairy sales - - - - -		348	584	231
Livestock--Total - - - - -		1,180	1,585	703
Feed, grain and supplies - - - - -		---	14	---
Labor off farm - - - - -		51	72	73
Miscellaneous receipts - - - - -		6	7	8
Total Receipts--Net Increases - - -	\$	\$ 1,237	\$ 1,678	\$ 784
<u>Expenses--Net Decreases</u>				
Farm Improvements - - - - -		121	128	87
Horses- - - - -		9	1	32
Miscellaneous livestock decreases				
Bees		7	---	---
Machinery and equipment - - - - -		171	206	149
Feed, grain and supplies- - - - -		154	---	248
Livestock expense - - - - -		15	17	12
Crop expense- - - - -		135	159	92
Hired labor - - - - -		62	78	39
Taxes - - - - -		149	163	112
Miscellaneous expenses- - - - -		22	24	20
Total Expenses--Net Decreases - - -	\$	\$ 845	\$ 775	\$ 791
Receipts Less Expenses- - - - -	\$	\$ 392	\$ 902	\$ -7
Total unpaid labor- - - - -		751	795	730
Operator's labor- - - - -		581	605	582
Family labor- - - - -		170	190	148
Net income from investment and management - - -		-359	107	-737
Rate earned on investment - - - - -	%	-2.97%	.75%	-8.99%
Return to capital and operator's labor and management		222	712	-155
5 percent of capital invested - -		604	714	410
Labor and management wage - - - - -	\$	\$ -382	-2	\$ -565

Clay, Jefferson, Edwards, Marion, Richland and Wayne Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre.	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm	
4.0	33	42	30	131	356	340	176	127	14	---	28	59	21	4 700	320
3.0	30	39	28	121	336	320	166	117	13	---	33	69	19	4 200	300
2.0	27	36	26	111	316	300	156	107	12	---	38	79	17	3 700	280
1.0	24	33	24	101	296	280	146	97	11	1.32	43	89	15	3 200	260
0.0	21	30	22	91	276	260	136	87	10	1.82	48	99	13	2 700	240
-1.0	18	27	20	81	256	240	126	77	9	2.32	53	109	11	2 200	220
-2.0	15	24	18	71	236	220	116	67	8	2.82	58	119	9	1 700	200
-3.0	12	21	16	61	216	200	106	57	7	3.32	63	129	7	1 200	180
-4.0	9	18	14	51	196	180	96	47	6	3.82	68	139	5	700	160
-5.0	6	15	12	41	176	160	86	37	5	4.32	73	149	5	200	140
-6.0	3	12	10	31	156	140	76	27	4	4.82	78	159	---	---	120
-7.0	---	9	8	21	136	120	66	17	3	5.32	83	169	---	---	100
-8.0	---	6	6	11	116	100	56	---	2	5.82	88	179	---	---	80
-9.0	---	---	---	---	96	80	46	---	---	6.32	93	189	---	---	60
-10.0	---	---	---	---	76	60	36	---	---	5.82	98	199	---	---	40

Clay, Jefferson, Edwards, Marion, Richland, and Wayne Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 34 farms	11 most profitable farms	11 least profitable farms
Size of farm--acres - - - - -	_____	181	226	127
Percent of land area tillable - - -	_____	86.1	89.3	82.5
Gross receipts per acre - - - - -	_____	6.84	7.41	6.15
Total expenses per acre - - - - -	_____	8.83	6.94	11.93
Net receipts per acre - - - - -	_____	-1.99	.47	-5.78
Value of land per acre- - - - -	_____	37	35	35
Total investment per acre - - - - -	_____	67	63	64
Acres in Corn - - - - -	_____	35	39	28
Oats - - - - -	_____	17	20	9
Wheat- - - - -	_____	15	20	4
Barley - - - - -	_____	--	--	--
Soybeans - - - - -	_____	--	--	--
Crop yields--Corn, bu. per acre- - -	_____	12.3	14.0	7.7
Oats, bu. per acre- - -	_____	20.9	23.0	20.1
Wheat, bu. per acre - -	_____	16.4	17.3	13.1
Barley, bu. per acre- -	_____	--	--	--
Soybeans, bu. per acre-	_____	--	--	--
Value of feed fed to productive livestock- - - - -	_____	1,110	1,282	767
Returns per \$100 of feed fed to productive livestock - -	_____	106	124	92
Returns per \$100 invested in:				
All productive livestock- -	_____	95	98	77
Cattle- - - - -	_____	61	78	41
Hogs- - - - -	_____	216	210	296
Poultry - - - - -	_____	199	218	166
Dairy sales per dairy cow - - - - -	_____	57	70	44
Investment in productive livestock per acre -	_____	6.85	7.14	7.15
Receipts from productive livestock per acre -	_____	6.49	7.00	5.52
Man labor cost per \$100 gross income- - - - -	_____	63	49	93
Man labor cost per acre - - - - -	_____	4.30	3.62	5.71
Value of feed fed to horses - - - -	_____	194	167	145
Power and machinery cost per crop acre- - - - -	_____	3.32	2.67	4.35
Expenses per \$100 gross income- - -	_____	129	94	194
Machinery cost per acre - - - -	_____	.95	.91	1.17
Farm improvements cost per acre	_____	.67	.57	.68
Farms with tractor- - - - -	_____	50%	55%	55%
Excess of sales over expenses - - -	_____	814	1,016	386
Decrease in inventory - - - - -	_____	422	114	393

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.39 in 1920-1922 when the records from that county

Annual Farm Business Report

Wabash, Clark, Crawford and Lawrence Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, L. Wright, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921 one hundred farms in Woodford County which is typical of central Illinois had an average net loss of practically one percent of the total farm investment. In 1920 thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930 it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in Wabash, Clark, Crawford and Lawrence counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 32 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned nothing to pay for the use of capital invested and for the management and risk of operating the business. In fact the income and expense were almost exactly equal when a wage of \$50 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$261 a farm, the result is a net loss of one percent. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator and assume that the remaining income is pay for labor and management. Following this plan it is found that the average farm operator of this group lacked \$724 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$80 an acre not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$120 an acre. The land and improvements exclusive of the residence average \$94 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For 1929, 1520 companies were reported as earning 12.8 percent and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm account-

*H. H. Lett, R. E. Apple, H. Allison, and H. C. Wheeler, farm advisers in Wabash, Clark, Crawford, and Lawrence counties, respectively, cooperated in supervising and collecting the records on which this report is based.

ing project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930 one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm and for the high and low earnings groups. These indicate that for the average farm in this area in 1930 the reduction in inventory amounted to \$536 while the surplus of sales over expenses was \$1282. For the more successful farms the corresponding figures were \$318 reduction in inventory and \$2237 surplus of income over expense. For the less successful farms the figures were \$835 reduction in inventory and \$575 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater decrease in inventories but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930 the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay since the small grains generally yielded well in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$2347 a farm.

The most profitable 10 farms averaged 75 acres larger than the least profitable 10 farms. One of the chief problems of farms of this area is to do a large enough volume of business. In this case their larger acreage helped the more successful farms

to yield a larger volume and at the same time enabled them to keep their labor, power and machinery costs at a lower level. Other methods of increasing the volume of business include the enlargement of the intensive enterprises such as dairying, poultry production or fruit growing.

One of the important advantages of the more successful farms was that of larger crop yields. They produced 9 bushels more corn and 2 bushels more oats per acre than the less successful farms. The latter group had slightly higher yields of wheat but they averaged only 14 acres of wheat per farm. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 26 acres more corn, 30 acres more wheat, and 7 acres more oats. Their larger acreage and higher yield gave the more profitable farms an average of 2969 bushels of grain from the 1930 crop as compared with 1289 bushels on the less successful farms.

On the more profitable farms one of the largest advantages was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$157 of livestock income from each \$100 worth of feed other than pasture while the less successful farmers had a corresponding income of only \$113. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was little if any margin of profit from feeding instead of selling crops on the less successful farms but the additional \$44 from each \$100 worth of feed on the most profitable 10 farms was an important factor in their larger net incomes. On over \$2000 worth of feed which was fed on the average farm in this area this advantage of \$44 a hundred amounts to a total of more than \$900 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$170 dairy sales per dairy cow as compared with \$98 per dairy cow on the less profitable farms. As to the amount of livestock, the less successful farms had nearly \$2 an acre more investment in livestock than the more successful farms. Under 1930 conditions the operators of these least successful farms had to buy over \$1000 worth of feed per farm and they secured little if any margin of profit from feeding.

The labor efficiency was much higher on farms of the more successful group. They had \$1.65 an acre less labor cost. Due to their larger incomes from less labor, their labor cost per \$100 income was only \$29 as compared with \$48 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 10 farms had an advantage of \$19 for each \$100 of income.

The combined cost of feed for horses, horse depreciations and power and machinery per crop acre was \$1.56 higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group and there is no evidence of a corresponding return for the extra cost. They had a handicap as noted above in their smaller acreage over which to distribute power and machinery costs.

The situation is summed up in the gross receipts and expense per acre. The most profitable 10 farms had an average gross income of \$16.21 and an expense of \$11.35 an acre as compared with \$13.11 income and \$18.94 expense on the least profitable 10 farms. This resulted in an average net income of \$4.86 and a net loss of \$5.83 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in the area covered by this report for the period 1928-1930. The rate earned was lowest for 1930. The livestock income per farm has remained very stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In three years it has varied from nothing to \$595.

