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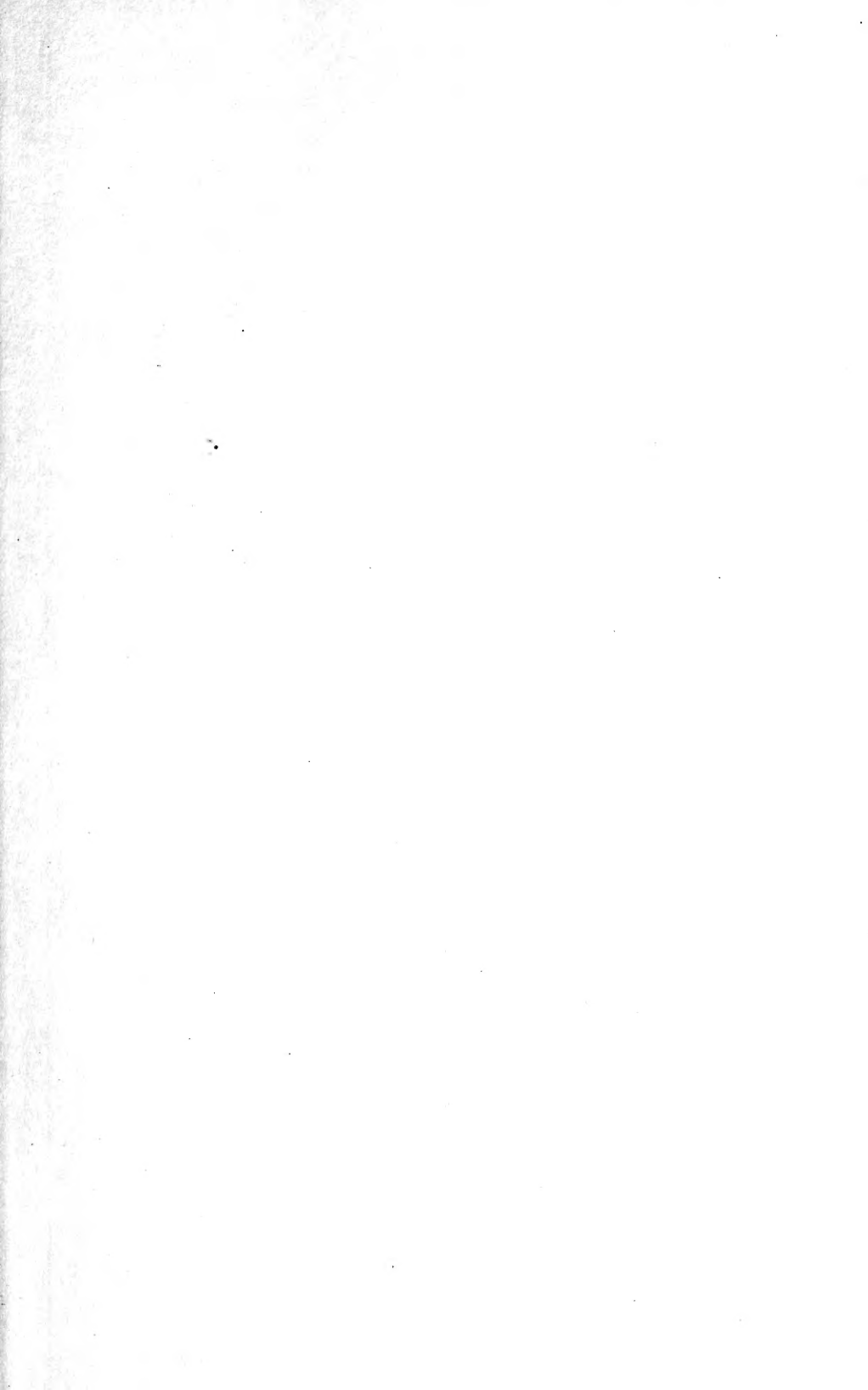
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Financial Position of A Representative Group of McHenry County Farmers

In the Dairy Region
of Northern Illinois
1940-1942

By
B. D. Parrish
and
L. J. Norton

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Financial Position of a Representative Group of McHenry County Farmers: 1940-1942

By B. D. PARRISH and L. J. NORTON¹

LARGE OUTLAYS of capital are essential in modern agriculture. To finance the ownership of farm land, to provide essential improvements, and to acquire the working capital to farm the land and so stock it as to utilize the crops to the best advantage require huge sums. The value of the capital involved in the ownership of farm land in Illinois and the working capital needed for its operation was about 3.2 billion dollars in 1940. Of this sum 2.5 billion dollars represented the value of land and buildings, and .7 billion dollars the value of livestock, equipment, grain, etc. In 1943 wartime prices had increased the total by more than one-third.

The individuals who own the land or operate it are the ones who must provide the capital needed for the farming enterprise. Altho most economic studies of farming have taken for granted the ability of individuals to finance their farms, it is well known that inability to do so prevents ownership in many cases and cramps operations in other cases.

PURPOSE AND SCOPE OF STUDY

The original purpose of the present study was to find answers to such questions as these: How much capital is involved in the ownership and operation of typical Illinois farms? How is it distributed among the various factors of production? Who furnishes this capital? How do farmers who are short of capital finance their operations?

The farms studied were located in McHenry county, Illinois, about 70 miles northwest of Chicago in the milkshed of that city. The period was 1940-1942. As the selected farms were representative of the farms in the county, the findings are believed to apply to the county as a whole and to other similar territory. Some of the findings are general enough to suggest relationships that apply over much wider areas.

Any economic study is necessarily restricted to a given period of

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time, some studies to very short times. This fact must be given full weight in any generalizations that are drawn from such studies, for conditions can and do change drastically even in comparatively short periods. The time covered by this study, 1940-1942, was one of rising prices, good crops in the area where the farms are located, and rising incomes. The relationships found between the various factors analyzed in this study will of course apply only to periods when similar conditions prevail. If incomes had been shrinking, quite different relationships would probably have been found. Studies extending over a long enough period to cover a complete cycle of change from low incomes to high and back to low would of course have more value.

This study, however, has interest aside from that suggested by its original purposes. It shows the financial positions and operations of a typical group of farmers just before the country became involved in war, the response which farmers made to the Food-for-Victory program launched in the first year of the war, and the effect which the first year of the war had on farmers differently situated with respect to finances and to tenure—some with ample capital and some short of capital, some out of debt and some heavily in debt, some tenants and some owners, some operators of a small farming enterprise and some of a large enterprise. How did these farmers respond to the calls for greater production? How much were operators who were short of capital hindered in their efforts to expand? These questions are of great public importance, as is also another question: How did these different groups make use of the enlarged earnings which higher prices and expanded production brought them? Answers to these and many other questions besides those which the study was originally designed to answer are to be found in the data here presented.

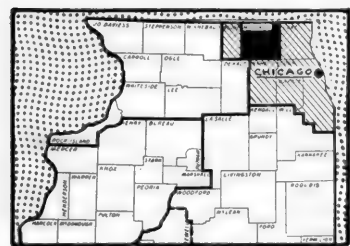
Collection and analysis of data. The basic data for this study were collected by the survey method from 124 farms in 1940, 146 farms in 1941, and 118 farms in 1942.¹

The data regarding assets, debts, net worth, and debt ratios, as well as income and expense, include only the operator's share of the farm business, except in the section dealing with total 1942 farm income. Data regarding size of farm, productivity, land use, and the dairy herd refer to the entire farm unit and not merely to the operator's share.

¹The records were collected by B. D. Parrish in 1940, by Parrish and others in 1941, and by Parrish and R. A. Kelly in 1942. The farms were a random sample. Methods used in selecting the samples are discussed on pages 584-586.

The data were analyzed statistically by first sorting them on the basis of such factors as tenure of operator, percentage of capital borrowed (debt ratio), and size of business. When sorting was done by the last two factors, the records of owners (including part owners) and tenants were kept separate. Various items for all the farms in a given group were then averaged. The statistical significance of a number of the resulting averages was calculated in order to help the investigators to decide what differences were important, but the results of these calculations are not included in this publication. The stability of the difference is of great importance in indicating valid relationships. Three years of data present opportunities for checking such stability.

General features of area in which study was made. McHenry county, located on the Illinois-Wisconsin border, is the second county west of Lake Michigan. Production of milk for the Chicago market is the major farm enterprise. Hogs and poultry are kept on most farms,



and a few farmers either feed cattle or keep rather large flocks of poultry. The land ranges from level to hilly, but much of it is rolling. Corn, small grains, and legume hay are the main crops and are largely fed on the farms where grown. Except for protein supplements, only small amounts of feed-stuffs are purchased. In brief, farming in this county is essentially an intensive milk-producing enterprise in which most of the feed is raised on the farms where it is fed.

Many opportunities for nonfarm employment exist in this area, especially in the industries located in the county seat, Woodstock. Proximity to Chicago and its suburbs has caused labor to be drawn off these farms more rapidly than from farms in areas more remote from urban centers. It is not surprising, therefore, that but little surplus labor—either male or female—was found on these farms at the time of the survey, a period when industry was active.

Farming in this county, as in Illinois generally, is organized on a family basis, only a moderate amount of hired labor being utilized, usually not more than one hired man to a farm. The high labor requirements of the dairy enterprise make it possible, and often necessary, to use considerable family labor. The operation of the farms surveyed in 1940 required an average of 22 months of labor, 6 months of it hired labor and 16 months of it family labor, including the labor of the operator.

CAPITAL POSITION OF OPERATORS

Positions of Owners and Operators Contrasted

The problem of supplying capital varies with the tenure of the operator. The owner-operator must finance the land and improvements and working capital. The tenant needs only to finance his working capital, in whole or in part, and in some cases to finance minor improvements. The part owner occupies an intermediate position between these two groups.

The farms studied were classified first on the basis of the tenure of their operators; the yearly distribution of those included was as follows:

| | <i>Owners</i> | <i>Part owners</i> | <i>Tenants</i> | <i>Total</i> |
|-----------|---------------|--------------------|----------------|--------------|
| 1940..... | 45 | 14 | 63 | 122 |
| 1941..... | 51 | 16 | 79 | 146 |
| 1942..... | 43 | 18 | 57 | 118 |

Since the proportions in the different tenure and debt classifications were similar in the other years, the 1941 sample, which was the largest, was taken as representative (Table 1). On December 31 of that year 20 percent of these farmers reported no debts. A slightly higher proportion of tenants than of owners reported no debts, a fact that reflects the lower capital requirements of tenants.

The general summary of the capital position of the different tenure groups for each of the three years (Table 2) shows that: (1) the owners and part owners had larger assets because they had more working capital and because they were financing all or part of their real estate; (2) the part owners were the most heavily indebted group; (3) among tenants, the cash-rent group had larger assets than the livestock-share group, as the cash tenants had to furnish all their working capital; (4) the share tenants owning less than half the cows

TABLE 1.—ONE HUNDRED FORTY-SIX FARMERS IN MCHENRY COUNTY, ILLINOIS, REPORTING DIFFERENT CLASSES OF DEBTS ON DECEMBER 31, 1941

| | <i>Owners</i> | | <i>Part owners</i> | | <i>Tenants</i> | | <i>All</i> | |
|--------------------------------------|---------------|---------|--------------------|---------|----------------|---------|------------|---------|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Farmers, total..... | 51 | 100 | 16 | 100 | 79 | 100 | 146 | 100 |
| Farmers with— | | | | | | | | |
| No debts..... | 10 | 20 | 1 | 6 | 18 | 23 | 29 | 20 |
| Debts..... | 41 | 80 | 15 | 94 | 61 | 77 | 117 | 80 |
| Long-term debts..... | 33 | 65 | 15 | 94 | 4 | 5 | 51 | 35 |
| Short-term debts..... | 31 | 61 | 10 | 62 | 60 | 76 | 101 | 69 |
| Both long- and short-term debts..... | 23 | 45 | 10 | 62 | 3 | 4 | 35 | 24 |

TABLE 2.—CAPITAL POSITION OF 146 OWNERS, PART OWNERS, AND TENANTS, 1940, 1941, AND 1942

(Average of beginning and ending inventories each year)

| | Owners | Part owners | Cash and crop-share tenants | Livestock-share tenants | |
|----------------------|----------|-------------|-----------------------------|-------------------------|-------------------------------|
| | | | | Owning half of cows | Owning less than half of cows |
| 1940 | | | | | |
| Number of farms..... | 45 | 14 | 40 | 14 | 9 |
| Assets..... | \$22 892 | \$23 988 | \$6 652 | \$5 054 | \$3 982 |
| Liabilities..... | 4 998 | 7 896 | 1 148 | 1 801 | 426 |
| Net worth..... | 17 894 | 16 092 | 5 504 | 3 253 | 3 556 |
| 1941 | | | | | |
| Number of farms..... | 51 | 16 | 50 | 21 | 8 |
| Assets..... | \$24 670 | \$24 635 | \$7 780 | \$5 093 | \$5 137 |
| Liabilities..... | 5 932 | 8 355 | 1 568 | 1 439 | 392 |
| Net worth..... | 18 738 | 16 280 | 6 212 | 3 654 | 4 745 |
| 1942 | | | | | |
| Number of farms..... | 43 | 18 | 37 | 13 | 7 |
| Assets..... | \$25 018 | \$26 079 | \$8 339 | \$6 622 | \$6 570 |
| Liabilities..... | 5 085 | 6 375 | 1 302 | 1 381 | 438 |
| Net worth..... | 19 933 | 19 704 | 7 037 | 5 241 | 6 132 |

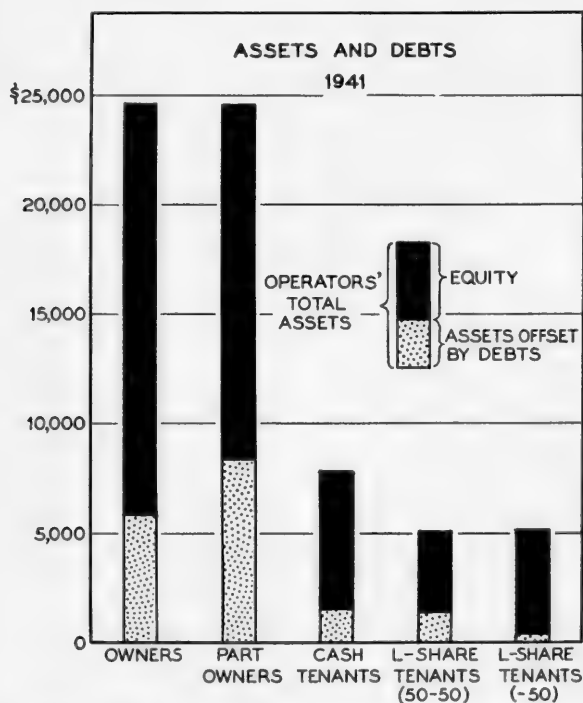


Fig. 1.—Capital and debt positions of operators in 1941. These farmers owned a large share of the capital they used.

TABLE 3.—CAPITAL POSITION OF 146 OWNERS, PART OWNERS, AND TENANTS ON DECEMBER 31, 1941

| Item | Owners | Part owners | Cash tenants* | Livestock-share tenants | |
|--|----------|-------------|---------------|-------------------------|-------------------------------|
| | | | | Owning half of cows | Owning less than half of cows |
| Number of farms | 51 | 16 | 50 | 21 | 8 |
| Assets | | | | | |
| Land and improvements | \$16 060 | \$15 479 | \$ 0 | \$ 0 | \$ 0 |
| Machinery and equipment | 2 170 | 2 374 | 1 923 | 1 923 | 2 209 |
| Horses | 271 | 259 | 307 | 313 | 304 |
| Dairy cattle | 2 827 | 3 313 | 2 892 | 1 861 | 748 |
| Other livestock | 550 | 524 | 485 | 237 | 420 |
| Feed and grain | 2 026 | 2 464 | 1 653 | 1 046 | 1 644 |
| Insurance, etc. | 265 | 235 | 185 | 66 | 350 |
| Total current assets | 8 109 | 9 169 | 7 445 | 5 446 | 5 675 |
| Total farm assets | 24 169 | 24 648 | 7 445 | 5 446 | 5 675 |
| Other investments | 1 266 | 944 | 1 299 | 2 | 194 |
| Total assets | \$25 435 | \$25 592 | \$8 744 | \$5 448 | \$5 869 |
| Liabilities | | | | | |
| First land mortgage | \$ 4 189 | \$ 5 439 | \$ 0 | \$ 0 | \$ 0 |
| Second land mortgage | 703 | 1 444 | 0 | 0 | 0 |
| Other long-term debts | 128 | 0 | 547 | 0 | 0 |
| Total long-term debts | 5 020 | 6 883 | 547 | 0 | 0 |
| Chattel mortgages | 141 | 530 | 917 | 729 | 0 |
| Conditional sales | 101 | 129 | 93 | 264 | 0 |
| Personal notes | 392 | 536 | 208 | 235 | 100 |
| Unsecured debts | 5 | 52 | 31 | 106 | 287 |
| Interest in arrears | 4 | 20 | 10 | 41 | 1 |
| Principal in arrears | 18 | 18 | 0 | 2 | 0 |
| Other debts | 11 | 0 | 7 | 3 | 0 |
| Total short-term debts | 672 | 1 285 | 1 266 | 1 380 | 388 |
| Total liabilities | \$ 5 692 | \$ 8 168 | \$1 813 | \$1 380 | \$ 388 |
| Net worth | 19 743 | 17 424 | 6 931 | 4 068 | 5 481 |
| Net worth and liabilities | \$25 435 | \$25 592 | \$8 744 | \$5 448 | \$5 869 |
| Debt ratio, percent | | | | | |
| Total debts to total assets | 22 | 32 | 21 | 25 | 7 |
| Short-term debts to current assets | 8 | 14 | 17 | 25 | 7 |
| Long-term debts to land and improvements | 31 | 44 | ... | ... | ... |
| Size —acres owned | | | | | |
| —acres operated | 138 | 122 | 0 | 0 | 0 |
| —number of cows milked | 138 | 182 | 146 | 156 | 192 |
| | 20.8 | 23.0 | 22.1 | 26.5 | 32.8 |

*The data concerning two crop-share tenants were included in those for cash tenants.

were the least indebted group. The light debts of the share group indicated how much simpler a tenant's financial problem is when the landlord assumes part of the financial responsibility for the operation of the farm. These facts are shown graphically in Fig. 1.

These data indicate what is to be expected—that farmers who have adequate capital are likely to be land owners, while those who are short of capital are likely to be tenants. It should be noted, however, that in 1942 these various groups of tenants had assets averaging \$6,600 to \$8,300. Thus even when the operator does not own the land, his capital requirements in this area are high.

The distribution of the operator's capital in each of the five tenure groups on December 31, 1941, is shown in Table 3. Noticeable are the large investments of the owners and part owners in land; the smaller investments of the livestock-share tenants in dairy cattle, particularly

by those who owned less than half the cows; the generally lighter investments of the tenants in machinery and equipment, other livestock, and feed and grain; and the general tendency for owners and part owners to have larger current assets than the tenants. The owners and cash tenants operated the smallest farms; the livestock-share tenants, owning half the cows operated somewhat larger farms; and the part owners and the livestock-share tenants owning less than half the cows operated the largest farms.

On December 31, 1941, the equities of these operators in their assets were as follows: livestock-share tenants owning less than half the cows owned 93 percent of their assets; cash tenants owned 79 percent of their assets; full owners, 78 percent; "50-50" livestock-share tenants, 75 percent; part owners, 68 percent. The part owners were using borrowed funds more extensively than were the other groups. Presumably these men were formerly tenants who had borrowed in order to buy land.

Progress during the period. Since the farms included in the study were not exactly the same each year, the best index to the progress of each group of operators is the change that took place in their capital position between the beginning and the end of each year (Tables 4 and 5).

The reason the land item changed so little was that no allowance was made for any increases in land value during the year. But for both the combined owner and part-owner groups and for the combined tenant groups, current assets in all principal classes increased in each of the three years. The largest increases were in livestock—both dairy cattle and other livestock—and in feed and grain. Thruout the period both groups increased their assets each year, the increases being larger in 1941 and 1942 than in 1940. It is noteworthy that owners and tenants increased their assets about the same amount.

The tenants were able to increase their assets as rapidly as the owners by following different debt policies. Thruout this period the owners were reducing their debts: by an average of \$134 in 1940, \$455 in 1941, and \$914 in 1942. The tenants were increasing their debts in 1940 and 1941 and just about maintaining them in 1942.

The owners increased their net worth more than did the tenants. But in relation to capital invested, the rate of increase in the tenants' net worth was more than double that of the owners:

| | <i>Tenants</i> | <i>Owners</i> |
|-----------|----------------|---------------|
| 1940..... | 12.8 | 4.6 |
| 1941..... | 31.1 | 13.0 |
| 1942..... | 33.3 | 17.1 |

TABLE 4.—CHANGES IN CAPITAL POSITION OF OWNERS AND PART OWNERS EACH YEAR, 1940, 1941, AND 1942

| | 1940 | | 1941 | | 1942 | |
|---|-----------|----------|-----------|----------|-----------|----------|
| | Beginning | End | Beginning | End | Beginning | End |
| Number of farms..... | 59 | | 67 | | 61 | |
| Assets | | | | | | |
| Land and improvements.. | \$15 839 | \$15 817 | \$15 961 | \$15 921 | \$15 258 | \$15 155 |
| Machinery and equipment | 1 698 | 1 897 | 1 943 | 2 219 | 2 157 | 2 234 |
| Horses..... | 288 | 297 | 268 | 268 | 282 | 322 |
| Dairy cattle..... | 2 088 | 2 223 | 2 251 | 2 943 | 2 997 | 3 953 |
| Other livestock..... | 357 | 379 | 360 | 543 | 527 | 731 |
| Feed and grain..... | 1 375 | 1 668 | 1 656 | 2 131 | 2 131 | 2 331 |
| Insurance, etc..... | 217 | 233 | 249 | 258 | 299 | 288 |
| Total current assets..... | 6 023 | 6 697 | 6 727 | 8 362 | 8 393 | 9 859 |
| Total farm assets..... | 21 862 | 22 514 | 22 688 | 24 283 | 23 651 | 25 014 |
| Other investments..... | 997 | 933 | 1 163 | 1 190 | 904 | 1 075 |
| Total assets..... | \$22 859 | \$23 447 | \$23 851 | \$25 473 | \$24 555 | \$26 089 |
| Liabilities | | | | | | |
| First land mortgage..... | \$ 4 287 | \$ 4 126 | \$ 4 763 | \$ 4 488 | \$ 4 252 | \$ 3 641 |
| Second land mortgage..... | 775 | 694 | 967 | 880 | 924 | 827 |
| Other long-term debts..... | 0 | 0 | 106 | 97 | 0 | 0 |
| Total long-term debts..... | 5 062 | 4 820 | 5 836 | 5 465 | 5 176 | 4 468 |
| Chattel mortgages..... | 320 | 315 | 325 | 234 | 223 | 210 |
| Conditional sales..... | 8 | 75 | 68 | 108 | 89 | 22 |
| Personal notes..... | 326 | 348 | 447 | 426 | 377 | 266 |
| Unsecured debts..... | 11 | 10 | 12 | 16 | 17 | 17 |
| Interest in arrears..... | 1 | 3 | 2 | 8 | 9 | 6 |
| Principal in arrears..... | 22 | 43 | 40 | 14 | 20 | 9 |
| Other debts..... | 3 | 5 | 9 | 13 | 10 | 9 |
| Total short-term debts..... | 691 | 799 | 903 | 819 | 745 | 539 |
| Total liabilities..... | \$ 5 753 | \$ 5 619 | \$ 6 739 | \$ 6 284 | \$ 5 921 | \$ 5 007 |
| Net worth..... | 17 106 | 17 828 | 17 112 | 19 189 | 18 634 | 21 082 |
| Net worth and liabilities..... | \$22 859 | \$23 447 | \$23 851 | \$25 473 | \$24 555 | \$26 089 |
| Changes | | | | | | |
| Increase in assets..... | \$588 | | \$1 622 | | \$1 534 | |
| Decrease in liabilities..... | 134 | | 455 | | 914 | |
| Increase in net worth | | | | | | |
| Excluding cash..... | 722 | | 2 077 | | 2 448 | |
| Including cash..... | 809 | | 2 361 | | 3 388 | |
| Percent increase with cash..... | 4.6 | | 13.0 | | 17.1 | |
| Debt ratio, percent | | | | | | |
| Total debts to total assets.. | 24.0 | | 28.3 | | 24.1 | |
| Short-term debts to current assets..... | 11.9 | | 13.4 | | 8.9 | |
| Long-term debts to land and improvements... | 30.5 | | 36.6 | | 33.9 | |

The above percentages allow for apparent changes in cash position, as discussed on pages 552 and 553. The main reduction in debts was in real-estate mortgages.

At the bottom of page 531 are further details concerning net-worth differences between tenants and owners in each of the three years of the study.

Obviously this was a period of capital accumulation, reflecting both higher prices and increases in physical assets. Even tho the owners reduced their debts, increases in assets contributed more to increasing their net worth than did debt reduction. The high rate of returns on net worth indicates that in this period it paid to have the use of larger assets even if it was necessary to borrow in order to get them.

TABLE 5.—CHANGES IN CAPITAL POSITION OF TENANTS EACH YEAR, 1940, 1941, AND 1942

| | 1940 | | 1941 | | 1942 | |
|--|-----------|---------|-----------|---------|-----------|---------|
| | Beginning | End | Beginning | End | Beginning | End |
| Number of farms..... | 63 | | 79 | | 57 | |
| Assets | | | | | | |
| Land and improvements.. | \$ 0 | \$ 0 | \$ 0 | \$ 0 | \$ 0 | \$ 0 |
| Machinery and equipment | 1 562 | 1 764 | 1 676 | 1 952 | 1 919 | 2 100 |
| Horses..... | 358 | 381 | 329 | 308 | 319 | 302 |
| Dairy cattle..... | 1 542 | 1 770 | 1 836 | 2 401 | 2 363 | 3 086 |
| Other livestock..... | 263 | 304 | 301 | 413 | 364 | 507 |
| Feed and grain..... | 1 094 | 1 335 | 1 252 | 1 491 | 1 404 | 1 585 |
| Insurance, etc..... | 140 | 147 | 154 | 170 | 214 | 223 |
| Total current assets..... | 4 959 | 5 701 | 5 548 | 6 735 | 6 583 | 7 803 |
| Total farm assets..... | 4 959 | 5 701 | 5 548 | 6 735 | 6 583 | 7 803 |
| Other investments..... | 577 | 593 | 473 | 842 | 361 | 708 |
| Total assets..... | \$5 536 | \$6 294 | \$6 021 | \$7 577 | \$6 944 | \$8 511 |
| Liabilities | | | | | | |
| First land mortgage..... | \$ 0 | \$ 0 | \$ 0 | \$ 0 | \$ 0 | \$ 0 |
| Second land mortgage..... | 0 | 0 | 0 | 0 | 0 | 0 |
| Other long-term debts..... | 85 | 81 | 65 | 346 | 88 | 173 |
| Total long-term debts..... | 85 | 81 | 65 | 346 | 88 | 173 |
| Chattel mortgages..... | 635 | 814 | 858 | 775 | 660 | 656 |
| Conditional sales..... | 54 | 53 | 70 | 139 | 157 | 46 |
| Personal notes..... | 286 | 243 | 214 | 228 | 210 | 219 |
| Personal debts..... | 50 | 43 | 53 | 48 | 81 | 19 |
| Interest in arrears..... | 11 | 17 | 10 | 17 | 9 | 1 |
| Principal in arrears..... | 0 | 0 | 0 | 1 | 0 | 0 |
| Other debts..... | 0 | 6 | 5 | 5 | 10 | 98 |
| Total short-term debts..... | 1 036 | 1 176 | 1 210 | 1 208 | 1 127 | 1 039 |
| Total liabilities..... | \$1 121 | \$1 257 | \$1 275 | \$1 554 | \$1 215 | \$1 212 |
| Net worth..... | 4 415 | 5 037 | 4 746 | 6 023 | 5 729 | 7 299 |
| Net worth and liabilities..... | \$5 536 | \$6 294 | \$6 021 | \$7 577 | \$6 944 | \$8 511 |
| Changes | | | | | | |
| Increase in assets..... | \$758 | | \$1 556 | | \$1 567 | |
| Decrease in liabilities..... | (136*) | | (279*) | | 3 | |
| Increase in net worth..... | | | | | | |
| Excluding cash..... | 622 | | 1 277 | | 1 570 | |
| Including cash..... | 603 | | 1 677 | | 2 169 | |
| Percent increase with cash..... | | 12.8 | | 31.1 | | 33.3 |
| Debt ratio, percent | | | | | | |
| Total debts to total assets.. | | 20.0 | | 21.2 | | 17.5 |
| Short-term debts to current assets..... | | 20.6 | | 21.8 | | 17.1 |
| Long-term debts to land and improvements.. |  | .... |  | .... |  | .... |

*Increase.