Comparative Earnings and Investment Figures on Farms in Wabash, Clark,
Crawford and Lawrence Counties for 1928-1930

Items	1928 ¹	1929 ¹	1930
Numbers of farms - - - - -	47	43	32
Average size of farms, acres - - - - -	206	228	218
Average rate earned, to pay for management, risk and capital- - - - -	3.0%	4.8%	0.0%
Average labor and management wage- - - - -	\$ 78	\$595	\$-724
Average value of land per acre - - - - -	85	114	80
Average investment per acre- - - - -	125	156	120
Investment in livestock per farm - - - - -	2117	2470	2251
Investment in cattle per farm- - - - -	857	1160	1014
Investment in hogs per farm- - - - -	623	557	609
Investment in poultry per farm - - - - -	167	158	132
Gross income per acre- - - - -	14.54	19.34	13.30
Operating cost per acre- - - - -	10.84	11.80	13.27
Net increase from crops per farm - - - - -	307	1350	000
Miscellaneous income per farm- - - - -	72	87	110
Livestock income per farm- - - - -	2622	2972	2791
Gross income per farm- - - - -	3001	4409	2901
Cattle income per farm - - - - -	1132	579	256
Dairy sales per farm - - - - -	390	329	656
Hog income per farm- - - - -	1132	1597	1578
Poultry income per farm- - - - -	367	396	280
Average yield corn in bu.- - - - -	32	40	19
Average yield wheat in bu. - - - - -	5 $\frac{1}{2}$	19	14

¹Records from Clark, Crawford, Christian and Shelby counties 1928 and 1929. A large proportion of Christian County records in 1929 had the effect of raising the average value of land for that year.

Wabash, Clark, Crawford and Lawrence Counties, 1930

Item	Your farm	Average of 32 farms	10 most profitable farms	10 least profitable farms
<u>Capital Investments--Land</u> - - - - -		17,440	23,275	14,492
Farm Improvements - - - - -		3,114	4,257	2,485
Horses- - - - -		413	544	368
Cattle- - - - -		1,014	1,068	1,159
Hogs- - - - -		609	970	577
Sheep - - - - -		64	---	105
Bees- - - - -		19	21	35
Poultry - - - - -		132	136	115
Livestock--Total - - - - -		2,251	2,739	2,359
Machinery and equipment- - - - -		1,483	1,545	1,300
Feed, grain and supplies - - - - -		1,845	2,178	1,497
Total Investment- - - - -	\$	\$26,133	\$33,994	\$22,133
<u>Receipts--Net Increases</u> - - - - -				
Horses- - - - -		---	---	---
Cattle- - - - -		256	192	341
Hogs- - - - -		1,578	2,584	1,123
Sheep - - - - -		11	---	16
Bees- - - - -		---	---	---
Poultry - - - - -		70	61	55
Egg sales - - - - -		210	153	147
Dairy sales - - - - -		666	1,086	686
Livestock--Total - - - - -		2,791	4,091	2,368
Feed, grain and supplies - - - - -		---	---	---
Labor off farm - - - - -		101	122	60
Miscellaneous receipts - - - - -		9	9	2
Total Receipts--Net Increases - - - - -	\$	\$ 2,901	\$ 4,222	\$ 2,430
<u>Expenses--Net Decreases</u> - - - - -				
Farm Improvements - - - - -		187	210	193
Horses- - - - -		8	19	2
Miscellaneous livestock decreases				
Bees		3	6	1
Machinery and equipment - - - - -		420	378	394
Feed, grain and supplies- - - - -		509	277	1,125
Livestock expense - - - - -		69	144	43
Crop expense- - - - -		205	242	202
Hired labor - - - - -		388	598	396
Taxes - - - - -		341	405	310
Miscellaneous expenses- - - - -		25	24	24
Total Expenses--Net Decreases - - - - -	\$	\$ 2,155	\$ 2,303	\$ 2,690
Receipts Less Expenses- - - - -	\$	\$ 746	\$ 1,919	\$ -260
Total unpaid labor- - - - -		739	652	820
Operator's labor- - - - -		576	540	600
Family labor- - - - -		163	112	220
Net income from investment and management - - - - -		7	1,267	-1,080
<u>Rate earned on investment</u> - - - - -	%	0.03 %	3.73 %	-4.88 %
Return to capital and operator's labor and management		583	1,807	-480
5 percent of capital invested - - - - -		1,307	1,700	1,107
Labor and management wage - - - - -	\$	\$ -724	\$ 107	\$ -1,587

Tabash, Clark, Crawford and Lawrence Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operat-ing expense	Per acre	Per farm	
7.03	40	47	28	167	415	365	204	256	15	.85	16	65	34	6 500	360
6.03	37	44	26	157	395	345	194	236	14	1.35	19	70	31	6 000	340
5.03	34	41	24	147	375	325	184	216	13	1.85	22	75	28	5 500	320
4.03	31	38	22	137	355	305	174	196	12	2.35	25	80	25	5 000	300
3.03	28	35	20	127	335	285	164	176	11	2.85	28	85	22	4 500	280
2.03	25	32	18	117	315	265	154	156	10	3.35	31	90	19	4 000	260
1.03	22	29	16	107	295	245	144	136	9	3.85	34	95	15	3 500	240
.03	19	26	14	97	275	225	134	116	8	4.35	37	100	13	3 000	220
-.97	16	23	12	87	255	205	124	96	7	4.85	40	105	10	2 500	200
-1.97	13	20	10	77	235	185	114	76	6	5.35	43	110	7	2 000	180
-2.97	10	17	8	67	215	165	104	56	5	5.85	46	115	4	1 500	160
-3.97	7	14	6	57	195	145	94	36	4	6.35	49	120	1	1 000	140
-4.97	4	11	4	47	175	125	84	16	3	6.85	52	125	---	500	120
-5.97	1	8	2	37	155	105	74	---	2	7.35	55	130	---	---	100
-6.97	---	5	---	27	135	85	64	---	1	7.85	58	135	---	---	80

Wabash, Clark, Crawford and Lawrence Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 32 farms	10 most profitable farms	10 least profitable farms
Size of farm--acres - - - - -	_____	218	250	185
Percent of land area tillable - - - - -	_____	85%	90%	83%
Gross receipts per acre - - - - -	_____	13.30	16.21	13.11
Total expenses per acre - - - - -	_____	13.27	11.35	18.94
Net receipts per acre - - - - -	_____	.03	4.86	-5.83
Value of land per acre- - - - -	_____	50	89	78
Total investment per acre - - - - -	_____	120	131	119
Acres in Corn - - - - -	_____	64	76	50
Oats - - - - -	_____	24	25	18
Wheat- - - - -	_____	26	44	14
Soybeans - - - - -	_____	4	3	4
Crop yields--Corn, bu. per acre - - - - -	_____	19.4	22.4	13.3
Oats, bu. per acre - - - - -	_____	25.9	25.8	24.1
Wheat, bu. per acre - - - - -	_____	14.0	13.5	15.1
Value of feed fed to productive livestock- - - - -	_____	2,074	2,599	2,101
Returns per \$100 of feed fed to productive livestock - - - - -	_____	134	157	113
Returns per \$100 invested in:				
All productive livestock- - - - -	_____	162	198	131
Cattle- - - - -	_____	97	125	96
Hogs- - - - -	_____	275	289	218
Poultry - - - - -	_____	225	183	208
Dairy sales per dairy cow - - - - -	_____	116	170	98
Investment in productive livestock per acre - - - - -	_____	7.87	7.90	9.74
Receipts from productive livestock per acre - - - - -	_____	12.78	15.69	12.77
Man labor cost per \$100 gross income- - - - -	_____	37	29	48
Man labor cost per acre - - - - -	_____	4.95	4.64	6.29
Value of feed fed to horses - - - - -	_____	212	240	187
Power and machinery cost per crop acre- - - - -	_____	4.36	3.48	5.04
Expenses per \$100 gross income- - - - -	_____	100	70	144
Machinery cost per acre - - - - -	_____	1.92	1.45	2.13
Farm improvements cost per acre - - - - -	_____	.86	.81	1.04
Farms with tractor- - - - -	_____	59%	50%	50%
Excess of sales over expenses - - - - -	_____	1,282	2,237	575
Decrease in inventory - - - - -	_____	536	318	835

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

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In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

Annual Farm Business Report

White, Pope, Gallatin, Saline and Williamson Counties, Illinois, 1930

Prepared by R. R. Hudelson, P. E. Johnston, W. A. Gilbert, and H. C. M. Case*

Illinois farmers had the lowest average net earnings for 1930 that they have experienced in nine years. Previous to 1922 there are not enough records available to give an adequate measure of the average level of farm earnings for the entire state. In 1921, one hundred farms in Woodford County, which is typical of central Illinois, had an average net loss of practically one percent of the total farm investment. In 1920, thirty-one farms in the same county had an average loss of one-tenth of one percent. For 1930 the accounts for Woodford County show a small net return of about 1.7 percent on the investment. It appears, therefore, that for central Illinois, 1930 farm earnings were slightly higher than for 1920 and 1921. The same statement seems to hold true for northern Illinois. Farm account keepers in the southern part of the state, however, show an average net loss for 1930. They suffered more from drought than did the farmers of central and northern Illinois.

The above discussion is based on the records of those farms whose operators keep accounts and submit them to the University of Illinois for analysis. Repeated studies of earnings on all farms in selected areas have shown that average earnings for all farms are lower than for farms included in this accounting service. The difference has been found to be consistently about 2 percent of the investment in favor of the account keepers. If we deduct this 2 percent from the present indicated rate earned on accounting farms in Illinois for 1930, it seems evident that the average Illinois farmer earned no return on his farm investment last year. In considering the following figures for the farm account cooperators in White, Pope, Gallatin, Saline and Williamson Counties, allowance should be made for the fact that the earnings shown are higher than for the average farm.

The 41 farmers in these counties who kept financial records in the Illinois farm account project for 1930 earned no pay for the use of capital invested and for the management and risk of operating the business. Instead they experienced an average net loss of 1.5 percent on their total farm investments. A wage of \$50 a month was deducted as pay for the operator's labor, no salary being deducted for management. If we allow 1 percent of the investment as pay for management, in this case amounting to \$146 a farm, the net loss becomes 2.5% of the capital invested in these farms. A second method of computing earnings is to deduct 5 percent of the investment as pay for the risk and use of capital instead of deducting a labor wage for the operator, and assume that the remaining income is pay for labor and management. Following this plan, it is found that the average farm operator of this group lacked \$368 of having enough income to pay 5 percent on his investment with no pay for his labor and management. The average value of the land included in the report was \$50 an acre, not including buildings. Other items including improvements, equipment, livestock, and feed made a total investment of \$344 an acre. The land and improvements exclusive of the residence averaged \$62 an acre.

Other industries than farming also suffered a slump in earnings for 1930. For each of the last three years we have shown in these reports the average rate earned on invested capital by a large number of companies in various industries other than agriculture. These figures were assembled and reported by a nationally known bank. For 1928 the average rate reported for 1520 companies was 11.7 percent. For

*C. W. Simpson, A. J. Andrews, J. G. McCall, J. E. Whitchurch and Dee Small, farm advisers in White, Pope, Gallatin, Saline and Williamson counties, respectively, cooperated in supervising and collecting the records on which this report is based.

1929, 1520 companies were reported as earning 12.8 percent, and for 1930, 1900 companies show 5.7 percent. Unlike farms, these companies pay for management through their salaries to officers and executives. Like the farms included in the Illinois farm accounting project, it is probable that the companies reported are more successful than the average of all companies in the same industries. The 1930 slump in earnings of other industries is here indicated as about as great as in farming, but since these other industries slumped from a much higher level they show the usual higher return as compared with farming.

In a year of declining prices such as that of 1930, one factor causing a lower rate earned is that of lower values for crops and livestock on hand at the close of the year as compared with the beginning of the year. There is some difference in the amount written off of inventories by different account keepers. Since the ending inventory of one year is the same as the beginning inventory of the next year, however, too high a closing inventory means too high a beginning inventory for the following year with a corresponding reduction in earnings for the second year. This is especially true when the products inventoried are sold during the second year. At the bottom of the table on page 7 there are data giving the 1930 net sales and the reduction in inventory of the average farm, and for the high and low earnings groups. These indicate that for the average farm in this area in 1930, the reduction in inventory amounted to \$452 while the surplus of sales over expenses was \$1036. For the more successful farms, the corresponding figures were \$155 reduction in inventory and \$1507 surplus of income over expense. For the less successful farms the figures were \$915 reduction in inventory and \$735 surplus of income over expense. It is evident that the farms in the low earnings group do show a greater writing off of inventories, but they also had on the average a much smaller surplus of income over expense. The surplus of income over expense comes nearer representing the amount of money the farmer has to spend during the current year than does the net income. For 1930, the reduction in crop inventories was a combination of lower prices and of smaller supplies due to the drought. The reduction in supplies applies chiefly to corn and hay, since the small grains generally yielded well in 1930. A very much larger proportion of the corn and hay crops is stored, however, the small grains, especially wheat, being marketed before inventory date on many farms.

On account of the difficulty in getting records of produce used by the farm family and by hired labor, these items are not included in the income and expense figures as stated in this report. The farm products used by the farm family have been found to range in value from \$425 to \$500 a year as an average for a large number of farms where they have been recorded. In analyzing these records the investment in the residence of the operator is left out of the farm inventory. Depreciation and upkeep on the residence also are not included. This is for the same reason that the business man in town does not include the cost of his residence as part of his business. The use of the house is considered an income from an investment outside of the farm business.

Every farm operator can gain ideas of value to him by studying the differences between those farms which are most successful and those which are least. To assist in making these comparisons, the tables on pages 5 and 7 show not only the figures for the individual farm and the average, but also for the one-third of the farms which were most successful and the third which were least successful. The term most successful is comparative only and does not indicate a high degree of farm prosperity since the farms included in this group constitute only a small fraction of all farms in the area, and they are very select. The difference in average earnings between the most successful third and the least successful third of the farms included in this report is very significant, however, since the difference in net income amounts to \$1685 a farm.

The two groups of farms are comparable so far as acreage is concerned. This is indicated by the fact that there was only 10 acres difference in average size between the most profitable 14 farms and the least profitable 14 farms, the average size of all farms being 173 acres. The difference in percentage of tillable land was only 5 percent. Difference in acreage was not an important factor in the difference in income. In fact, the more successful farms were smaller and had no advantage in size.

One of the important advantages of the more successful farms was that of larger crop yields. They produced $3\frac{1}{2}$ bushels more corn, 6 bushels more oats, and $6\frac{1}{2}$ bushels more wheat per acre than the less successful farms. The cost per acre for production usually does not increase in proportion to the increase in yield since the land charges for interest and taxes remain about the same and labor and power costs for preparing the land and planting the crop usually do not increase materially. Since these are among the largest items of cost, the increased income from larger yields goes mostly to increase net earnings. The difference in acreage devoted to the principal crops is of some importance. The more profitable farms averaged 6 acres more corn, 7 acres more oats, and 7 acres less wheat.

On the more profitable farms probably the largest advantage was that of higher efficiency in the livestock enterprises. The operators of these farms secured \$161 of livestock income from each \$100 worth of feed other than pasture, while the less successful farmers had a corresponding income of only \$102. The livestock income must cover other items of cost in addition to feed including labor, pasture, shelter, interest, etc. There was no margin of profit from feeding instead of selling crops on the less successful farms, but the additional \$59 from each \$100 worth of feed on the most profitable 14 farms was an important factor in their larger net incomes. On over \$1100 worth of feed which was fed on the average farm in this area this advantage of \$59 a hundred amounts to a total of more than \$650 a farm. Greater efficiency in the livestock enterprises is also shown by the larger returns per \$100 invested in all livestock as well as in cattle and hogs, separately. Further evidence of greater livestock efficiency on the more profitable farms is seen in the fact that they produced \$89 dairy sales per dairy cow as compared with \$53 per dairy cow on the less profitable farms. As to the amount of livestock, the two groups show little difference, each of them having about \$8 an acre invested in livestock exclusive of horses and mules.

The labor efficiency was much higher on farms of the more successful group. They had 63 cents an acre less labor cost. Due to their larger incomes from less labor their labor cost per \$100 income was only \$38 as compared with \$92 on the less successful farms. Measured, therefore, on the basis of labor cost per unit of income the most profitable 14 farms had an advantage of \$54 for each \$100 of income.

The combined cost of feed for horses, horse depreciations, and power and machinery per crop acre was 28 cents higher on the less successful farms. This is in spite of the fact that yields were lower on farms of the latter group. The extra power and equipment cost evidently did not produce a corresponding return.

The situation is summed up in the gross receipts and expense per acre. The most profitable 14 farms had an average gross income of \$14.33 and an expense of \$10.35 an acre as compared with \$6.71 income and \$13.29 expense on the least profitable 14 farms. This resulted in average net income of \$3.98 and a net loss of \$6.58 an acre respectively for the two groups.

The following table presents some comparative investment and earnings data on accounting farms in White, Pope, Gallatin, Saline and Williamson Counties for the period 1926-1930 inclusive. The rate earned was lowest for 1930. This is in spite of the fact that land values have been reduced about \$25 an acre in the 5 year period

and were lowest in 1930. It is interesting to note that the average operating cost per acre has remained very stable as compared with the gross income per acre. This is what is commonly found when data from a group of farms are averaged yet there is considerable variation between individual farms in the operating cost per acre. The livestock income per farm has remained relatively stable as compared with the income from crops. This is due in part at least to the fact that there is less effect of weather on livestock than on crop production. The wide variation in the amount realized by the farm operator for his labor and time is shown in the labor and management wage from year to year. In five years it has varied from nothing to \$957.

Comparative Earnings and Investment Figures on Farms in
White, Pope, Gallatin, Saline and Williamson Counties,
for 1926-1930

Items	1926 ¹	1927 ¹	1928 ¹	1929 ²	1930
Numbers of farms - - - - -	25	30	43	52	41
Average size of farms, acres - - -	205	180	168	166	173
Average rate earned, to pay for management, risk and capital- - -	6.6	4.2	2.7	6.3	-1.5
Average labor and management wage-	957	439	249	802	-368
Average value of land per acre - -	79	74	57	68	50
Average investment per acre- - - -	116	107	92	104	84
Investment in livestock per farm -	1883	1499	1512	1674	1779
Investment in cattle per farm- - -	505	372	472	686	751
Investment in hogs per farm- - - -	551	468	362	367	343
Investment in poultry per farm - -	168	188	175	163	188
Gross income per acre- - - - -	17.76	14.60	12.54	17.50	9.36
Operating cost per acre- - - - -	10.06	10.10	10.04	10.96	10.64
Net increase from crops per farm -	1343	516	338	680	000
Miscellaneous income per farm- - -	139	198	95	84	102
Livestock income per farm	2162	1909	1679	2141	1519
Gross income per farm- - - - -	3644	2623	2112	2905	1621
Cattle income per farm - - - - -	227	222	271	301	89
Dairy sales per farm - - - - -	231	531	371	430	334
Hog income per farm- - - - -	1215	732	590	919	711
Poultry income per farm- - - - -	453	402	378	450	367
Average yield corn in bu.- - - - -	38	36	32	44	19
Average yield wheat in bu. - - - -	25	13	7	16	16

¹Some records for Marion and Jefferson Counties included for 1926, 1927 and 1928.

²Records for Wabash and Edwards Counties included for 1929.