NET-WORTH DIFFERENCES BETWEEN OWNERS AND TENANTS

| | Increase in net worth, including cash | | | Percent increase in net worth, including changes in cash | | |
|--|--|--------|---------|--|------|------|
| | 1940 | 1941 | 1942 | 1940 | 1941 | 1942 |
| | Owners..... | \$ 737 | \$2 293 | \$3 107 | 4.1 | 12.2 | 15.6 |
| Part owners..... | 1 042 | 2 581 | 4 068 | 6.5 | 15.9 | 20.6 |
| Cash tenants..... | 787 | 1 916 | 2 418 | 14.3 | 30.8 | 34.4 |
| Livestock-share tenants | | | | | | |
| Owning 50 percent of cows... | 184 | 1 097 | 1 400 | 5.7 | 31.0 | 26.7 |
| Owning less than 50 percent of cows..... | 440 | 1 723 | 2 285 | 12.4 | 36.3 | 37.3 |

Operators With Different Debt Ratios

One indication of a farmer's financial position is the ratio of his debts to his assets, that is, the percentage which his debts are of the value of property he owns. In this analysis, figures for owners and part owners were combined, as were those for all classes of tenants. How did the size of debts in relation to assets affect the ability of a farmer to acquire further assets and to make financial progress?

Among the owners (Table 6 and Fig. 2) the total assets tended to be larger where debt ratios exceeded 20 percent than where they were less than 20 percent or where there were no debts. The more heavily indebted owners had more invested in land and improvements, somewhat more in machinery and equipment, and substantially more in dairy cattle. The cash values of their insurance policies also averaged lower. The owners possessing the largest assets also owned and operated the largest farms as measured in acres; particularly was this true for the 19 farmers with debt ratios of 40 percent and over. The 27 with debt ratios of 20 to 39 percent had slightly larger farms and slightly larger dairy herds, more valuable land, and more valuable cows than did those with lower debt ratios. This group also had a high rate of milk production per cow.

TABLE 6.—CAPITAL POSITION OF 67 OWNERS AND PART OWNERS WITH DIFFERENT DEBT-TO-PROPERTY RATIOS, DECEMBER 31, 1941

| Debt ratio | 0 | 1-19% | 20-39% | 40% and over |
|---|------------------|----------|----------|--------------|
| Number of farms | 12 | 9 | 27 | 19 |
| Assets | | | | |
| Land and improvements | \$14 694 | \$12 338 | \$16 195 | \$18 005 |
| Machinery and equipment | 2 045 | 1 805 | 2 189 | 2 568 |
| Horses | 222 | 262 | 286 | 274 |
| Dairy cattle | 2 320 | 2 342 | 3 172 | 3 295 |
| Other livestock | 668 | 310 | 479 | 667 |
| Feed and grain | 2 023 | 1 736 | 1 963 | 2 624 |
| Insurance, etc. | 375 | 472 | 280 | 53 |
| Total current assets | 7 653 | 6 927 | 8 369 | 9 481 |
| Total farm assets | 22 347 | 19 265 | 24 564 | 27 486 |
| Other investments | 1 917 | 2 306 | 701 | 895 |
| Total assets | \$24 264 | \$21 571 | \$25 265 | \$28 381 |
| Liabilities | | | | |
| First land mortgages | \$ 0 | \$ 1 356 | \$ 4 845 | \$ 8 297 |
| Second land mortgages | 0 | 0 | 918 | 1 799 |
| Other long-term debts | 0 | 0 | 0 | 343 |
| Total long-term debts | 0 | 1 356 | 5 763 | 10 439 |
| Total short-term debts | 103 ^a | 329 | 739 | 1 616 |
| Total debts | 103 | 1 685 | 6 502 | 12 055 |
| Net worth | \$24 161 | \$19 886 | \$18 763 | \$16 326 |
| Average debt ratio, percent. | 0 | 8.0 | 26.0 | 42.0 |
| Size—acres owned | 121 | 117 | 125 | 164 |
| —acres operated | 127 | 122 | 134 | 195 |
| —number of cows milked | 19.2 | 21.8 | 20.9 | 23.2 |

^aFarms with no debts at the beginning of the year were classified in this group.

These figures suggest either that owners with high debt ratios had borrowed to acquire larger businesses, or that the larger businesses tended to keep the owners in debt. The survey does not show definitely which of these two explanations is correct. It is clear, however, that enough loan capital was available to permit the owners of the larger farms to acquire or to hold their added assets.

Among the tenants (Table 7) the relation between size of farm and debt ratio was the reverse of that among owners. The less heavily indebted tenant operators and those that had no indebtedness possessed more assets and had larger businesses as measured by the number of cows, investments in machinery and equipment, and in feed and grain. However, the more heavily indebted tenants had larger investments in dairy cattle. This was probably due to the fact that a large proportion of the farmers in this group operated under leases that provided for the ownership of fewer cattle by the landlord than was provided by the leases in the other groups.

The fact that 17 of the tenant farmers had debt ratios of 40 percent or more indicates the ease with which operators in this area could borrow money to acquire farm assets.

The debts of owners (Table 6) were chiefly long-term debts. There were second mortgages only in the groups having an indebtedness of

TABLE 7.—CAPITAL POSITION OF 79 TENANTS WITH DIFFERENT DEBT-TO-PROPERTY RATIOS, DECEMBER 31, 1941

| Debt ratio..... | 0 | 1-19% | 20-39% | 40% and over |
|---|------------------|-------------|-------------|--------------|
| Number of farms..... | 19 | 21 | 22 | 17 |
| Assets | | | | |
| Land and improvements..... | \$ 0 | \$ 0 | \$ 0 | \$ 0 |
| Machinery and equipment..... | 2 241 | 2 023 | 1 901 | 1 604 |
| Horses..... | 328 | 303 | 345 | 246 |
| Dairy cattle..... | 2 312 | 2 230 | 2 579 | 2 483 |
| Other livestock..... | 471 | 285 | 498 | 396 |
| Feed and grain..... | 1 805 | 1 564 | 1 428 | 1 130 |
| Insurance, etc..... | 364 | 159 | 107 | 47 |
| Total current assets ^a | 7 521 | 6 564 | 6 858 | 5 906 |
| Other investments..... | 1 023 | 1 501 | 726 | 0 |
| Total assets..... | \$8 544 | \$8 065 | \$7 584 | \$5 906 |
| Liabilities | | | | |
| First land mortgages..... | \$ 0 | \$ 0 | \$ 0 | \$ 0 |
| Second land mortgages..... | 0 | 0 | 0 | 0 |
| Other long-term debts..... | 263 | 859 | 195 | 0 |
| Total long-term debts..... | 263 | 859 | 195 | 0 |
| Total short-term debts..... | 58 | 548 | 1 405 | 3 053 |
| Total debts..... | 321 ^b | 1 407 | 1 600 | 3 053 |
| Net worth..... | \$8 223 | \$6 658 | \$5 984 | \$2 853 |
| Average debt ratio, percent..... | 4.0 | 17.0 | 21.0 | 52.0 |
| Size | | | | |
| —acres owned..... | 0 | 0 | 0 | 0 |
| —acres operated..... | 159 | 142 | 164 | 150 |
| —number of cows milked..... | 27.3 | 21.4 | 25.7 | 23.6 |

^aAlso total farm assets since these tenants had no other farm assets. ^bFarms with no debts at the beginning of the year were classified in this group.

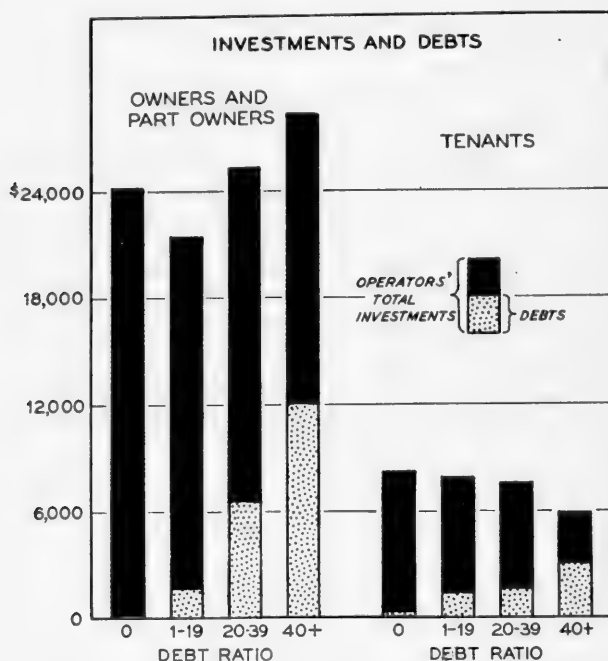


Fig. 2.—Total investments and debts of operators having different debt ratios, December 31, 1941. When the farms of no-debt owners were left out of consideration, the total investments of the remaining owners were positively correlated with debt ratio; that is, the more heavily indebted owner-operators had the larger investments. The reverse was true for tenants, the more heavily indebted tenants having the use of less capital.

20 percent and over. These latter groups had the largest short-term debts. Mortgage debts of the most heavily indebted group of owners represented 60 percent of the value of land and improvements.

Progress during the period. From Table 8 two significant observations can be made concerning the average assets and liabilities of owners and part owners in each debt-ratio group for the three years. (It should be remembered that the farms were not identical from year to year.) The situation in 1941 is shown in Fig. 3.

First, altho all groups increased their assets each year during this period, the increases were largest where the debts were highest. The more heavily indebted owners built up their assets and reduced their debts to a greater extent in each of these three years than did the less heavily indebted owners. The amortization principle, which normally involves payment in proportion to the size of the loan, partly accounts

TABLE 8.—CHANGES IN ASSETS AND LIABILITIES OF OWNERS AND PART OWNERS WITH DIFFERENT DEBT-TO-PROPERTY RATIOS, 1940, 1941, AND 1942

| Year | Number of farms | Debt ratio, percent | End of year | | Changes during the year | | Increase in net worth | | |
|------------------------------------|-----------------|---------------------|-------------|-------------|-----------------------------------|-------------------------|-----------------------|----------------|------------------------------|
| | | | Assets | Liabilities | Increase in assets excluding cash | Decrease in liabilities | Excluding cash | Including cash | Percent increase (with cash) |
| No debts | | | | | | | | | |
| 1940..... | 12 | 0 | \$24 358 | \$ 0 | \$ 447 | \$ 0 | \$ 447 | \$ 762 | 3.2 |
| 1941..... | 12 | 0* | 24 264 | 103 | 1 108 | (103 ^b) | 1 005 | 1 660 | 7.0 |
| 1942..... | 9 | 0 | 29 583 | 0 | 1 663 | 0 | 1 663 | 4 370 | 15.2 |
| Debt ratios of 1 to 19 percent | | | | | | | | | |
| 1940..... | 11 | 7 | \$20 251 | \$ 1 347 | \$ 360 | \$ (61 ^b) | \$ 299 | \$ 453 | 2.4 |
| 1941..... | 9 | 8 | 21 571 | 1 685 | 926 | 230 | 1 156 | 1 284 | 6.7 |
| 1942..... | 15 | 6 | 23 056 | 1 317 | 1 432 | 1 028 | 2 460 | 2 268 | 11.1 |
| Debt ratios of 20 to 39 percent | | | | | | | | | |
| 1940..... | 24 | 30 | \$24 030 | \$7 295 | \$ 602 | \$ 323 | \$ 925 | \$ 880 | 5.4 |
| 1941..... | 27 | 26 | 25 265 | 6 502 | 1 779 | 554 | 2 333 | 2 535 | 14.4 |
| 1942..... | 25 | 23 | 25 222 | 5 871 | 1 438 | 1 025 | 2 463 | 3 206 | 17.7 |
| Debt ratios of 40 percent and over | | | | | | | | | |
| 1940..... | 12 | 49 | \$24 299 | \$11 800 | \$ 910 | \$ 69 | \$ 979 | \$1 038 | 8.6 |
| 1941..... | 19 | 42 | 28 381 | 12 055 | 2 051 | 723 | 2 774 | 3 019 | 20.2 |
| 1942..... | 12 | 40 | 29 096 | 11 582 | 1 768 | 1 226 | 2 994 | 4 440 | 27.7 |

*Less than one-half of 1 percent. ^bThese are increases.

for the large payments the most heavily indebted farmers made. But some of these men made payments in addition to those required by the terms of their loans. It is clear that in the owner group debt reduction went hand in hand with increase in assets.

Second, the rate of increase in net worth became larger as debt ratios became higher. This was true in each of the three years. Two reasons for this were: (1) the rate earned by the operators of the more heavily indebted farms exceeded the cost of borrowing and thus increased the rate earned on the owner's net worth; (2) these more heavily indebted farms tended to be larger than the more lightly indebted farms, and in a period of favorable earnings large farms pay better than small farms.

In each group of tenants (Table 9) the assets were increased during each of the three years. The group with the lowest debts and the group with no debts did somewhat better, in general, than the two groups with the highest debts, but the situation was not clear-cut in this respect. Thruout the period these men were all accumulating capital, while changes in their debts varied. Debts tended to increase in the low-debt and no-debt groups and to be reduced in the group with

TABLE 9.—CHANGES IN ASSETS AND LIABILITIES OF TENANTS WITH DIFFERENT DEBT-TO-PROPERTY RATIOS, 1940, 1941, AND 1942

| Year | Num-ber of farms | Debt ratio, per-cent | End of year | | Changes during the year | | Increase in net worth | | |
|------------------------------------|------------------|----------------------|-------------|--------------|------------------------------------|---------------------------|-----------------------|-----------------|-------------------------------|
| | | | Assets | Liabili-ties | Increase in assets ex-cluding cash | De-crease in lia-bilities | Ex-cluding cash | In-cluding cash | Percent in-crease (with cash) |
| No debts | | | | | | | | | |
| 1940..... | 15 | 0 | \$7 401 | \$ 0 | \$ 916 | \$ 33 | \$ 949 | \$ 774 | 11.2 |
| 1941..... | 19 | 4 | 8 544 | 321 | 2 182 | (321*) | 1 861 | 2 076 | 28.5 |
| 1942..... | 12 | 2 | 9 518 | 208 | 1 658 | (208*) | 1 450 | 2 618 | 30.5 |
| Debt ratios of 1 to 19 percent | | | | | | | | | |
| 1940..... | 16 | 9 | \$7 040 | \$ 613 | \$ 833 | \$ (82*) | \$ 751 | \$ 694 | 11.5 |
| 1941..... | 21 | 17 | 8 065 | 1 407 | 1 996 | (868*) | 1 128 | 1 402 | 23.0 |
| 1942..... | 23 | 11 | 8 080 | 890 | 1 748 | (290*) | 1 458 | 2 015 | 31.2 |
| Debt ratios of 20 to 39 percent | | | | | | | | | |
| 1940..... | 20 | 29 | \$5 922 | \$1 705 | \$ 355 | \$ (54*) | \$ 301 | \$ 546 | 13.4 |
| 1941..... | 22 | 21 | 7 584 | 1 600 | 946 | 274 | 1 220 | 1 887 | 34.9 |
| 1942..... | 13 | 17 | 9 635 | 1 656 | 1 092 | 550 | 1 642 | 2 478 | 34.6 |
| Debt ratios of 40 percent and over | | | | | | | | | |
| 1940..... | 12 | 65 | \$4 535 | \$2 946 | \$1 134 | \$ (559*) | \$ 575 | \$ 369 | 28.3 |
| 1941..... | 17 | 52 | 5 906 | 3 053 | 1 134 | (218*) | 916 | 1 343 | 56.1 |
| 1942..... | 9 | 41 | 6 656 | 2 734 | 1 668 | 239 | 1 907 | 1 532 | 51.6 |

*These are increases.

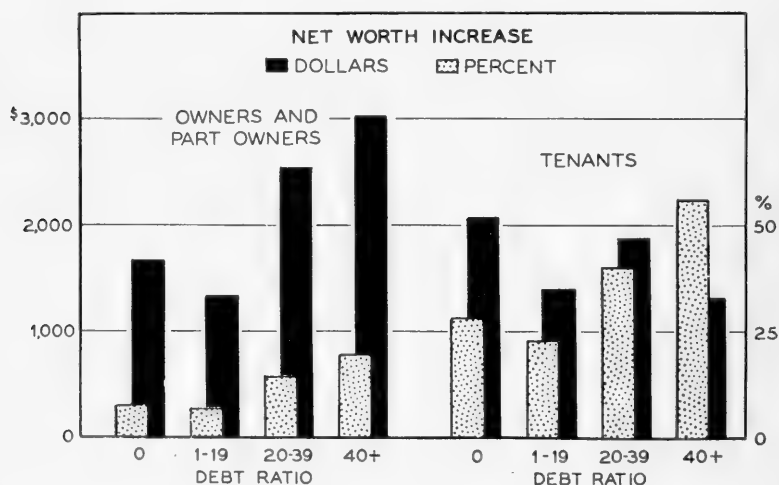


Fig. 3.—Change in net worth of operators with change in debt ratio, 1941. As measured in dollars, the increase in the net worth of owners, but not of tenants, became larger as the debt ratio increased. In both groups, however, the percentage increase became larger as the debt ratio increased, indicating that in this period it paid to use borrowed capital.

debt ratios of 20 percent to 39 percent. In the high-debt group they tended to increase in the first two years and to decline in 1942. The tenants were, in general, using their credit to build up their assets.

The possibilities that existed for farmers with comparatively small capital of their own to build up assets is illustrated by the increase in net worth among the tenants having debt ratios of 40 percent or more. These men increased their net worth, on the average, by amounts ranging from somewhat more than a quarter to somewhat more than a half in each of these three years. As was true with owners, the tenants having the highest debt ratios had the highest percentage increases in net worth; but unlike the owners having high debts, these high-debt tenants were not operating the larger farms.

Operators With Businesses of Different Size

A good measure of the size of a farm business is the number of productive man work units required in its operation in the course of a year.¹ As would be expected, the size of the business correlated directly with the amount of farm capital invested in each key item—land and improvements, machinery and equipment, dairy cattle, and

TABLE 10.—CAPITAL POSITION OF 67 OWNERS AND PART OWNERS HAVING FARM BUSINESSES OF DIFFERENT SIZE, DECEMBER 31, 1941

| Size of farm in productive man work units* . . . | Under 400 | 400-549 | 550-699 | 700 and over |
|--|-----------|----------|----------|--------------|
| Number of farms | 16 | 16 | 20 | 15 |
| Assets | | | | |
| Land and improvements | \$ 9 800 | \$13 743 | \$19 277 | \$20 300 |
| Machinery and equipment | 1 124 | 2 074 | 2 705 | 2 893 |
| Horses | 130 | 308 | 272 | 369 |
| Dairy cattle | 1 393 | 2 859 | 3 209 | 4 331 |
| Other livestock | 233 | 411 | 717 | 785 |
| Feed and grain | 806 | 1 589 | 2 699 | 3 365 |
| Insurance, etc. | 298 | 239 | 280 | 207 |
| Total current assets | 3 984 | 7 480 | 9 882 | 11 949 |
| Total farm assets | 13 784 | 21 223 | 29 159 | 32 249 |
| Other investments | 1 453 | 479 | 1 378 | 1 413 |
| Total assets | \$15 237 | \$21 702 | \$30 537 | \$33 662 |
| Liabilities | | | | |
| Long-term debts | \$ 2 238 | \$ 4 267 | \$ 6 622 | \$ 8 641 |
| Short-term debts | 551 | 687 | 578 | 1 566 |
| Total debts | \$ 2 789 | \$ 4 954 | \$ 7 200 | \$10 207 |
| Debt ratio, percent. | 18 | 23 | 24 | 30 |
| Average size of farm | | | | |
| Number of man work units | 310 | 489 | 621 | 830 |
| Number of acres owned | 69.8 | 107.6 | 161.6 | 194.6 |
| Number of acres operated | 70.6 | 117.1 | 178.3 | 225.2 |
| Number of cows milked | 11.7 | 18.6 | 23.4 | 30.7 |

*See definition given below

¹A productive man work unit is that amount of productive farm work (as distinguished from necessary but unproductive work) that can be performed at average intensity and efficiency in a 10-hour day.

feed and grain (Tables 10 and 11). Among the owners, the larger farms had the higher debt ratios, but among the tenants these two factors were not correlated (see also Fig. 4).

Per man work unit, the tenants had about \$10 invested in farm operating capital; the owners had between \$13 and \$14. The lower value for tenants reflects the effect of the tenants' sharing with the land owners the responsibility for providing capital. The owners of the

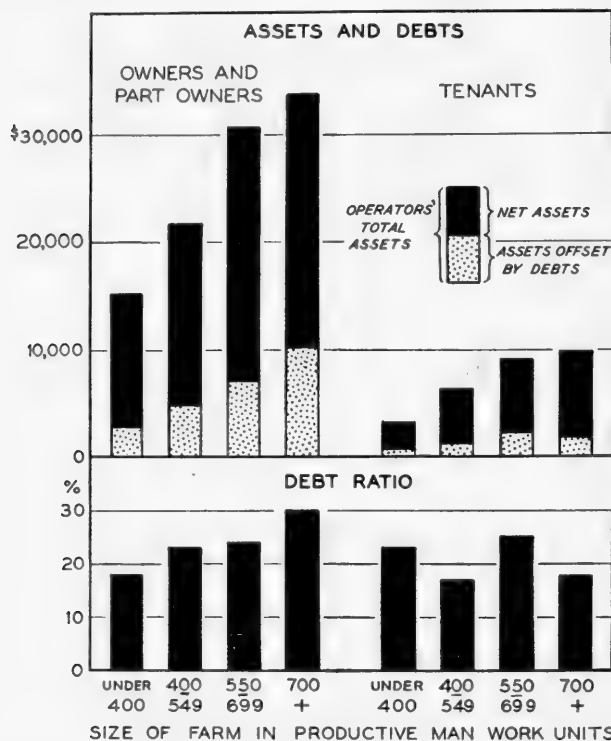


Fig. 4.—Assets, debts, and debt ratios of men operating farms of different size, December 31, 1941. For owners but not for tenants the debt ratio increased with size of farm; it averaged slightly over 20 percent.

15 largest farms had \$24 invested in land and improvements per man work unit, whereas the owners of the smallest farms had \$32 so invested. This difference is due partly to the fact that there were more part owners among the owners of the largest farms.

Examination of the financial progress of these farmers reveals that

in both the owner and the tenant groups size of business was positively correlated with the extent of the increases in net worth (Tables 12

TABLE 11.—CAPITAL POSITION OF 79 TENANTS WITH FARM BUSINESSES OF DIFFERENT SIZE, DECEMBER 31, 1941

| Size of farm in productive man work units . . . | Under 400 | 400-549 | 550-699 | 700 and over |
|---|-----------|---------|---------|--------------|
| Number of farms | 13 | 24 | 21 | 21 |
| Assets | | | | |
| Land and improvements | \$ 0 | \$ 0 | \$ 0 | \$ 0 |
| Machinery and equipment | 703 | 1 604 | 1 966 | 3 105 |
| Horses | 189 | 345 | 308 | 369 |
| Dairy cattle | 1 192 | 2 120 | 2 906 | 2 966 |
| Other livestock | 329 | 499 | 366 | 365 |
| Feed and grain | 717 | 1 190 | 1 717 | 2 088 |
| Insurance, etc. | 48 | 141 | 263 | 186 |
| Total current assets*. | 3 178 | 5 899 | 7 526 | 9 079 |
| Other investments | 44 | 526 | 1 550 | 867 |
| Total assets | \$3 222 | \$6 425 | \$9 076 | \$9 946 |
| Liabilities | | | | |
| Long-term debts | \$ 0 | \$ 209 | \$ 776 | \$ 288 |
| Short-term debts | 751 | 888 | 1 512 | 1 550 |
| Total debts | \$ 751 | \$1 097 | \$2 288 | \$1 838 |
| Debt ratio, percent | 23 | 17 | 25 | 18 |
| Average size of farm | | | | |
| Number of man work units | 306 | 487 | 610 | 927 |
| Number of acres owned | 0 | 0 | 0 | 0 |
| Number of acres operated | 90.1 | 133.2 | 151.6 | 218.3 |
| Number of cows milked | 12.0 | 19.7 | 24.8 | 35.9 |

*Also the total farm assets since these tenants had no other farm assets.

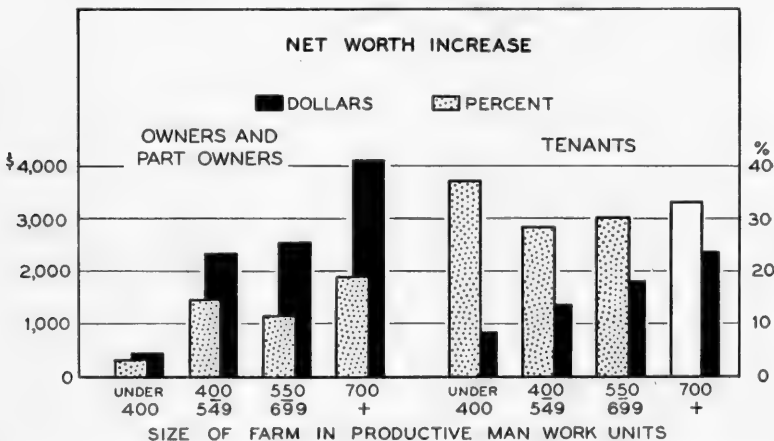


Fig. 5.—Amount and percentage of increase in net worth of operators in 1941. The dollar increases were positively correlated with size of farm in each group of operators, tho the increases in the tenant groups were less than in the owner groups. The percentage increases were much greater in the tenant groups than in the owner groups, but in the tenant groups the rate of increase tended to decline with size of farm rather than to increase, as in the owner groups.

TABLE 12.—CHANGES IN ASSETS AND LIABILITIES OF OWNERS AND PART OWNERS OPERATING FARM BUSINESSES OF DIFFERENT SIZE, 1940, 1941, AND 1942

| Year | Number of farms | Debt ratio, per cent | End of year | | Changes during the year | | Increase in net worth | | |
|---|-----------------|----------------------|-------------|-------------|-----------------------------------|-------------------------|-----------------------|----------------|------------------------------|
| | | | Assets | Liabilities | Increase in assets excluding cash | Decrease in liabilities | Excluding cash | Including cash | Percent increase (with cash) |
| Less than 400 productive man work units | | | | | | | | | |
| 1940..... | 17 | 20 | \$16 215 | \$3 177 | \$ 314 | \$ 24 | \$ 338 | \$ 462 | 3.6 |
| 1941..... | 16 | 18 | 15 237 | 2 789 | 285 | 261 | 546 | 442 | 3.6 |
| 1942..... | 11 | 17 | 15 329 | 2 583 | 607 | 265 | 872 | 868 | 7.1 |
| 400 to 549 productive man work units | | | | | | | | | |
| 1940..... | 15 | 21 | \$21 397 | \$4 510 | \$ 640 | \$ (98 ^a) | \$ 542 | \$ 684 | 4.1 |
| 1941..... | 16 | 23 | 21 702 | 4 954 | 1 517 | 591 | 2 108 | 2 333 | 14.9 |
| 1942..... | 13 | 17 | 24 170 | 4 029 | 1 585 | 841 | 2 426 | 2 919 | 15.4 |
| 550 to 699 productive man work units | | | | | | | | | |
| 1940..... | 18 | 24 | \$28 238 | \$6 702 | \$ 618 | \$ 196 | \$ 814 | \$ 769 | 3.6 |
| 1941..... | 20 | 24 | 30 537 | 7 200 | 1 733 | 362 | 2 095 | 2 558 | 11.5 |
| 1942..... | 20 | 19 | 27 678 | 5 168 | 1 529 | 1 092 | 2 621 | 3 136 | 14.8 |
| 700 productive man work units and over | | | | | | | | | |
| 1940..... | 9 | 32 | \$30 937 | \$ 9 912 | \$ 958 | \$ 605 | \$1 563 | \$1 745 | 8.6 |
| 1941..... | 15 | 30 | 33 662 | 10 207 | 3 009 | 580 | 3 589 | 4 116 | 19.0 |
| 1942..... | 17 | 22 | 32 668 | 7 139 | 2 103 | 1 181 | 3 284 | 5 681 | 23.8 |

^aThis is an increase.