White, Pope, Gallatin, Saline and Williamson Counties, 1930

Item	Your farm	Average of 41 farms	14 most profitable farms	14 least profitable farms
Capital Investments--Land - - - - -		8,605	8,667	7,156
Farm Improvements - - - - -		2,068	1,845	2,067
Horses- - - - -		408	366	400
Cattle- - - - -		751	675	830
Hogs- - - - -		343	425	301
Sheep - - - - -		72	31	76
Bees- - - - -		17	9	26
Poultry - - - - -		188	235	185
Livestock-Total- - - - -		<u>1,779</u>	<u>1,741</u>	<u>1,818</u>
Machinery and equipment- - - - -		1,187	837	925
Feed, grain and supplies - - - - -		945	1,182	1,260
Total Investment- - - - -	\$	<u>\$14,584</u>	<u>\$14,272</u>	<u>\$ 13,226</u>
<u>Receipts--Net Increases- - - - -</u>				
Horses- - - - -		---	---	---
Cattle- - - - -		89	76	---
Hogs- - - - -		711	892	407
Sheep - - - - -		18	7	16
Bees- - - - -		---	---	1
Poultry - - - - -		98	100	79
Egg sales - - - - -		269	342	308
Dairy sales - - - - -		334	466	264
Livestock--Total - - - - -		<u>1,519</u>	<u>1,883</u>	<u>1,075</u>
Feed, grain and supplies - - - - -		---	94	---
Labor off farm - - - - -		96	210	16
Miscellaneous receipts - - - - -		6	5	5
Total Receipts--Net Increases - - -	\$	<u>\$ 1,621</u>	<u>\$ 2,192</u>	<u>\$ 1,096</u>
<u>Expenses--Net Decreases - - - - -</u>				
Farm Improvements - - - - -		154	150	187
Horses- - - - -		19	16	22
Miscellaneous livestock decreases <u>Cattle</u>		---	---	21
Machinery and equipment - - - - -		184	169	186
Feed, grain and supplies- - - - -		183	---	412
Livestock expense - - - - -		18	18	14
Crop expense- - - - -		135	141	115
Hired labor - - - - -		155	170	125
Taxes - - - - -		167	154	172
Miscellaneous expenses- - - - -		22	22	22
Total Expenses--Net Decreases - - -	\$	<u>\$ 1,037</u>	<u>\$ 840</u>	<u>\$ 1,276</u>
Receipts Less Expenses- - - - -	\$	<u>\$ 584</u>	<u>\$1,352</u>	<u>\$ -180</u>
Total unpaid labor- - - - -		806	743	896
Operator's labor- - - - -		583	600	573
Family labor- - - - -		223	143	323
Net income from investment and management - - -		-222	609	-1,076
<u>Rate earned on investment - - - - -</u>	%	<u>-1.52 %</u>	<u>4.27 %</u>	<u>-8.14 %</u>
Return to capital and operator's labor and management		361	1,209	-503
5 percent of capital invested - -		729	714	661
Labor and management wage - - - - -	\$	<u>\$ -368</u>	<u>\$ 495</u>	<u>\$ -1,164</u>

White, Pope, Gallatin, Saline and Williamson Counties, 1930

The numbers between the lines across the middle of the page are the approximate averages for your section of the state for the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per \$100 invested in			L. S. income per \$100 worth of feed fed	Dairy sales per dairy cow	Invest. per A. in live-stock	Power & equip. cost per crop acre	Cost per \$100 income		Gross receipts		Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry					Man labor	Operating expense	Per acre	Per farm	
5.48	40	38	30	130	373	340	205	208	14	.32	36	79	30	5 100	315
4.48	37	35	28	120	353	320	195	188	13	.82	39	84	27	4 600	293
3.48	34	32	26	110	333	300	185	168	12	1.32	42	89	24	4 100	273
2.48	31	29	24	100	313	280	175	148	11	1.82	45	94	21	3 600	253
1.48	28	26	22	90	293	260	165	128	10	2.32	48	99	18	3 100	233
.48	25	23	20	80	273	240	155	108	9	2.82	51	104	15	2 600	213
-.52	22	20	18	70	253	220	145	88	8	3.32	54	109	12	2 100	193
-1.52	19	17	16	60	233	200	135	68	7	3.82	57	114	9	1 600	173
-2.52	16	14	14	50	213	180	125	48	6	4.32	60	119	6	1 100	153
-3.52	13	11	12	40	193	160	115	28	5	4.82	63	124	3	600	133
-4.52	10	8	10	30	173	140	105	8	4	5.32	66	129	---	---	113
-5.52	7	5	8	20	153	120	95	---	3	5.82	69	134	---	---	93
-6.52	4	2	6	10	133	100	85	---	2	6.32	72	139	---	---	73
-7.52	1	---	4	---	113	80	75	---	1	6.82	75	144	---	---	53
-8.52	---	---	2	---	93	60	65	---	---	7.32	78	149	---	---	33

White, Pope, Gallatin, Saline and Williamson Counties, 1930

Factors helping to analyze the farm business	Your farm	Average of 41 farms	14 most profitable farms	14 least profitable farms
Size of farm--acres - - - - -	-----	173	153	163
Percent of land area tillable - - -	-----	82%	77%	82%
Gross receipts per acre - - - - -	-----	9.36	14.33	6.71
Total expenses per acre - - - - -	-----	10.64	10.35	13.29
Net receipts per acre - - - - -	-----	-1.28	3.98	-6.58
Value of land per acre- - - - -	-----	50	57	44
Total investment per acre - - - - -	-----	84	93	81
Acres in Corn - - - - -	-----	39.1	41.0	34.7
Oats - - - - -	-----	8.6	10.0	3.1
Wheat- - - - -	-----	18.3	11.6	18.6
Soybeans - - - - -	-----	.9	1.1	---
Crop yields--Corn, bu. per acre - -	-----	19.1	22.4	18.9
Oats, bu. per acre - -	-----	17.4	21.3	15.1
Wheat, bu. per acre - -	-----	16.4	20.7	14.1
S. beans, bu. per acre -	-----	---	---	---
Value of feed fed to productive livestock- - - - -	-----	1,127	1,173	1,033
Returns per \$100 of feed fed to productive livestock - -	-----	135	161	102
Returns per \$100 invested in:				
All productive livestock- -	-----	119	147	83
Cattle- - - - -	-----	60	86	32
Hogs- - - - -	-----	233	228	167
Poultry - - - - -	-----	200	201	203
Dairy sales per dairy cow - - - - -	-----	68	89	53
Investment in productive livestock per acre -	-----	7.36	8.36	7.80
Receipts from productive livestock per acre -	-----	8.78	12.31	6.45
Man labor cost per \$100 gross income- - - - -	-----	57	38	92
Man labor cost per acre - - - - -	-----	5.33	5.55	6.18
Value of feed fed to horses - - - -	-----	196	187	195
Power and machinery cost per crop acre- - - - -	-----	3.82	3.99	4.27
Expenses per \$100 gross income- - -	-----	114	72	198
Machinery cost per acre - - - -	-----	1.06	1.10	1.14
Farm improvements cost per acre	-----	.89	.98	1.14
Farms with tractor- - - - -	-----	41%	36%	43%
Excess of sales over expenses - - -	-----	1,036	1,507	735
Decrease in inventory - - - - -	-----	452	155	915

Meeting Low Prices for Farm Products
With Lower Production Costs

Recent indexes show that present prices of farm products are on the average about 10% below those of the pre-war period 1910-1914. In contrast to this, farmers are still paying about 40% more than pre-war prices for what they have to buy. We now have more than ten years of low farm prices behind us and little prospect for an early return to a stable level of much higher prices, although we may expect to recover partially at least from the recent extreme price drop caused by an acute business depression. In view of these facts the chief hope of the individual farm appears to be in lower costs of production. Some consideration of present costs relative to those of pre-war years and of the variation in costs from farm to farm should be worth while. A study of this nature should show some of the factors which have led to lower costs and higher earnings on those farms which have succeeded better than the average.

Numerous changes in methods of production have occurred since the first cost accounts were collected by the University in 1913. New kinds of equipment have come into general use. Farm wages have increased. New varieties of crops have been distributed. New practices with respect to soil maintenance as well as the selection and treatment of seeds have been introduced. New practices in livestock sanitation have been made available, particularly the inoculation for hog cholera and the McLean County system of hog sanitation. An analysis of the available accounts covering this eighteen-year period indicates that the adoption of tractors and larger machines has made some reduction in the amount of man labor and horse power required to produce an acre of crop. It also is evident that those farmers who have adopted the practical means of increasing crop and livestock yields have increased the amount of product per acre of land, per hour of labor, per unit of power or machinery, and per unit of feed.

In general, however, the average cost of producing an acre of corn or other crop has increased since the period 1913 to 1916, when records were secured from a group of farms in Hancock County in western Illinois and another group in Franklin County in southern Illinois.

Such reduction as has been secured in the amount of labor per acre of crop has been more than offset by higher wages and higher machinery costs. Such reduction in land charges per unit of product as would have resulted from larger yields has been offset by higher taxes and interest charges on higher priced land much of which is covered by an increased mortgage indebtedness.

The 1913-1916 average cost per acre of corn in Hancock County was \$19.42 including interest on the investment in land at 5%. This cost increased to \$26.69 in 1920-1922 when the records from that county

SUMMARY OF ANNUAL FARM BUSINESS REPORTS
on
ONE THOUSAND FIVE HUNDRED AND SEVENTY-ONE FARMS IN ILLINOIS
for 1930

Prepared by R. R. Hudelson, P. E. Johnston, and H. C. M. Case

Separate farm business reports for each of the thirty-eight areas shown in the following tables have been prepared and distributed to each of the farm operators whose accounts are included in this summary. In these separate reports the data included herewith were discussed with a view to aiding the individual account keeper in using his accounts as a guide to more profitable farm management. Each individual's report had his own figures set up in parallel columns in comparison with the figures for the average farm in his area. Two other columns carried the average figures for the most profitable farms and the least profitable farms respectively. There also was a graphic chart made to show how much the particular farm was above or below the average in certain important factors. Experience has shown that this method of bringing out the problems of the individual has made his figures mean more to him and has resulted in increased efficiency and improved earnings. The discussion and the figures for the comparatively successful and unsuccessful groups are not repeated here, but a limited number of copies of the separate reports are available to those who are interested in a given area.