TABLE 13.—CHANGES IN ASSETS AND LIABILITIES OF TENANTS OPERATING FARM BUSINESSES OF DIFFERENT SIZE, 1940, 1941, AND 1942

| Year | Number of farms | Debt ratio, per cent | End of year | | Changes during the year | | Increase in net worth | | |
|---|-----------------|----------------------|-------------|-------------|-----------------------------------|-------------------------|-----------------------|----------------|------------------------------|
| | | | Assets | Liabilities | Increase in assets excluding cash | Decrease in liabilities | Excluding cash | Including cash | Percent increase (with cash) |
| Less than 400 productive man work units | | | | | | | | | |
| 1940..... | 10 | 29 | \$2 744 | \$ 786 | \$ 535 | \$ (363 ^a) | \$ 172 | \$ 124 | 6.6 |
| 1941..... | 13 | 23 | 3 222 | 751 | 527 | (240 ^a) | 287 | 869 | 37.3 |
| 1942..... | 7 | 5 | 4 491 | 234 | 751 | 204 | 955 | 1 080 | 28.6 |
| 400 to 549 productive man work units | | | | | | | | | |
| 1940..... | 17 | 19 | \$5 348 | \$ 991 | \$ 545 | \$ (79 ^a) | \$ 466 | \$570 | 13.8 |
| 1941..... | 24 | 17 | 6 425 | 1 097 | 1 055 | (46 ^a) | 1 009 | 1 382 | 28.6 |
| 1942..... | 20 | 18 | 7 250 | 1 321 | 1 879 | (331 ^a) | 1 548 | 1 756 | 34.1 |
| 550 to 699 productive man work units | | | | | | | | | |
| 1940..... | 17 | 24 | \$7 564 | \$1 817 | \$ 582 | \$ (141 ^a) | \$ 438 | \$ 642 | 11.6 |
| 1941..... | 21 | 25 | 9 076 | 2 288 | 2 011 | (538 ^a) | 1 473 | 1 825 | 30.2 |
| 1942..... | 16 | 16 | 9 884 | 1 584 | 1 502 | (187 ^a) | 1 315 | 2 377 | 31.1 |
| 700 productive man work units and over | | | | | | | | | |
| 1940..... | 19 | 16 | \$7 872 | \$1 244 | \$1 223 | \$ (61 ^a) | \$1 162 | \$ 851 | 14.1 |
| 1941..... | 21 | 18 | 9 946 | 1 838 | 2 316 | (308 ^a) | 2 008 | 2 375 | 33.4 |
| 1942..... | 14 | 10 | 10 761 | 1 122 | 1 603 | 594 | 2 197 | 3 075 | 36.0 |

^aThese are increases.

and 13). In the period covered, such correlation was to be expected, for production was profitable and the larger the business the higher was the net income. Among the owners, the percentage increase in net worth also tended to increase with the size of the business, but among the tenants it did not increase so uniformly. Moreover, during this period, with the exception of 1942, the rate of increase tended to rise from year to year. The situation in 1941 is shown in Fig. 5.

All groups of owners reduced their debts in all three years except in 1940, when one group increased their debts. This confirms the observation on this point made on page 529. All groups of tenants increased their debts in all three years except in 1942, when two groups reduced their debts. These increases by tenants reflected their efforts to build up working capital. Thru these three years this policy proved to be wise. The question is: Will these men be able to foresee when the trend of income will be reversed and liquidate their indebtedness before their incomes begin to decline? As a group their debts were not large; in none of the subgroups did the average debt ratio exceed 20 percent of the assets at the end of 1942.

Operators With Continuous Records

Records were obtained concerning the businesses of 72 operators for 1940, 1941, and 1942. Changes in the financial position of these men are shown in Tables 14 and 15 and in Figs. 6, 7, and 8.

There was a moderate increase in the value of machinery and equipment, the increases between December 31, 1939, and December 31, 1942, being \$391 for the owners, \$733 for the part owners, \$534 for the cash tenants, and \$557 for the livestock-share tenants. The value of this class of property increased each year, even in 1942, when the output of farm machinery was restricted.

The most marked increase was in the value of dairy cattle. Between the beginning and the end of the period owners showed an increase of \$1,783 in this class of livestock; part owners, \$2,113; and cash tenants, \$1,708. The increase in the value of other livestock was also marked, particularly on the part-owner and cash-tenant farms. Feed and grain inventories also increased substantially.

The increase in the value of the assets on these farms was marked, considering conditions in the period covered. As pointed out before, the debts of owners and part owners were being reduced during this period, while until 1942 those of the tenants were increasing. The average debt ratio of owners declined from 23.1 percent on December 31, 1939, to 14.7 percent on December 31, 1942; the average debt ratio

TABLE 14.—COMPARATIVE BALANCE SHEETS AND DEBT-TO-PROPERTY RATIOS OF IDENTICAL OWNERS AND PART OWNERS, DECEMBER 31, 1939, 1940, 1941, AND 1942

| | Owners | | | | Part owners | | | |
|---|----------|----------|----------|----------|-------------|----------|----------|----------|
| | 1939 | 1940 | 1941 | 1942 | 1939 | 1940 | 1941 | 1942 |
| Number of farms..... | | | | | | | | |
| | | 25 | | | | 11 | | |
| Assets | | | | | | | | |
| Land and improvements..... | \$15 787 | \$15 750 | \$15 849 | \$16 102 | \$15 465 | \$15 443 | \$15 660 | \$14 296 |
| Machinery and equipment..... | 1 589 | 1 752 | 1 952 | 1 980 | 1 772 | 2 029 | 2 283 | 2 505 |
| Horses..... | 276 | 309 | 300 | 316 | 349 | 358 | 329 | 389 |
| Dairy cattle..... | 2 250 | 2 376 | 3 127 | 4 033 | 2 513 | 2 701 | 3 524 | 4 626 |
| Other livestock..... | 251 | 228 | 396 | 435 | 297 | 321 | 577 | 827 |
| Feed and grain..... | 1 415 | 1 603 | 2 036 | 2 368 | 1 511 | 1 855 | 2 381 | 2 479 |
| Insurance, etc..... | 378 | 413 | 438 | 410 | 91 | 91 | 91 | 91 |
| Total farm assets..... | 6 159 | 6 681 | 8 249 | 9 542 | 6 533 | 7 355 | 9 185 | 10 917 |
| Other investments..... | 21 946 | 22 431 | 24 098 | 25 644 | 21 998 | 22 798 | 24 845 | 25 213 |
| Total assets..... | 733 | 712 | 663 | 642 | 191 | 191 | 191 | 1 464 |
| | \$22 679 | \$23 143 | \$24 761 | \$26 286 | \$22 189 | \$22 989 | \$25 036 | \$26 677 |
| Liabilities | | | | | | | | |
| Total long-term debts..... | \$ 4 687 | \$ 4 417 | \$ 3 974 | \$ 3 420 | \$ 7 140 | \$ 6 951 | \$ 6 722 | \$ 5 540 |
| Total short-term debts..... | 541 | 617 | 577 | 456 | 1 040 | 1 722 | 1 404 | 989 |
| Total liabilities..... | \$ 5 228 | \$ 5 034 | \$ 4 551 | \$ 3 876 | \$ 8 180 | \$ 8 673 | \$ 8 126 | \$ 6 529 |
| Net worth..... | 17 451 | 18 109 | 20 210 | 22 410 | 13 409 | 14 316 | 16 910 | 20 148 |
| Net worth and liabilities..... | \$22 679 | \$23 143 | \$24 761 | \$26 286 | \$22 189 | \$22 989 | \$25 036 | \$26 677 |
| Changes. | | | | | | | | |
| Increase in assets..... | \$464 | \$1 618 | \$1 525 | | \$800 | \$2 047 | \$1 641 | |
| Decrease in liabilities..... | 194 | 483 | 675 | | 107 | 547 | 1 597 | |
| Increase in net worth..... | 658 | 2 101 | 2 200 | | 907 | 2 594 | 3 238 | |
| Excluding cash..... | 538 | 2 550 | 3 430 | | 884 | 2 985 | 4 477 | |
| Including cash..... | 3.0 | 13.3 | 16.1 | | 6.4 | 19.1 | 24.2 | |
| Percent increase..... | | | | | | | | |
| Debt ratio, percent | | | | | | | | |
| Total debts to total assets..... | 23.1 | 21.8 | 18.4 | 14.7 | 39.6 | 37.7 | 32.5 | 24.5 |
| Short-term debts to current assets..... | 8.8 | 0.2 | 7.0 | 4.8 | 25.1 | 23.4 | 15.3 | 9.1 |
| Long-term debts to land and improvements..... | 29.7 | 28.0 | 25.1 | 21.2 | 46.2 | 45.0 | 42.9 | 38.8 |
| Size | | | | | | | | |
| Productive man work units..... | | 534 | 565 | | | 629 | | 657 |
| Acres—owned..... | 127 | 127 | 120 | 120 | 120 | 120 | 120 | 120 |
| Acres—total operated..... | 131 | 127 | 133 | 133 | 169 | 179 | 189 | 189 |
| Number of cows milked..... | 19.5 | 20.5 | 22.2 | 22.2 | 22.2 | 23.9 | 23.8 | 23.8 |
| Months of labor—total..... | 23.9 | 25.0 | 24.0 | 24.0 | 24.6 | 28.4 | 23.8 | 23.8 |
| —hired..... | 5.0 | 6.9 | 6.1 | 6.1 | 4.7 | 7.0 | 6.5 | 6.5 |

TABLE 15.—COMPARATIVE BALANCE SHEETS AND DEBT-TO-PROPERTY RATIOS OF IDENTICAL TENANTS, DECEMBER 31, 1939, 1940, 1941, 1942, AND 1943

| | Cash tenants | | | | | Livestock-share tenants | | | | |
|---|--------------|----------|----------|----------|---------|-------------------------|----------|----------|----------|----------|
| | 1939 | 1940 | 1941 | 1942 | 1943 | 1939 | 1940 | 1941 | 1942 | 1943 |
| Number of farms..... | | | | | 23 | | | | | 13 |
| Assets | | | | | | | | | | |
| Land and improvements..... | \$ 1 410 | \$ 1 523 | \$ 1 823 | \$ 1 944 | \$ 0 | \$ 1 938 | \$ 2 005 | \$ 0 | \$ 0 | \$ 0 |
| Machinery and equipment..... | 292 | 300 | 280 | 282 | 280 | 370 | 1 379 | 2 313 | 2 495 | 2 464 |
| Horses..... | 1 806 | 1 996 | 2 751 | 3 508 | 3 074 | 849 | 1 127 | 1 547 | 2 187 | 2 187 |
| Dairy cattle..... | 250 | 304 | 428 | 724 | 724 | 197 | 211 | 397 | 461 | 461 |
| Other livestock..... | 1 203 | 1 383 | 1 743 | 1 800 | 1 800 | 882 | 1 080 | 1 447 | 1 480 | 1 480 |
| Feed and grain..... | 241 | 5 748 | 272 | 8 547 | 251 | 4 487 | 5 097 | 6 397 | 7 416 | 7 416 |
| Insurance, etc..... | 5 205 | 5 734 | 7 297 | 8 547 | 7 297 | 4 487 | 5 097 | 6 397 | 7 416 | 7 416 |
| Total current assets..... | 5 205 | 5 734 | 7 297 | 8 547 | 7 297 | 4 487 | 5 097 | 6 397 | 7 416 | 7 416 |
| Total farm assets..... | 1 205 | 1 237 | 1 428 | 1 994 | 1 205 | 1 068 | 1 110 | 1 121 | 1 418 | 1 418 |
| Other investments..... | \$6 410 | \$7 001 | \$8 725 | \$10 541 | \$6 410 | \$4 595 | \$5 207 | \$6 518 | \$7 864 | \$7 864 |
| Total assets..... | \$ 196 | \$ 191 | \$ 187 | \$ 234 | \$ 196 | \$ 1 068 | \$ 1 222 | \$ 1 115 | \$ 1 002 | \$ 1 002 |
| Liabilities | | | | | | | | | | |
| Total long-term debts..... | \$ 842 | \$1 020 | \$1 094 | \$1 057 | \$ 842 | \$1 068 | \$1 222 | \$1 115 | \$1 002 | \$1 002 |
| Total short-term debts..... | 5 568 | 5 981 | 7 631 | 9 484 | 5 568 | 3 527 | 3 985 | 5 403 | 6 862 | 6 862 |
| Total liabilities..... | \$6 410 | \$7 001 | \$8 725 | \$10 541 | \$6 410 | \$4 595 | \$5 207 | \$6 518 | \$7 864 | \$7 864 |
| Net worth..... | | | | | | | | | | |
| Net worth and liabilities..... | | | | | | | | | | |
| Changes | | | | | | | | | | |
| Increase in assets..... | \$591 | \$1 724 | \$1 816 | \$1 816 | \$591 | \$612 | \$1 311 | \$1 346 | \$1 346 | \$1 346 |
| Decrease in liabilities..... | 178* | 74* | 37 | 37 | 178* | 154* | 107 | 113 | 113 | 113 |
| Increase in net worth..... | 413 | 1 650 | 1 853 | 1 853 | 413 | 458 | 1 418 | 1 459 | 1 459 | 1 459 |
| Excluding cash..... | 372 | 1 931 | 2 512 | 2 512 | 372 | 294 | 1 626 | 1 976 | 1 976 | 1 976 |
| Including cash..... | 6.4 | 28.4 | 29.4 | 29.4 | 6.4 | 7.8 | 34.6 | 32.2 | 32.2 | 32.2 |
| Percent increase..... | | | | | | | | | | |
| Debt ratio, percent | | | | | | | | | | |
| Total debts to total assets..... | 13.1 | 14.6 | 12.5 | 10.0 | 13.1 | 23.2 | 23.5 | 17.6 | 12.7 | 12.7 |
| Short-term debts to current assets..... | 12.4 | 14.4 | 12.4 | 9.6 | 12.4 | 23.8 | 24.0 | 17.4 | 13.5 | 13.5 |
| Long-term debts to land and improvements..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Size | | | | | | | | | | |
| Productive man work units..... | 134 | 134 | 143 | 143 | 541 | 551 | 792 | 788 | 788 | 788 |
| Acres, total..... | 20.4 | 21.1 | 21.7 | 21.7 | 182 | 182 | 180 | 180 | 180 | 180 |
| Number of cows milked..... | 22.3 | 23.0 | 23.0 | 23.0 | 30.3 | 31.7 | 32.3 | 32.3 | 32.3 | 32.3 |
| Months of labor—total..... | 5.9 | 5.8 | 4.8 | 4.8 | 24.0 | 26.6 | 25.7 | 25.7 | 25.7 | 25.7 |
| —hired..... | 5.9 | 5.8 | 4.8 | 4.8 | 6.5 | 6.1 | 5.3 | 5.3 | 5.3 | 5.3 |

*These are increases.

of part owners declined from 39.6 percent to 24.5 percent. This latter group reduced their short-term debts from an average of \$1,640 to an average of \$989. The average debt ratio of the cash tenants declined from 13.1 percent to 10.0 percent, a decline reflecting a larger increase in assets than in debts; and the average debt-ratio of the livestock-share tenants declined from 23.2 percent to 12.7 percent.