In reading the following tables it should be kept in mind that these data represent only those farms whose operators are progressive and business-like enough to keep accounts and submit them for analysis. Repeated field studies have shown that the average farm operator enrolled in this accounting service earns a higher rate of interest on his invested capital than that of the average of the rank and file of all farmers. The difference has averaged about two percent on the entire investment. With these facts in mind, the reader is cautioned against using these data to represent the average Illinois farm. Only the figures in the chart on page 3 have been calculated to represent the average farm.

Average earnings on Illinois farms for 1930 were lower than for any other year since 1921 if we accept the results reflected in the accounts kept on 2300 individual farms. These accounts show a rate earned on the average total investment of 1.6 percent but when allowance is made for the fact that account keepers realize higher earnings than the average of all farmers the conclusion is reached that the average Illinois farmer earned nothing on his investment for 1930. This reflects a sharp decline in earnings under those of 1928 and 1929.

The season of 1930 was characterized by sharply lower prices for all common farm products and by a severe drought which greatly reduced the yields of corn and forage crops, especially in the south half of the state. The small grains, especially wheat, made good yields of exceptionally high quality grain. Low yields of corn and forage crops, together with the very low prices received for wheat, dairy and poultry products caused the southern sections of the state to reflect lower returns from farming than were realized farther north. The Chicago dairy district and the northwestern sections of the state which produce large numbers of hogs had somewhat more favorable conditions and realized higher returns. These sections suffered less from low price relationships as well as from drought conditions when compared with southern Illinois.

PROCEEDINGS OF THE BOARD OF DIRECTORS

OF THE COMPANY INCORPORATED UNDER THE LAWS OF THE STATE OF NEW YORK

HELD AT THE OFFICE OF THE COMPANY, NEW YORK, ON THE 15th DAY OF MARCH, 1914

The Board of Directors of the Company, at a meeting held at the office of the Company, New York, on the 15th day of March, 1914, for the purpose of considering the report of the officers and the financial statements of the Company for the year ended December 31, 1913, and for the purpose of electing directors for the ensuing year, and for other business, the following resolutions were adopted:

Resolved, That the report of the officers and the financial statements of the Company for the year ended December 31, 1913, be and they are hereby accepted and approved.

Resolved, That the following persons be and they are hereby elected directors of the Company for the year ending December 31, 1914, to-wit: [List of names]

Resolved, That the following persons be and they are hereby elected officers of the Company for the year ending December 31, 1914, to-wit: [List of names]

Attest: [Signature] Secretary

Area 2. Mixed livestock

1924 — 2.3%
 1925 — 5.3%
 1926 — 3.6%
 1927 — 1.6%
 1928 — 3.8%
 1929 — 3.7%
 1930 — .8%

Area 3. Beef and hogs

1924 — 4.3%
 1925 — 4.3%
 1926 — 2.3%
 1927 — 1.5%
 1928 — 3.7%
 1929 — 3.7%
 1930 — .3%

Area 6. General farming
(wheat and corn)

1924 — 3.3%
 1925 — 4.8%
 1926 — 2.5%
 1927 — 1.7%
 1928 — 3.6%
 1929 — 4.0%
 1930 — .1% loss

Area 7. Wheat and
Dairying

1924 — 3.3%
 1925 — 4.3%
 1926 — 2.1%
 1927 — 2.5%
 1928 — 3.5%
 1929 — 4.1%
 1930 — 1.0% loss



State

1924 — 4.5%
 1925 — 3.3%
 1926 — 2.3%
 1927 — 1.8%
 1928 — 2.9%
 1929 — 3.7%
 1930 — .4% loss

Area 1. Dairying

1924 — 4.3%
 1925 — 2.8%
 1926 — 2.9%
 1927 — 2.7%
 1928 — 3.7%
 1929 — 3.7%
 1930 — 1.1%

Area 4. Grain farming

1924 — 5.5%
 1925 — 1.8%
 1926 — 1.5%
 1927 — 2.0%
 1928 — 3.6%
 1929 — 3.7%
 1930 — .8% loss

Area 5. General farming
(corn)

1924 — 6.3%
 1925 — 2.3%
 1926 — 2.3%
 1927 — 1.6%
 1928 — 2.0%
 1929 — 2.7%
 1930 — .2%

Area 8. Mixed farming

1924 — 4.3%
 1925 — 4.3%
 1926 — 4.3%
 1927 — 1.6%
 1928 — .5%
 1929 — 3.8%
 1930 — 3.1% loss

FIG. 36.—COMPUTED EARNINGS FOR ALL FARMERS IN ILLINOIS AND FOR THOSE IN DIFFERENT FARMING-TYPE AREAS

The computations were made on the basis of records which show that the average rate earned on all farms in a given area is about 2 percent less than on those farms enrolled in the farm-accounting project.

TABLE 38.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,571 ILLINOIS FARMS, 1930

Accounting items	Boone	DeKalb	Cook, DuPage, Kendall, Kane	Will	Winnebago, McHenry, Lake	Jo Davies	Rock Island, Carroll, Whiteside
Capital investment, total.....	\$35 595	\$47 587	\$38 105	\$43 313	\$33 613	\$31 856	\$34 621
Land.....	20 449	28 834	24 823	30 131	18 936	19 332	21 476
Farm improvements.....	6 751	7 904	5 275	5 541	6 197	4 950	4 984
Machinery and equipment.....	1 816	2 163	2 010	2 099	1 928	1 670	1 931
Feed, grain, and supplies.....	1 996	3 291	2 217	2 718	2 006	1 746	2 205
Livestock, total.....	4 583	5 395	3 780	2 824	4 546	4 158	4 025
Horses.....	465	566	510	430	409	389	452
Cattle.....	3 059	3 076	2 586	1 732	3 230	2 603	2 067
Hogs.....	727	1 263	431	473	648	841	1 208
Poultry.....	159	187	198	170	149	203	209
Miscellaneous livestock.....	173	303	55	19	110	122	89
Income, net increases, total.....	\$ 4 537	\$ 4 562	\$ 4 004	\$ 3 436	\$ 4 726	\$ 3 595	\$ 3 956
Feed and grain.....	548	41	544	564	.....	.....	.....
Labor and miscellaneous.....	42	57	77	25	60	42	42
Livestock, total.....	3 947	4 464	3 383	2 847	4 666	3 553	3 914
Cattle.....	313	1 132	193	340	603	468	691
Hogs.....	965	2 028	747	829	963	1 589	2 167
Poultry and eggs.....	316	293	276	305	228	285	350
Dairy sales.....	2 231	963	2 155	1 373	2 842	1 183	684
Miscellaneous livestock.....	122	48	12	.....	30	28	22
Expenses, net decreases, total.....	\$ 1 863	\$ 2 216	\$ 1 883	\$ 1 881	\$ 2 252	\$ 1 377	\$ 2 239
Farm improvements.....	287	353	275	271	208	198	255
Machinery and equipment.....	526	581	526	627	523	353	462
Crop expense.....	274	261	225	202	216	152	174
Hired labor.....	331	483	329	390	455	257	260
Taxes.....	319	384	380	288	296	212	258
Feed and grain.....	.....	.....	.....	.....	414	59	712
Horses.....	29	31	41	6	30	31	25
Livestock and miscellaneous.....	97	123	107	97	110	115	93
Income less expenses.....	\$ 2 674	\$ 2 346	\$ 2 121	\$ 1 555	\$ 2 474	\$ 2 218	\$ 1 717
Total unpaid labor.....	1 025	1 008	1 087	884	919	1 016	951
Net farm income.....	\$ 1 649	\$ 1 338	\$ 1 034	\$ 671	\$ 1 555	\$ 1 202	\$ 766

TABLE 38.—Continued

Rate earned, no management pay.....	4.63%	2.81%	2.71%	1.55%	4.63%	3.77%	2.21%
Rate earned with management paid.....	3.63%	1.81%	1.71%	.55%	3.63%	2.77%	1.21%
Labor and management wage.....	\$571	\$-341	\$-137	\$-797	\$567	\$311	\$-243
Size of farm, acres.....	206	220	171	205	184	213	178
Tillable land.....	85%	92%	89%	88%	80%	70%	83%
Gross income an acre.....	\$ 22.01	\$ 20.77	\$ 23.46	\$ 16.74	\$ 25.75	\$ 16.87	\$ 22.19
Total expense an acre.....	14.01	14.68	17.40	13.47	17.28	11.23	17.89
Net income an acre.....	8.00	6.09	6.06	3.27	8.47	5.64	4.30
Acres in—Corn.....	66	94	61	71	51	40	58
Oats.....	28	37	31	29	25	26	26
Wheat.....	3	6	6	29	4	..	6
Barley.....	24	19	16	11	12	8	10
Soybeans.....	..	..	..	..	..	..	..
Crop yields—Corn, bushels an acre.....	45.0	43.7	37.0	29.6	41.0	46.8	46.3
Oats, bushels an acre.....	49.5	56.2	51.3	45.3	45.3	50.8	46.4
Wheat, bushels an acre.....	25.5	32.7	30.8	29.7	25.5	.....	25.3
Livestock income on \$100 of feed.....	\$150	\$ 122	\$ 149	\$ 139	\$149	\$127	\$ 133
Income on \$100 invested in livestock.....	102	98	108	118	116	97	117
For \$100 in cattle.....	92	74	96	98	111	65	72
For \$100 in hogs.....	134	160	162	167	167	199	190
Dairy sales from each dairy cow.....	136	133	122	141	161	71	88
Investment an acre in livestock.....	18.71	20.77	18.35	11.71	21.85	17.15	18.79
Income an acre from livestock.....	19.15	20.33	19.82	13.85	25.43	16.67	21.95
Labor cost for \$100 gross income.....	\$ 30	\$ 32	\$ 35	\$ 37	\$ 29	\$ 35	\$ 30
Power and machinery cost a crop acre.....	5.57	5.06	6.29	5.59	6.62	5.47	6.29
Expense for \$100 gross income.....	64	71	74	80	67	67	81
Farms with tractor.....	81%	85%	74%	65%	73%	70%	64%
Value of land an acre.....	\$ 99	\$ 131	\$ 145	\$ 147	\$ 103	\$ 91	\$ 120
Total investment an acre.....	173	217	223	211	183	149	194
Excess of sales over expenses.....	2 621	3 254	2 509	2 262	2 600	2 250	2 437
Decrease in inventory.....	-531	908	388	707	126	32	720
Number of farms included.....	31	45	50	31	33	30	59

¹There was an increase of \$53 on this group of farms.