Between the above dates the farms operated by owners increased by an average of 2 acres; those operated by part owners, 20 acres, and by cash tenants, 9 acres; while livestock-share tenants reduced their farms an average of 2 acres. All groups increased the number of cows milked; the greatest change was made by owners, who averaged an increase of 2.7 cows each. The number of months of labor used on these farms changed but little over this three-year period.

The increase in value of livestock and of feed and grain in this

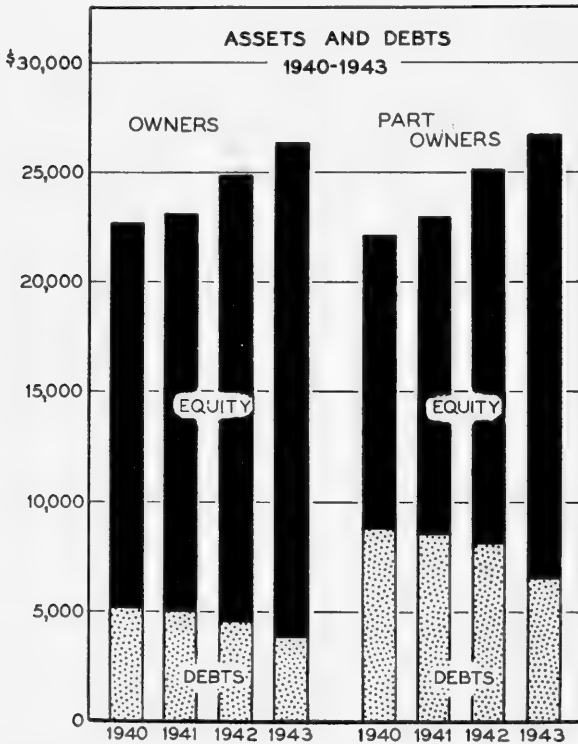


Fig. 6.—Capital and debt positions of owners and part owners on identical farms, 1940-1943. The amounts of capital used by these operators increased, whereas their debts were reduced, particularly in 1943.

period reflected, in large part, the rise in prices. When individual farmers buy and sell livestock frequently, as they do in this area, there is no practical way to inventory it except at current values. Changes in numbers of animal units are of interest, therefore, and are shown in Table 16.

On the whole, except on the larger farms in 1942, the number of dairy cattle on these farms tended to increase. Over the three-year period, the owners of the larger farms increased their herds more than the owners of the smaller farms. The reverse was true for the tenants, those on the small farms increasing their herds more than those on the larger farms.

No marked increase occurred in the numbers of hogs inventoried. The group of owners having the largest farms and the two groups of tenants on the larger farms had fewer hogs at the end of the period

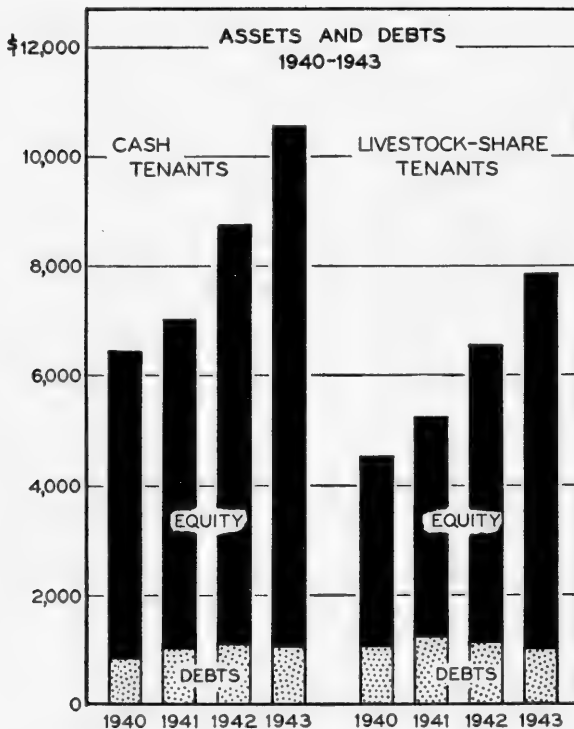


Fig. 7.—Capital and debt positions of tenants on identical farms, 1940-1943. The amounts of capital used by these farmers increased sharply during this period, while debts remained about constant.

TABLE 16.—CHANGES IN ANIMAL UNITS ON 72 IDENTICAL FARMS DURING 1940, 1941, AND 1942

| Tenure, and size in terms of productive man work units | Number of farms | Animal units on hand on December 31 | | | | Over-all change |
|--|-----------------|-------------------------------------|------|------|------|-----------------|
| | | 1939 | 1940 | 1941 | 1942 | |
| Dairy cattle | | | | | | |
| Owners and part owners | | | | | | |
| Less than 400..... | 7 | 15.2 | 15.9 | 15.1 | 16.7 | +1.5 |
| 400-549..... | 11 | 21.8 | 23.2 | 24.9 | 25.4 | +3.6 |
| 550-699..... | 11 | 27.4 | 27.7 | 29.5 | 30.6 | +3.2 |
| 700 and over..... | 7 | 36.8 | 39.0 | 41.4 | 41.0 | +4.2 |
| Tenants | | | | | | |
| Less than 400..... | 6 | 10.6 | 14.5 | 14.6 | 16.3 | +5.7 |
| 400-549..... | 7 | 18.4 | 21.4 | 23.9 | 24.0 | +5.6 |
| 550-699..... | 13 | 26.4 | 27.2 | 29.2 | 28.6 | +2.2 |
| 700 and over..... | 10 | 45.8 | 49.1 | 49.8 | 49.8 | +4.0 |
| Hogs | | | | | | |
| Owners and part owners | | | | | | |
| Less than 400..... | 7 | .13 | .38 | .20 | .16 | + .03 |
| 400-549..... | 11 | .36 | .56 | 1.00 | .73 | + .37 |
| 550-699..... | 11 | 1.26 | .95 | 1.50 | 1.40 | + .14 |
| 700 and over..... | 7 | 1.95 | 1.55 | 1.73 | 1.22 | - .73 |
| Tenants | | | | | | |
| Less than 400..... | 6 | .05 | .54 | .92 | 1.06 | +1.01 |
| 400-549..... | 7 | .21 | .35 | .20 | .40 | + .19 |
| 550-699..... | 13 | 1.74 | 1.71 | 1.63 | 1.26 | - .48 |
| 700 and over..... | 10 | 2.12 | 2.13 | 2.46 | 1.96 | - .16 |
| Poultry | | | | | | |
| Owners and part owners | | | | | | |
| Less than 400..... | 7 | 1.5 | 1.2 | 1.1 | 1.5 | 0 |
| 400-549..... | 11 | 1.1 | 1.2 | 1.4 | 1.2 | + .1 |
| 550-699..... | 11 | 1.4 | 1.2 | 1.3 | 1.6 | + .2 |
| 700 and over..... | 7 | 1.2 | 1.4 | 1.7 | 1.5 | + .3 |
| Tenants | | | | | | |
| Less than 400..... | 6 | 1.3 | 1.2 | 1.1 | 1.2 | - .1 |
| 400-549..... | 7 | 1.5 | 1.5 | 1.6 | 1.4 | - .1 |
| 550-699..... | 13 | 1.0 | .9 | 1.0 | .8 | - .2 |
| 700 and over..... | 10 | 1.4 | 1.5 | 1.3 | 1.3 | - .1 |

than at the beginning. There is no evidence to indicate that hogs were increasing at the expense of dairy cattle in this intensive dairy area in this period. The tendency for the operators of the larger farms to curtail the number of hogs at the end of 1942 probably reflected labor shortages. When labor is scarce, farmers concentrate on the things which they consider most important.

Likewise, numbers of poultry were increased but little. The owners in the three groups of larger farms increased their flocks, but all the tenant groups reduced theirs. It may be that with better incomes from milk there was less necessity for these tenants to keep poultry in order to realize a little extra income.

Beef cattle and sheep were of negligible importance on these farms.

These comparisons indicate that in expanding production in response to increased demands, farmers in this area put the major em-

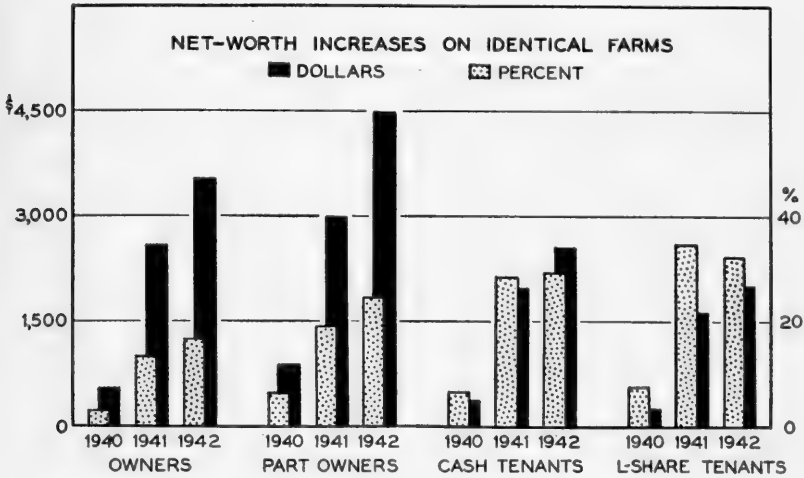


Fig. 8.—Increases in net worth of all operators on identical farms, 1940-1942. In 1940 the increases were small, but in 1941 and 1942 they were rather substantial. Altho dollar increases were larger for owners and part owners than for tenants, the percentage increases were larger for the two tenant groups.

phasis on their primary product—milk. Labor difficulties will doubtless accentuate this trend for the rest of the war period.

CASH INCOME AND EXPENSE PATTERNS

In the capital patterns discussed in the foregoing section, increases in assets included whatever increases resulted from the retention of farm-raised property as well as from cash transactions. The following analysis deals with cash income and expense only.

Patterns of Owners and Tenants Contrasted

The receipts and expense patterns of the various tenure groups are shown in Tables 17 to 19 for three years. Cash receipts include all cash taken in, including that for off-the-farm work and amounts borrowed during the year and not repaid. Expenses include expenditures for operating, for new farm capital, for cash living, and for interest payments. The net paid on old debts (those owed at the start of the year) is shown separately in these tables and is further pictured in Fig. 9. Gross borrowings and debt repayments are shown in Fig. 10.

TABLE 17.—INCOME, EXPENSES, BORROWINGS, AND DEBT REPAYMENTS OF OWNERS AND PART OWNERS, 1940, 1941, AND 1942

| | Owners | | | | Part owners | | | |
|--|---------|---------|---------|------------|-------------|---------|---------|------------|
| | 1940 | 1941 | 1942 | | 1940 | 1941 | 1942 | |
| Number of farms..... | 45 | 51 | 43 | | 14 | 16 | 18 | |
| Operator's cash income | | | | | | | | |
| Crop sales..... | \$ 107 | \$ 158 | \$ 231 | perct. 2.9 | \$ 133 | \$ 438 | \$ 484 | perct. 5.3 |
| Livestock sales..... | 788 | 1 018 | 1 470 | 18.5 | 1 070 | 1 200 | 2 150 | 23.6 |
| Dairy product sales..... | 2 224 | 3 003 | 3 671 | 54.4 | 2 063 | 3 470 | 4 030 | 44.0 |
| Other incomes..... | 577 | 955 | 731 | 17.3 | 1 381 | 990 | 2 263 | 24.7 |
| Current unpaid borrowings..... | 273 | 379 | 236 | 6.9 | 391 | 558 | 216 | 2.4 |
| Total cash income..... | \$3 969 | \$5 513 | \$6 339 | 100 | \$5 038 | \$6 656 | \$9 152 | 100 |
| Operator's cash expenses | | | | | | | | |
| Livestock purchases..... | \$ 254 | \$ 435 | \$ 534 | 7.3 | \$ 398 | \$ 552 | \$ 653 | 10.1 |
| Capital purchases..... | 637 | 807 | 547 | 18.2 | 726 | 1 049 | 1 424 | 22.1 |
| Current farm operation..... | 1 671 | 1 915 | 2 208 | 43.8 | 2 019 | 2 171 | 3 042 | 47.2 |
| Interest..... | 222 | 247 | 46 | 6.4 | 323 | 237 | 267 | 4.1 |
| Family living..... | 707 | 966 | 1 015 | 22.1 | 919 | 1 277 | 1 066 | 16.5 |
| Total cash expenses..... | \$3 491 | \$4 370 | \$4 511 | 100 | \$4 376 | \$5 431 | \$6 452 | 100 |
| Net cash income..... | 478 | 1 143 | 1 828 | ..... | 662 | 1 225 | 2 700 | ..... |
| Borrowings and debt repayments | | | | | | | | |
| Net paid on old debts ^a | \$ 435 | \$ 860 | \$1 013 | ..... | \$ 434 | \$ 932 | \$1 457 | ..... |
| Percent paid on old debts..... | 8.6 | 13.9 | 18.5 | ..... | 5.5 | 10.9 | 20.8 | ..... |
| Gross borrowings..... | \$ 312 | \$ 505 | \$ 266 | ..... | \$ 494 | \$ 795 | \$ 334 | ..... |
| Gross repayments..... | 474 | 986 | 1 043 | ..... | 537 | 1 169 | 1 575 | ..... |
| Current borrowings unpaid at end of year.. | 273 | 379 | 236 | ..... | 391 | 558 | 216 | ..... |

^aMiscellaneous farm income and off-farm income. ^bDebts outstanding at beginning of the year.