(Table 38 continued on next page)

TABLE 38.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,571 ILLINOIS FARMS, 1930—Continued

Accounting items	Stephenson, Ogle, Lee	Adams	Bureau, Warren, Henry	Fulton, Peoria, Schuyler	Hancock	Henderson	McDonough
Capital investment, total.....	\$37 688	\$28 570	\$43 059	\$36 055	\$41 956	\$34 232	\$40 854
Land.....	23 303	19 360	29 967	24 546	30 500	24 541	28 190
Farm improvements.....	6 093	3 566	4 432	4 219	4 382	3 390	4 472
Machinery and equipment.....	1 816	1 430	1 776	1 578	1 593	1 371	1 696
Feed, grain, and supplies.....	2 183	1 697	2 936	2 257	2 345	2 032	2 922
Livestock, total.....	4 293	2 517	3 948	3 455	3 136	2 898	3 574
Horses.....	496	408	577	462	476	516	491
Cattle.....	2 652	1 094	1 886	1 618	1 484	1 123	1 271
Hogs.....	812	785	1 296	1 090	1 004	1 012	1 570
Poultry.....	173	144	146	123	151	126	158
Miscellaneous livestock.....	160	86	43	162	21	121	84
Income, net increases, total.....	\$ 3 740	\$ 2 820	\$ 3 440	\$ 3 399	\$ 3 310	\$ 3 021	\$ 4 303
Feed and grain.....	.....	.....	232	.....	419	387	.....
Labor and miscellaneous.....	64	92	26	82	40	68	44
Livestock, total.....	3 676	2 728	3 182	3 317	2 851	2 566	4 259
Cattle.....	691	220	557	525	233	270	489
Hogs.....	1 548	1 861	1 999	2 160	1 960	1 940	3 214
Poultry and eggs.....	239	203	220	190	190	123	241
Dairy sales.....	1 158	419	392	432	466	209	308
Miscellaneous livestock.....	40	25	14	10	2	24	7
Expenses, net decreases, total.....	\$ 1 763	\$ 1 597	\$ 1 845	\$ 2 135	\$ 1 649	\$ 1 443	\$ 2 502
Farm improvements.....	314	196	292	243	239	182	303
Machinery and equipment.....	451	398	517	337	426	361	416
Crop expense.....	220	177	200	181	207	157	216
Hired labor.....	291	302	346	283	388	321	370
Taxes.....	308	269	358	312	311	321	345
Feed and grain.....	49	178	.....	657	.....	.....	731
Horses.....	28	.....	39	39	9	19	26
Livestock and miscellaneous.....	102	77	93	83	69	82	95
Income less expenses.....	\$ 1 977	\$ 1 223	\$ 1 595	\$ 1 264	\$ 1 661	\$ 1 578	\$ 1 801
Total unpaid labor.....	903	857	889	877	778	847	909
Net farm income.....	\$ 1 074	\$ 366	\$ 706	\$ 387	\$ 883	\$ 731	\$ 892

TABLE 38.—Continued

Rate earned, no management pay.....	2.85%	1.28%	1.64%	1.07%	2.10%	2.14%	2.18%
Rate earned with management paid.....	1.85%	2.28%	.64%	.07%	1.10%	1.14%	1.18%
Labor and management wage.....	\$ - 72	\$ -386	\$ -722	\$ -739	\$ -526	\$ -271	\$ -431
Size of farm, acres.....	206	198	212	218	208	224	212
Tillable land.....	80%	82%	88%	74%	90%	80%	86%
Gross income an acre.....	\$ 18.15	\$ 14.26	\$ 16.23	\$ 15.61	\$ 15.95	\$ 13.47	\$ 20.31
Total expense an acre.....	12.94	12.41	12.90	13.83	11.69	10.21	16.10
Net income an acre.....	5.21	1.85	3.33	1.78	4.26	3.26	4.21
Acres in—Corn.....	63	54	88	56	75	85	79
Oats.....	36	26	33	27	33	34	30
Wheat.....	5	22	10	24	10	13	19
Barley.....	8	.....	6	2	3	3	3
Soybeans.....	1	4	2	3	19	3	6
Crop yields—Corn, bushels an acre.....	41.3	29.4	43.3	29.3	33.7	37.3	35.1
Oats, bushels an acre.....	49.2	30.5	45.4	31.5	39.1	34.7	40.1
Wheat, bushels an acre.....	23.8	20.4	24.3	21.2	21.1	21.0	24.5
Livestock income on \$100 of feed.....	\$ 128	\$ 133	\$ 119	\$ 129	\$ 126	\$ 131	\$ 124
Income on \$100 invested in livestock.....	103	139	105	126	119	112	149
For \$100 in cattle.....	74	62	58	69	52	45	65
For \$100 in hogs.....	194	254	163	217	215	193	228
Dairy sales from each dairy cow.....	101	78	70	72	73	39	60
Investment an acre in livestock.....	17.40	9.93	14.32	12.06	11.58	10.19	13.46
Income an acre from livestock.....	17.84	13.78	15.01	15.24	13.74	11.45	20.11
Labor cost for \$100 gross income.....	\$ 31	\$ 40	\$ 35	\$ 33	\$ 35	\$ 38	\$ 29
Power and machinery cost a crop acre.....	5.31	5.13	5.02	4.47	4.13	3.76	4.36
Expense for \$100 gross income.....	71	87	79	89	73	76	79
Farms with tractor.....	58%	63%	72%	54%	73%	53%	78%
Value of land an acre.....	\$ 113	\$ 98	\$ 141	\$ 113	\$ 147	\$ 109	\$ 133
Total investment an acre.....	183	145	203	166	202	153	193
Excess of sales over expenses.....	2 588	1 599	2 907	2 670	2 510	2 143	2 725
Decrease in inventory.....	611	376	1 312	1 406	849	565	924
Number of farms included.....	55	30	43	52	30	62	36

(Table 38 continued on next page)

TABLE 38.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,571 ILLINOIS FARMS, 1930—Continued

Accounting items	Mercer	Champaign	Ford	Iroquois	LaSalle, Marshall, Putnam, Grundy	Macon, Logan, Platt, DeWitt	Christian, Moultrie	Coles, Vermilion, Edgar, Douglas
Capital investment, total.....	\$52 473	\$56 117	\$60 991	\$50 624	\$49 554	\$56 671	\$43 911	\$48 347
Land.....	35 801	43 329	48 662	35 700	35 403	42 995	33 427	36 329
Farm improvements.....	5 840	4 898	4 721	6 162	5 085	4 933	3 418	4 355
Machinery and equipment.....	1 974	2 017	1 863	1 809	2 155	2 042	2 141	1 983
Feed, grain, and supplies.....	3 442	3 635	3 501	3 679	3 596	3 794	2 439	2 812
Livestock, total.....	5 416	2 238	2 244	3 274	3 315	2 907	2 486	2 868
Horses.....	523	635	709	825	574	648	536	532
Cattle.....	2 640	1 003	965	1 560	1 572	1 421	1 143	1 424
Hogs.....	1 860	356	372	526	855	628	623	702
Poultry.....	149	140	138	179	166	131	128	142
Miscellaneous livestock.....	244	104	60	184	148	79	56	68
Income, net increases, total....	\$ 5 374	\$ 3 645	\$ 4 116	\$ 2 986	\$ 3 717	\$ 4 040	\$ 3 844	\$ 3 947
Feed and grain.....	.....	2 126	2 287	898	819	1 798	1 615	1 221
Labor and miscellaneous.....	35	62	119	53	87	72	83	58
Livestock, total.....	5 339	1 457	1 710	2 035	2 811	2 170	2 146	2 668
Cattle.....	1 156	244	222	301	360	483	162	464
Hogs.....	3 578	662	741	849	1 612	1 108	1 476	1 526
Poultry and eggs.....	238	163	200	331	250	220	147	197
Dairy sales.....	333	353	506	526	551	354	358	461
Miscellaneous livestock.....	34	35	41	28	38	5	3	20
Expenses, net decreases, total..	\$ 3 347	\$ 2 059	\$ 2 007	\$ 2 050	\$ 1 899	\$ 2 327	\$ 2 031	\$ 2 037
Farm improvements.....	329	340	263	299	263	248	202	251
Machinery and equipment.....	588	538	528	523	534	549	605	513
Crop expense.....	188	183	214	204	202	310	259	244
Hired labor.....	635	391	447	443	363	548	402	512
Taxes.....	443	492	479	463	411	522	448	419
Feed and grain.....	991	.....	.....	.....	.....	.....	.....	.....
Horses.....	43	38	.....	39	29	57	35	13
Livestock and miscellaneous..	130	77	76	79	97	93	80	85
Income less expenses.....	\$ 2 027	\$ 1 586	\$ 2 109	\$ 936	\$ 1 818	\$ 1 713	\$ 1 813	\$ 1 910
Total unpaid labor.....	898	820	866	830	906	883	907	818
Net farm income.....	\$ 1 129	\$ 766	\$ 1 243	\$ 106	\$ 912	\$ 830	\$ 906	\$ 1 092