TABLE 18.—INCOME, EXPENSES, BORROWINGS, AND DEBT REPAYMENTS OF TENANTS, 1940, 1941, AND 1942

| | Cash tenants | | | | Livestock-share tenants | | | |
|---|--------------|----------|----------|--------|-------------------------|---------|---------|--------|
| | 1940 | 1941 | 1942 | | 1940 | 1941 | 1942 | |
| Number of farms..... | 40 | 50 | 37 | | 23 | 29 | 20 | |
| Operator's cash income | | | | | | | | |
| Crop sales..... | \$ 252 | \$ 237 | \$ 202 | perct. | \$ 31 | \$ 75 | \$ 145 | perct. |
| Livestock sales..... | 656 | 1,028 | 1,258 | 3.0 | 361 | 515 | 1,061 | 2.0 |
| Dairy product sales..... | 2,230 | 3,035 | 3,832 | 18.7 | 1,654 | 2,182 | 2,790 | 13.2 |
| Other income ^a | 613 | 768 | 575 | 56.9 | 317 | 575 | 483 | 58.6 |
| Current unpaid borrowings..... | 388 | 1,047 | 866 | 12.9 | 376 | 378 | 343 | 15.4 |
| Total cash income..... | \$4,139 | \$6,115 | \$6,733 | 100 | \$2,739 | \$3,725 | \$4,822 | 100 |
| Operator's cash expenses | | | | | | | | |
| Livestock purchases..... | \$ 429 | \$ 586 | \$ 831 | perct. | \$ 289 | \$ 217 | \$ 305 | perct. |
| Capital purchases..... | 603 | 1,368 | 973 | 15.8 | 403 | 642 | 689 | 10.7 |
| Current farm operations..... | 2,000 | 2,189 | 2,476 | 18.4 | 1,256 | 1,226 | 1,695 | 21.4 |
| Interest..... | 51 | 67 | 63 | 46.9 | 63 | 47 | 39 | 40.9 |
| Family living..... | 708 | 870 | 934 | 1.2 | 706 | 864 | 1,122 | 1.6 |
| Total cash expenses..... | \$3,791 | \$5,080 | \$5,277 | 17.7 | \$2,717 | \$2,996 | \$3,850 | 28.8 |
| Net cash income..... | 348 | 1,035 | 1,456 | 100 | 22 | 729 | 972 | 100 |
| Borrowings and debt repayments | | | | | | | | |
| Net paid on old debts..... | \$ 238 | \$ 556 | \$ 740 | perct. | \$ 264 | \$ 465 | \$ 586 | perct. |
| Percent paid on old debts..... | 22.2 | 42.1 | 59.7 | 21.9 | 496 | 477 | 489 | 38.9 |
| Gross borrowings..... | \$ 493 | \$ 1,286 | \$ 1,060 | 100 | 384 | 564 | 732 | 100 |
| Gross repayments..... | 343 | 795 | 934 | perct. | 376 | 378 | 343 | perct. |
| Current borrowings unpaid at end of year..... | 388 | 1,047 | 866 | 100 | 376 | 378 | 343 | 100 |

^aMiscellaneous farm income and off-farm income. ^bDebts outstanding at beginning of the year.

TABLE 19.—INCOME, EXPENSES, BORROWINGS, AND DEBT REPAYMENTS OF TENANTS OPERATING UNDER LIVESTOCK-SHARE LEASES, 1940, 1941, AND 1942

| | Livestock-share tenants owning half of cows | | | | Livestock-share tenants owning less than half of cows | | | |
|--|---|---------|---------|---------|---|---------|---------|------------|
| | 1940 | 1941 | 1942 | | 1940 | 1941 | 1942 | |
| Number of farms..... | 14 | 21 | 13 | | 9 | 8 | 7 | |
| Operator's cash income | | | | | | | | |
| Crop sales..... | \$ 48 | \$ 61 | \$ 125 | \$ 3 | \$ 258 | \$ 421 | \$ 182 | percl. 3.2 |
| Livestock sales..... | 427 | 551 | 1,009 | 258 | 1,900 | 2,638 | 1,156 | 20.4 |
| Dairy product sales..... | 1,498 | 2,008 | 2,459 | 1,900 | 3,404 | 4,066 | 3,404 | 60.2 |
| Other income ^a | 274 | 566 | 493 | 383 | 600 | 600 | 466 | |
| Current unpaid borrowings..... | 586 | 492 | 285 | 50 | 50 | 80 | 451 | 8.2 |
| Total cash income..... | \$2,833 | \$3,678 | \$4,371 | \$2,594 | \$3,850 | \$5,659 | \$5,659 | 100 |
| Operator's cash expenses | | | | | | | | |
| Livestock purchases..... | \$ 421 | \$ 244 | \$ 357 | \$ 83 | \$ 147 | \$ 209 | \$ 209 | 4.4 |
| Capital purchases..... | 455 | 561 | 458 | 324 | 854 | 1,119 | 1,119 | 23.5 |
| Current farm operations..... | 1,211 | 1,097 | 1,399 | 1,328 | 1,565 | 2,242 | 2,242 | 47.2 |
| Interest..... | 95 | 59 | 56 | 11 | 16 | 16 | 8 | |
| Family living..... | 665 | 839 | 1,094 | 769 | 930 | 1,173 | 1,173 | 24.7 |
| Total cash expenses..... | \$2,847 | \$2,800 | \$3,364 | \$2,515 | \$3,512 | \$4,751 | \$4,751 | 100 |
| Net cash income..... | -14 | 878 | 1,007 | 79 | 338 | 908 | 908 | |
| Borrowings and debt repayments | | | | | | | | |
| Net paid on old debts..... | \$ 342 | \$ 609 | \$ 747 | \$ 145 | \$ 88 | \$ 287 | \$ 287 | |
| Percent paid on old debts..... | 20.4 | 40.7 | 40.5 | 30.6 | 22.2 | 80.8 | 80.8 | |
| Gross borrowings..... | \$ 773 | \$ 627 | \$ 509 | \$ 63 | \$ 84 | \$ 451 | \$ 451 | |
| Gross repayments..... | 529 | 744 | 974 | 158 | 92 | 287 | 287 | |
| Current borrowings unpaid at end of year.... | 586 | 492 | 282 | 50 | 80 | 451 | 451 | |

^aMiscellaneous farm income and off-farm income. ^bDebts outstanding at beginning of the year.

Thruout the period and in each group the largest sources of cash income were the sales of dairy products and livestock, chiefly dairy cattle. For the various tenure groups these items represented from two-thirds to four-fifths of the cash income. Crop sales were not important. "Other income," which included AAA payments, poultry and egg sales, off-the-farm work, etc., was quite an important item, particularly on the owner and part-owner farms, averaging in the three years 14 percent of the total cash income for the owner group, 22 percent for the part-owner group, 12 percent for the cash tenants, and 12 percent for the livestock-share tenants.

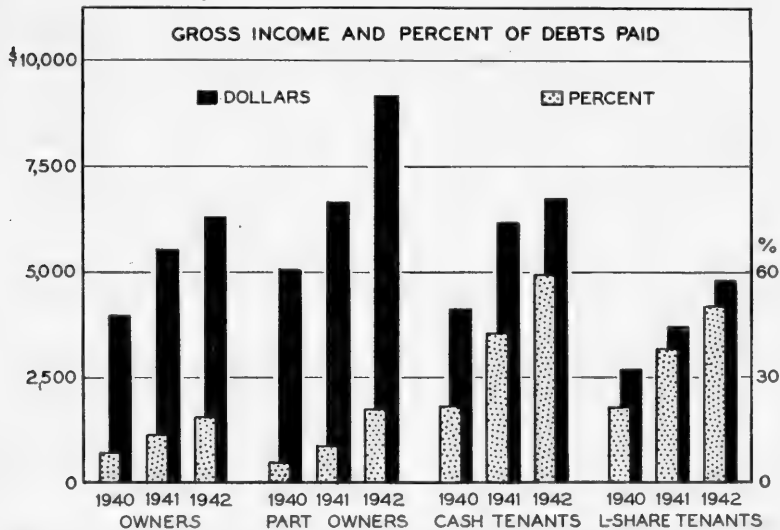


Fig. 9.—Total income and percentage of old debts repaid in 1940, 1941, and 1942. In each group—owners, part owners, cash tenants and livestock-share tenants—both total income and percentage of old debts repaid increased each year.

From the standpoint of financing the business, the percentage of cash resulting from net borrowing is important. It indicates the extent to which operators depend on current borrowings for working capital. (The unpaid balance of such borrowings does not indicate fully the importance of borrowing in providing operating capital because it does not include repayments made during the year.) For owners the net-borrowing figure was low, ranging from 3.7 to 6.9 percent of current receipts in the various years; for part owners also it was low, ranging from 2.4 to 8.4 percent. For cash tenants it ranged from 9.4 to 17.1

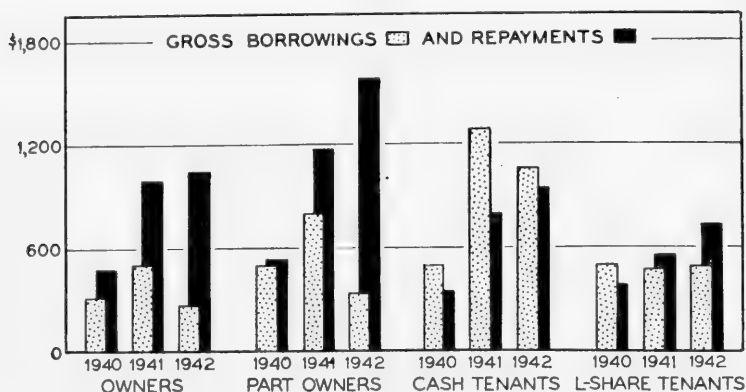


Fig. 10.—Gross borrowings and debt repayments in 1940, 1941, and 1942. All groups increased their debt repayments each year. Except for livestock-share tenants, whose borrowings were quite uniform from year to year, borrowings in 1941 were larger than in 1940 and smaller than in 1942. Owners reduced their debts during these three years. Cash tenants increased theirs in 1940 and 1941 but reduced them slightly in 1942.

percent; and for livestock-share tenants, from 7.1 to 13.7 percent. These borrowings declined in importance during the period.

Current operating cost was the most important item of expense, making up from two-fifths to one-half of the total in the different groups. Next in importance were family living expenses, which in the several groups varied from one-sixth to one-third of the total cash expenses. Next in amount were capital purchases other than livestock, purchases which made up one-eighth to one-fourth of the total cash expense.

The amounts spent for livestock varied from about 3 percent of the 1940 cash expense of livestock-share tenants owning less than 50 percent of the cows to 16 percent of the 1942 cash expense of cash tenants. Payment of interest was the least important item, varying from 4 to 7 percent for owners and part owners, and from .2 to 3.3 percent among the various groups of tenants.

Changes in cash position. Receipts increased more than expenses in this period. The 1942 cash receipts and expenses exceeded the 1940 receipts and expenses as shown at the top of page 553.

How were these increased cash balances used? In these calculations any income used in building up physical inventories was included in expenses. The three obvious uses for the remainder were: (1) the payment of old debts, (2) the building up of cash resources, and

| | <i>Cash receipts, 1942 over 1940</i> | <i>Cash expense, 1942 over 1940</i> | <i>Increase in net cash receipts, 1942 over 1940</i> |
|------------------------------------|--|---|--|
| Owners..... | \$2 370 | \$1 020 | \$1 350 |
| Part owners..... | 4 114 | 2 076 | 2 038 |
| Cash tenants..... | 2 594 | 1 486 | 1 108 |
| Livestock-share tenants | | | |
| Owning half of cows..... | 1 538 | 517 | 1 021 |
| Owning less than half of cows..... | 3 065 | 2 236 | 829 |

(3) the making of outside investments. It was difficult to obtain data from farmers as to changes in their cash positions. Therefore, such changes were not included in the data collected. Likewise, in 1942 it was difficult to obtain data regarding purchases of Government bonds on a sufficiently uniform basis to warrant inclusion of such purchases in the averages.

These farmers, however, appear to have considerably increased their holdings of cash and of bonds, especially in 1942. After net payments on debts owed at the beginning of the year were deducted, the following cash balances were not accounted for. Part of these balances may reflect errors in the basic data, but it is believed that they chiefly represent changes in cash position:

| | 1940 | 1941 | 1942 |
|------------------------------------|-------|-------|--------|
| Owners..... | \$ 43 | \$283 | \$ 815 |
| Part owners..... | 228 | 293 | 1 243 |
| Cash tenants..... | 110 | 479 | 716 |
| Livestock-share tenants..... | -242 | 264 | 386 |
| Owning half of cows..... | -356 | 269 | 260 |
| Owning less than half of cows..... | -66 | 250 | 621 |

These data suggest that cash balances increased but little in 1940, increased moderately in 1941, and increased substantially in all groups in 1942. By the end of 1942 holdings of cash or Government bonds were beginning to be rapidly built up. Apparently these farmers were beginning to accumulate cash reserves for investment or for future periods when incomes might not be very favorable.

Operators With Different Debt Ratios

The income and expense patterns did not vary significantly for the groups with different debt-to-property ratios (Tables 20 and 21). In all but two of these eight groups, 1942 increases in cash or in bond purchases were substantial.