TABLE 38.—Continued

Rate earned, no management pay	2.15%	1.36%	2.04%	.21%	1.84%	1.46%	2.06%	2.26%
Rate earned with management paid.....	1.15%	1.36%	1.04%	-.79%	-.84%	-.46%	1.06%	1.26%
Labor and management wage..	\$ -774	\$ -1 344	\$ -1 141	\$ -1 723	\$ -858	\$ -1 290	\$ -580	\$ -648
Size of farm, acres.....	260	239	264	243	234	248	252	230
Tillable land.....	81%	96%	95%	91%	90%	95%	92%	89%
Gross income an acre.....	\$ 20.68	\$ 15.26	\$ 15.62	\$ 12.27	\$ 15.92	\$ 16.26	\$ 15.24	\$ 17.13
Total expense an acre.....	16.34	12.05	10.90	11.83	12.01	12.92	11.65	12.39
Net income an acre.....	4.34	3.21	4.72	.44	3.91	3.34	3.59	4.74
Acres in—Corn.....	95	102	123	106	99	98	87	86
Oats.....	31	38	60	62	50	32	24	34
Wheat.....	4	20	13	5	13	37	34	16
Barley.....	8	1	2	3	5	1	..	2
Soybeans.....	..	27	4	2	..	18	41	20
Crop yields—Corn, bushels an acre.....	48.9	35.2	34.7	33.2	37.2	39.6	32.3	37
Oats, bushels an acre.....	41.1	36.2	29.8	32.4	43.0	38.1	34.2	40.4
Wheat, bushels an acre.....	23.8	23.3	25.6	20.4	26.8	24.1	21.5	19.2
Livestock income on \$100 of feed	\$ 137	\$ 153	\$ 133	\$ 119	\$ 127	\$ 122	\$ 121	\$ 131
Income on \$100 invested in livestock.....	116	100	115	89	108	105	119	122
For \$100 in cattle.....	64	69	80	58	62	66	49	69
For \$100 in hogs.....	187	177	200	168	191	180	254	228
Dairy sales from each dairy cow	61	63	83	91	81	75	70	83
Investment an acre in livestock	17.69	6.09	5.55	9.38	11.12	8.32	7.14	9.52
Income an acre from livestock..	20.55	6.10	6.39	8.36	12.04	8.73	8.51	11.58
Labor cost for \$100 gross income	\$ 26	\$ 32	\$ 31	\$ 42	\$ 33	\$ 34	\$ 33	\$ 33
Power and machinery cost a crop acre.....	5.44	4.23	3.53	4.45	4.36	4.24	4.48	4.26
Expense for \$100 gross income..	79	79	70	97	75	79	76	72
Farms with tractor.....	72%	79%	87%	74%	86%	75%	88%	79%
Value of land an acre.....	\$ 138	\$ 181	\$ 185	\$ 147	\$ 152	\$ 173	\$ 133	\$ 158
Total investment an acre.....	202	235	231	208	212	228	174	210
Excess of sales over expenses..	2 794	2 916	3 146	2 244	2 899	2 935	2 252	2 492
Decrease in inventory.....	767	1 330	1 037	1 308	1 081	1 222	439	582
Number of farms included.....	40	38	32	38	123	56	34	61

(Table 38 continued on next page)

TABLE 38.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,571 ILLINOIS FARMS, 1930—Continued

Accounting items	Greene	Jersey, Macoupin	Mason	Morgan	Pike, Brown, Menard, Cass	Sangamon	Scott	Bond, Montgomery, Shelby
Capital investment, total.....	\$36 716	\$27 756	\$36 662	\$42 030	\$37 296	\$53 990	\$32 617	\$25 301
Land.....	25 297	18 530	26 419	31 220	25 615	41 017	23 303	15 847
Farm improvements.....	4 000	3 090	3 335	3 959	4 078	4 709	3 200	3 395
Machinery and equipment.....	1 753	1 692	1 868	1 566	1 526	1 631	1 404	1 334
Feed, grain, and supplies.....	2 463	1 924	2 979	2 594	2 273	3 091	2 000	1 977
Livestock, total.....	3 203	2 520	2 061	2 691	3 804	3 542	2 710	2 748
Horses.....	483	500	630	435	547	624	424	401
Cattle.....	1 694	1 211	754	1 039	1 942	1 520	1 172	1 502
Hogs.....	783	598	526	963	1 044	1 079	852	519
Poultry.....	144	151	138	138	153	125	164	206
Miscellaneous livestock.....	99	60	13	116	118	194	98	120
Income, net increases, total.....	\$ 3 790	\$ 3 109	\$ 2 325	\$ 3 406	\$ 3 947	\$ 4 360	\$ 3 461	\$ 2 714
Feed and grain.....	102	434	824	629	.....	723	311	.....
Labor and miscellaneous.....	120	67	67	96	64	95	108	56
Livestock, total.....	3 568	2 608	1 434	2 681	3 883	3 542	3 042	2 658
Cattle.....	267	254	64	283	680	645	412	282
Hogs.....	2 132	1 290	822	1 997	2 654	2 260	2 198	1 353
Poultry and eggs.....	203	250	194	185	218	204	262	310
Dairy sales.....	937	797	354	204	302	365	136	685
Miscellaneous livestock.....	29	17	.....	12	29	68	34	28
Expenses, net decreases, total.....	\$ 2 020	\$ 1 462	\$ 1 575	\$ 1 686	\$ 2 343	\$ 2 452	\$ 1 738	\$ 1 628
Farm improvements.....	230	161	167	195	280	319	230	228
Machinery and equipment.....	380	455	412	410	434	521	371	347
Crop expense.....	285	187	213	199	207	292	154	193
Hired labor.....	671	294	243	432	397	689	494	251
Taxes.....	326	258	430	344	330	498	358	225
Feed and grain.....	.....	.....	.....	.....	565	.....	.....	302
Horses.....	10	44	52	25	27	27	49	22
Livestock and miscellaneous.....	118	63	58	81	103	106	82	60
Income less expenses.....	\$ 1 770	\$ 1 647	\$ 750	\$ 1 720	\$ 1 604	\$ 1 908	\$ 1 723	\$ 1 086
Total unpaid labor.....	865	874	860	852	866	868	849	879
Net farm income.....	\$ 905	\$ 773	\$ -110	\$ 868	\$ 738	\$ 1 040	\$ 874	\$ 207

TABLE 38.—Continued

Rate earned, no management pay	2.47%	2.78%	-.30%	2.07%	1.98%	1.93%	2.68%	.82%
Rate earned with management paid.....	1.47%	1.78%	-1.30%	1.07%	.98%	.93%	1.68%	-.18%
Labor and management wage..	\$ -290	\$ 3	\$ -1 223	\$ -529	\$ -446	\$ -962	\$ -70	\$ -419
Size of farm, acres.....	236	207	248	230	244	266	232	221
Tillable land.....	79%	85%	85%	82%	79%	89%	78%	84%
Gross income an acre.....	\$ 16.09	\$ 15.00	\$ 9.36	\$ 14.84	\$ 16.21	\$ 16.40	\$ 14.91	\$ 12.28
Total expense an acre.....	12.25	11.27	9.80	11.06	13.18	12.49	11.15	11.34
Net income an acre.....	3.84	3.73	-.44	3.78	3.03	3.91	3.76	.94
Acres in—Corn.....	75	62	74	74	68	94	73	63
Oats.....	19	20	22	19	25	30	14	26
Wheat.....	35	36	65	48	30	40	36	23
Barley.....	..	..	2	..	2	3	..	..
Soybeans.....	5	11	9	10	2	14	..	6
Crop yields—Corn, bushels an acre.....	34.8	29.4	24.1	33.8	32.8	33.7	37.9	28.1
Oats, bushels an acre.....	34.1	31.9	27.3	34.2	29.4	36.7	30.1	28
Wheat, bushels an acre.....	19.6	16.6	21.6	23.9	22.5	23.2	21.0	13.9
Livestock income on \$100 of feed	\$ 142	\$ 143	\$ 122	\$ 131	\$ 136	\$ 132	\$ 133	\$ 115
Income on \$100 invested in livestock.....	145	134	106	131	125	133	140	119
For \$100 in cattle.....	81	91	58	53	54	74	51	70
For \$100 in hogs.....	274	222	168	225	258	222	254	253
Dairy sales from each dairy cow	105	102	61	51	59	79	38	88
Investment an acre in livestock	10.47	9.37	5.43	8.90	12.72	10.00	9.39	10.07
Income an acre from livestock..	15.14	12.59	5.77	11.68	15.94	13.32	13.10	12.02
Labor cost for \$100 gross income	\$ 39	\$ 37	\$ 46	\$ 36	\$ 31	\$ 35	\$ 38	\$ 41
Power and machinery cost a crop acre.....	4.33	5.43	3.73	4.14	4.76	4.30	4.52	4.21
Expense for \$100 gross income..	76	75	105	75	81	76	75	92
Farms with tractor.....	73%	71%	66%	75%	67%	64%	70%	67%
Value of land an acre.....	\$ 107	\$ 89	\$ 106	\$ 136	\$ 105	\$ 154	\$ 100	\$ 72
Total investment an acre.....	156	134	148	183	153	203	140	114
Excess of sales over expenses.....	2 401	1 845	2 102	2 607	2 119	3 087	2 179	1 650
Decrease in inventory.....	631	198	1 352	887	515	1 179	456	564
Number of farms included.....	30	28	33	41	52	36	30	30

(Table 38 concluded on next page)

TABLE 38.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,571 ILLINOIS FARMS, 1930—Continued

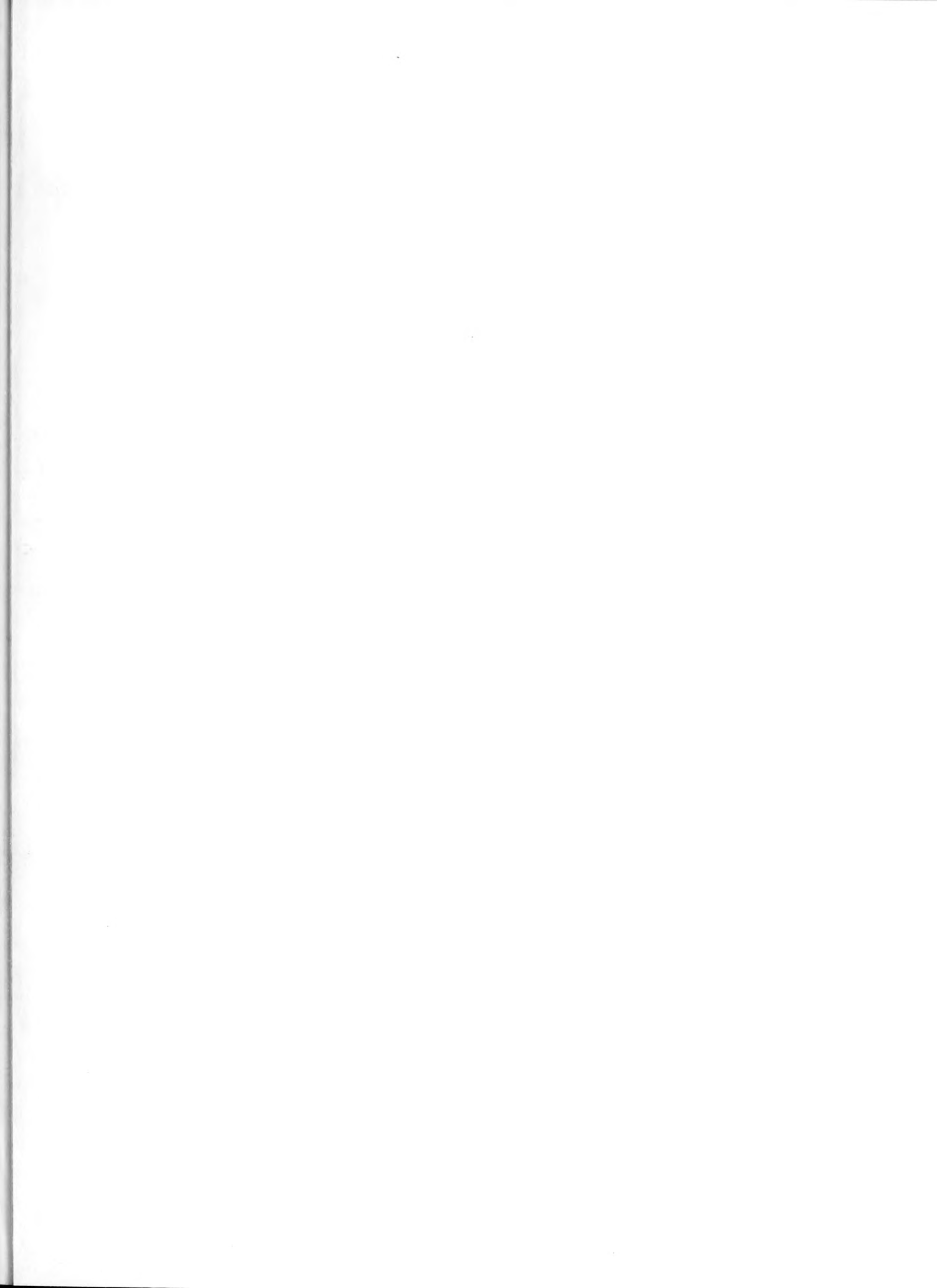
Accounting items	Clinton	Effingham	Madison	Monroe, Randolph, Washington	St. Clair	Clay, Jefferson, Edwards, Marion, Richland, Wayne	Wabash, Clark, Crawford, Lawrence	White, Pope, Gallatin, Saline, Williamson
Capital investment, total.....	\$20 063	\$12 946	\$18 626	\$17 675	\$22 362	\$12 083	\$26 133	\$14 584
Land.....	11 600	7 507	10 383	10 144	13 766	6 651	17 440	8 605
Farm improvements.....	2 741	1 983	3 008	2 457	3 138	1 788	3 114	2 068
Machinery and equipment....	1 663	1 011	1 390	1 418	1 348	906	1 483	1 187
Feed, grain, and supplies....	1 807	704	1 546	1 822	2 161	1 134	1 845	945
Livestock, total.....	2 252	1 741	2 299	1 834	1 949	1 604	2 251	1 779
Horses.....	422	336	351	391	398	287	413	408
Cattle.....	1 228	957	1 413	963	1 009	771	1 014	751
Hogs.....	287	116	263	212	305	163	609	343
Poultry.....	282	269	234	220	221	201	132	188
Miscellaneous livestock....	33	63	38	48	16	182	83	89
Income, net increases, total....	\$ 2 539	\$ 1 406	\$ 2 623	\$ 1 945	\$ 2 359	\$ 1 237	\$ 2 901	\$ 1 621
Feed and grain.....	.....	62	.....	259	271	.....	.....	.....
Labor and miscellaneous....	91	48	91	49	79	57	110	102
Livestock, total.....	2 448	1 296	2 532	1 637	2 009	1 180	2 791	1 519
Cattle.....	157	141	230	140	114	101	256	89
Hogs.....	489	238	477	321	484	316	1 578	711
Poultry and eggs.....	496	494	435	444	510	398	280	367
Dairy sales.....	1 304	410	1 377	716	894	348	666	334
Miscellaneous livestock....	2	13	13	16	7	17	11	18
Expenses, net decreases, total..	\$ 1 242	\$ 652	\$ 1 472	\$ 1 035	\$ 1 259	\$ 845	\$ 2 155	\$ 1 037
Farm improvements.....	226	86	182	146	155	121	187	154
Machinery and equipment....	294	179	319	300	351	171	420	184
Crop expense.....	220	135	161	178	216	135	205	135
Hired labor.....	179	64	228	160	243	62	388	155
Taxes.....	154	130	179	158	219	149	341	167
Feed and grain.....	93	.....	303	.....	.....	154	509	183
Horses.....	16	17	27	52	18	9	8	19
Livestock and miscellaneous..	60	41	73	41	57	44	97	40
Income less expenses.....	\$ 1 297	\$ 754	\$ 1 151	\$ 910	\$ 1 100	\$ 392	\$ 746	\$ 584
Total unpaid labor.....	932	732	860	855	945	751	739	806
Net farm income.....	\$ 365	\$ 22	\$ 291	\$ 55	\$ 155	\$ -359	\$ 7	\$ -222

TABLE 38.—Continued

Rate earned, no management pay	1.82%	.17%	1.56%	.31%	.69%	-2.97%	.03%	-1.52%
Rate earned with management paid.....	.....	.....	.....	.....	.....	.....	.....	.....
Labor and management wage..	\$ -47.82%	\$ -61.83%	\$ -50.56%	\$ -237.69%	\$ -365.31%	\$ -382.97%	\$ -724.97%	\$ -368.52%
Size of farm, acres.....	173	189	154	190	161	181	218	173
Tillable land.....	87%	87%	83%	81%	91%	86%	85%	82%
Gross income an acre.....	\$ 14.64	\$ 7.44	\$ 17.03	\$ 10.25	\$ 14.68	\$ 6.84	\$ 13.30	\$ 9.36
Total expense an acre.....	12.54	7.32	15.14	9.96	13.72	8.83	13.27	10.64
Net income an acre.....	2.10	.12	1.89	.29	.96	-1.99	.03	-1.28
Acres in—Corn.....	40	45	36	32	39	29	64	40
Oats.....	27	29	13	17	20	17	24	9
Wheat.....	43	13	36	52	43	15	26	18
Barley.....	..	..	..	..	..	..	..	..
Soybeans.....	..	6	1	..	2	..	4	1
Crop yields—Corn, bushels an acre.....	18.2	13.9	25.4	18.7	25.1	12.3	19.4	19.1
Oats, bushels an acre.....	32.0	20.0	30.8	22.3	29.2	20.9	25.9	17.4
Wheat, bushels an acre.....	20.9	13.0	16.3	20.3	19.8	16.4	14.0	16.4
Livestock income on \$100 of feed	\$ 139	\$ 134	\$ 144	\$ 131	\$ 117	\$ 106	\$ 134	\$ 135
Income on \$100 invested in livestock.....	136	96	134	117	135	95	162	119
For \$100 in cattle.....	121	60	115	91	105	61	97	60
For \$100 in hogs.....	177	200	197	163	165	216	275	233
Dairy sales from each dairy cow	116	57	138	93	121	57	116	68
Investment an acre in livestock	10.35	7.11	12.26	7.35	9.26	6.85	7.87	7.36
Income an acre from livestock..	14.11	6.86	16.42	8.62	12.50	6.49	12.78	8.78
Labor cost for \$100 gross income	\$ 42	\$ 56	\$ 40	\$ 51	\$ 48	\$ 63	\$ 37	\$ 57
Power and machinery cost a crop acre.....	4.91	3.18	5.69	5.16	5.60	3.32	4.36	3.82
Expense for \$100 gross income..	86	98	89	97	93	129	100	114
Farms with tractor.....	55%	44%	54%	72%	50%	50%	59%	41%
Value of land an acre.....	\$ 67	\$ 40	\$ 67	\$ 53	\$ 86	\$ 37	\$ 80	\$ 50
Total investment an acre.....	116	68	121	94	139	67	120	84
Excess of sales over expenses..	1 514	687	1 415	1 146	1 756	814	1 282	1 036
Decrease in inventory.....	217	-671	264	236	656	422	536	452
Number of farms included.....	36	32	41	32	34	34	32	41

*There was an increase of \$67 on this group of farms.

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