Among the owners, the differences between cash receipts and expenses tended to be positively correlated with debt ratios (Table 22). As has been pointed out above, the larger farms had the higher debt

TABLE 20.—INCOME, EXPENSES, BORROWINGS, AND DEBT REPAYMENTS OF OWNERS AND PART OWNERS WITH DIFFERENT DEBT RATIOS, 1942

| Debt ratio | 0 | | 1-19% | | 20-39% | | 40% and over | |
|--|---------------|------|---------------|------|---------------|------|---------------|------|
| Number of farms | 9 | | 15 | | 25 | | 12 | |
| Operator's cash income | <i>perct.</i> | | <i>perct.</i> | | <i>perct.</i> | | <i>perct.</i> | |
| Crop sales | \$ 478 | 6.3 | \$ 200 | 3.7 | \$ 196 | 2.8 | \$ 539 | 5.8 |
| Livestock sales | 2 357 | 31.2 | 746 | 13.9 | 1 968 | 27.8 | 1 706 | 18.3 |
| Dairy product sales | 4 149 | 54.9 | 3 328 | 62.1 | 3 848 | 54.3 | 3 910 | 42.0 |
| Other income | 579 | 7.6 | 1 019 | 19.0 | 732 | 10.3 | 2 777 | 29.8 |
| Current unpaid borrowings | 0 | ... | 68 | 1.3 | 338 | 4.8 | 379 | 4.1 |
| Total cash income | \$7 563 | 100 | \$5 361 | 100 | \$7 082 | 100 | \$9 311 | 100 |
| Operator's cash expenses | | | | | | | | |
| Livestock purchases | \$ 314 | 6.5 | \$ 462 | 10.4 | \$ 684 | 13.8 | \$ 652 | 10.4 |
| Capital purchases | 932 | 19.2 | 858 | 19.2 | 509 | 10.2 | 1 264 | 20.2 |
| Current farm operations | 2 614 | 53.8 | 2 077 | 46.6 | 2 515 | 50.5 | 2 681 | 42.8 |
| Interest | 0 | ... | 92 | 2.1 | 271 | 5.5 | 462 | 7.4 |
| Family living | 996 | 20.5 | 968 | 21.7 | 997 | 20.0 | 1 200 | 19.2 |
| Total cash expenses | \$4 856 | 100 | \$4 457 | 100 | \$4 976 | 100 | \$6 259 | 100 |
| Net cash income | 2 707 | ... | 904 | ... | 2 106 | ... | 3 052 | ... |
| Borrowings and debt repayments | | | | | | | | |
| Net paid on old debts | \$ 0 | ... | \$1 096 | ... | \$1 363 | ... | \$1 606 | ... |
| Cash not accounted for | 2 707 | ... | -192 | ... | 743 | ... | 1 446 | ... |
| Percent paid on old debts | 0 | ... | 46.7 | ... | 19.8 | ... | 12.5 | ... |
| Gross borrowings | 0 | ... | 68 | ... | 407 | ... | 520 | ... |
| Gross repayments | 0 | ... | 1 096 | ... | 1 432 | ... | 1 747 | ... |
| Current borrowings unpaid at end of year | 0 | ... | 68 | ... | 338 | ... | 379 | ... |

ratios. Net cash incomes and amounts of cash unaccounted for increased in all groups from year to year. Among tenants there was no definite tendency for size of cash balance to be correlated with debt ratio, but these balances tended to increase from year to year (Table 23).

TABLE 21.—INCOME, EXPENSES, BORROWINGS, AND DEBT REPAYMENTS OF TENANTS WITH DIFFERENT DEBT RATIOS, 1942

| Debt ratio | 0 | | 1-19% | | 20-39% | | 40% and over | |
|--|---------------|------|---------------|------|---------------|------|---------------|------|
| Number of farms | 12 | | 23 | | 13 | | 9 | |
| Operator's cash income | <i>perct.</i> | | <i>perct.</i> | | <i>perct.</i> | | <i>perct.</i> | |
| Crop sales | \$ 185 | 3.0 | \$ 242 | 4.1 | \$ 179 | 2.5 | \$ 30 | .6 |
| Livestock sales | 1 173 | 19.2 | 1 155 | 19.5 | 1 417 | 20.0 | 964 | 19.7 |
| Dairy product sales | 3 951 | 64.7 | 3 215 | 54.2 | 4 127 | 58.4 | 2 506 | 51.3 |
| Other income | 593 | 9.7 | 484 | 8.2 | 707 | 10.0 | 389 | 8.0 |
| Current unpaid borrowings | 208 | 3.4 | 830 | 14.0 | 641 | 9.1 | 997 | 20.4 |
| Total cash income | \$6 110 | 100 | \$5 926 | 100 | \$7 071 | 100 | \$4 886 | 100 |
| Operator's cash expenses | | | | | | | | |
| Livestock purchases | \$ 359 | 7.3 | \$ 671 | 13.9 | \$ 723 | 14.3 | \$ 858 | 21.3 |
| Capital purchases | 931 | 18.8 | 1 103 | 22.9 | 723 | 14.3 | 425 | 10.6 |
| Current farm operations | 2 586 | 52.3 | 2 140 | 44.3 | 2 379 | 47.2 | 1 585 | 39.4 |
| Interest | 0 | ... | 30 | .6 | 86 | 1.7 | 146 | 3.6 |
| Family living | 1 066 | 21.6 | 885 | 18.3 | 1 136 | 22.5 | 1 011 | 25.1 |
| Total cash expenses | \$4 942 | 100 | \$4 829 | 100 | \$5 047 | 100 | \$4 025 | 100 |
| Net cash income | 1 168 | ... | 1 097 | ... | 2 024 | ... | 861 | ... |
| Borrowings and debt repayments | | | | | | | | |
| Net paid on old debts | \$ 0 | ... | \$ 540 | ... | \$1 188 | ... | \$1 236 | ... |
| Cash not accounted for | 1 168 | ... | 557 | ... | 836 | ... | -475 | ... |
| Percent paid on old debts | 0 | ... | 90.0 | ... | 53.9 | ... | 41.6 | ... |
| Gross borrowings | \$ 208 | ... | \$ 944 | ... | \$ 993 | ... | \$1 334 | ... |
| Gross repayments | 0 | ... | 654 | ... | 1 540 | ... | 1 573 | ... |
| Current borrowings unpaid at end of year | 208 | ... | 830 | ... | 641 | ... | 997 | ... |

TABLE 22.—CASH INCOME AND EXPENSES OF OWNERS AND PART OWNERS HAVING DIFFERENT DEBT RATIOS, 1940, 1941, AND 1942

| Debt ratio..... | 0 | 1-19% | 20-39% | 40% and over |
|-----------------------------|---------|---------|---------|--------------|
| 1940 | | | | |
| Number of farms..... | 12 | 11 | 24 | 12 |
| Total cash income..... | \$3 726 | \$3 668 | \$4 380 | \$4 915 |
| Total cash expenses..... | 3 411 | 3 390 | 3 637 | 4 407 |
| Net cash income..... | 315 | 278 | 743 | 508 |
| Net paid on old debts..... | 0 | 124 | 788 | 449 |
| Cash not accounted for..... | 315 | 154 | -45 | 59 |
| 1941 | | | | |
| Number of farms..... | 12 | 9 | 27 | 19 |
| Total cash income..... | \$4 349 | \$4 270 | \$5 810 | \$7 377 |
| Total cash expenses..... | 3 694 | 3 898 | 4 629 | 5 547 |
| Net cash income..... | 655 | 372 | 1 181 | 1 830 |
| Net paid on old debts..... | 0 | 244 | 979 | 1 585 |
| Cash not accounted for..... | 655 | 128 | 202 | 245 |
| 1942 | | | | |
| Number of farms..... | 9 | 15 | 25 | 12 |
| Total cash income..... | \$7 563 | \$5 361 | \$7 082 | \$9 311 |
| Total cash expenses..... | 4 856 | 4 457 | 4 976 | 6 259 |
| Net cash income..... | 2 707 | 904 | 2 106 | 3 052 |
| Net paid on old debts..... | 0 | 1 096 | 1 363 | 1 606 |
| Cash not accounted for..... | 2 707 | -192 | 743 | 1 446 |

TABLE 23.—CASH INCOME AND EXPENSES OF TENANT FARMERS HAVING DIFFERENT DEBT RATIOS, 1940, 1941, AND 1942

| Debt ratio..... | 0 | 1-19% | 20-39% | 40% and over |
|-----------------------------|---------|---------|---------|--------------|
| 1940 | | | | |
| Number of farms..... | 15 | 16 | 20 | 12 |
| Total cash income..... | \$4 418 | \$3 599 | \$3 242 | \$3 324 |
| Total cash expenses..... | 4 560 | 3 429 | 2 663 | 3 132 |
| Net cash income..... | -142 | 170 | 579 | 192 |
| Net paid on old debts..... | 33 | 227 | 334 | 398 |
| Cash not accounted for..... | -175 | -57 | 245 | -206 |
| 1941 | | | | |
| Number of farms..... | 19 | 21 | 22 | 17 |
| Total cash income..... | \$5 376 | \$5 402 | \$4 995 | \$5 188 |
| Total cash expenses..... | 5 161 | 4 725 | 3 628 | 3 750 |
| Net cash income..... | 215 | 677 | 1 367 | 1 438 |
| Net paid on old debts..... | 0 | 403 | 710 | 1 011 |
| Cash not accounted for..... | 215 | 274 | 657 | 427 |
| 1942 | | | | |
| Number of farms..... | 12 | 23 | 13 | 9 |
| Total cash income..... | \$6 110 | \$5 926 | \$7 071 | \$4 886 |
| Total cash expenses..... | 4 942 | 4 829 | 5 047 | 4 025 |
| Net cash income..... | 1 168 | 1 097 | 2 024 | 861 |
| Net paid on old debts..... | 0 | 540 | 1 188 | 1 236 |
| Cash not accounted for..... | 1 168 | 557 | 836 | -375 |

Operators With Businesses of Different Size

How both receipts and expenses increased with an increase in the size of farm business, as measured by productive man work units, is shown in Tables 24 and 25.

The difference between receipts and expenditures, it will be noted, increased more from year to year for the larger farms than for the smaller farms. For the owners of the smallest farms this difference

TABLE 24.—CASH INCOME AND EXPENSES OF OWNERS AND PART OWNERS OPERATING BUSINESSES OF DIFFERENT SIZE, 1940, 1941, AND 1942

| Productive man work units..... | Less than 400 | 400-549 | 550-699 | 700 and over |
|--------------------------------|---------------|---------|---------|--------------|
| 1940 | | | | |
| Number of farms..... | 17 | 15 | 18 | 9 |
| Total cash income..... | \$2 623 | \$4 415 | \$4 694 | \$5 981 |
| Total cash expenses..... | 2 273 | 3 645 | 4 387 | 5 122 |
| Net cash income..... | 350 | 770 | 307 | 859 |
| Net paid on old debts..... | 226 | 628 | 352 | 677 |
| Cash not accounted for..... | 124 | 142 | -45 | 182 |
| 1941 | | | | |
| Number of farms..... | 16 | 16 | 20 | 15 |
| Total cash income..... | \$3 557 | \$5 197 | \$6 254 | \$8 166 |
| Total cash expenses..... | 2 879 | 3 963 | 5 119 | 6 529 |
| Net cash income..... | 678 | 1 234 | 1 135 | 1 637 |
| Net paid on old debts..... | 782 | 1 009 | 672 | 1 110 |
| Cash not accounted for..... | -104 | 225 | 463 | 527 |
| 1942 | | | | |
| Number of farms..... | 11 | 13 | 20 | 17 |
| Total cash income..... | \$3 029 | \$6 228 | \$7 314 | \$10 393 |
| Total cash expenses..... | 2 601 | 4 798 | 5 311 | 6 638 |
| Net cash income..... | 429 | 1 430 | 2 003 | 3 755 |
| Net paid on old debts..... | 433 | 937 | 1 488 | 1 358 |
| Cash not accounted for..... | -4 | 493 | 515 | 2 397 |

averaged \$350 in 1940 and \$429 in 1942; but for the owners of the largest farms it averaged \$859 in 1940 and \$3,755 in 1942. For the tenants on the smallest farms it averaged—\$32 in 1940 and \$435 in 1942, and for the tenants on the largest farms, \$26 in 1940 and \$1,821 in 1942.

Thus the operators of the larger farms increased their ability to pay debts or to accumulate cash much more rapidly than the operators of the smaller farms.

TABLE 25.—CASH INCOME AND EXPENSES OF TENANTS OPERATING BUSINESSES OF DIFFERENT SIZE, 1940, 1941, AND 1942

| Productive man work units..... | Less than 400 | 400-549 | 550-699 | 700 and over |
|--------------------------------|---------------|---------|---------|--------------|
| 1940 | | | | |
| Number of farms..... | 10 | 17 | 17 | 19 |
| Total cash income..... | \$2 088 | \$3 027 | \$4 056 | \$4 592 |
| Total cash expenses..... | 2 120 | 2 753 | 3 491 | 4 566 |
| Net cash income..... | -32 | 274 | 565 | 26 |
| Net paid on old debts..... | 16 | 170 | 361 | 337 |
| Cash not accounted for..... | -48 | 104 | 204 | -311 |
| 1941 | | | | |
| Number of farms..... | 13 | 24 | 21 | 21 |
| Total cash income..... | \$2 744 | \$4 635 | \$5 844 | \$6 862 |
| Total cash expenses..... | 2 014 | 3 726 | 4 830 | 5 895 |
| Net cash income..... | 730 | 909 | 1 014 | 967 |
| Net paid on old debts..... | 148 | 536 | 662 | 600 |
| Cash not accounted for..... | 582 | 373 | 352 | 367 |
| 1942 | | | | |
| Number of farms..... | 7 | 20 | 16 | 14 |
| Total cash income..... | \$3 041 | \$5 301 | \$6 934 | \$7 661 |
| Total cash expenses..... | 2 606 | 4 510 | 5 126 | 5 840 |
| Net cash income..... | 435 | 791 | 1 808 | 1 821 |
| Net paid on old debts..... | 310 | 583 | 746 | 943 |
| Cash not accounted for..... | 125 | 208 | 1 062 | 878 |

Operators With Continuous Records

The income and expense patterns of owners and tenants from whom data were obtained for all three years of the study were very similar to those of all the farmers in each of these groups, as can be seen by comparing Tables 26 and 27 with Tables 17 and 18.

TABLE 26.—INCOME, EXPENSES, BORROWINGS, AND DEBT REPAYMENTS OF IDENTICAL OWNERS AND PART OWNERS, 1940, 1941, AND 1942

| | Owners | | | Part owners | | |
|---------------------------------------|---------|---------|---------|-------------|---------|---------|
| | 1940 | 1941 | 1942 | 1940 | 1941 | 1942 |
| Number of farms..... | 25 | 25 | 25 | 11 | 11 | 11 |
| Operator's cash income | | | | | | |
| Crop sales..... | \$ 125 | \$ 141 | \$ 205 | \$ 152 | \$ 180 | \$ 97 |
| Livestock sales..... | 774 | 978 | 1 450 | 777 | 1 169 | 1 919 |
| Dairy product sales..... | 2 238 | 3 058 | 4 191 | 2 431 | 3 556 | 4 190 |
| Other income..... | 507 | 922 | 617 | 984 | 1 135 | 2 954 |
| Current unpaid borrowings..... | 410 | 218 | 172 | 334 | 398 | 81 |
| Total cash income..... | \$4 054 | \$5 317 | \$6 635 | \$4 678 | \$6 438 | \$9 241 |
| Operator's cash expenses | | | | | | |
| Livestock purchases..... | \$ 286 | \$ 475 | \$ 584 | \$ 314 | \$ 371 | \$ 649 |
| Capital purchases..... | 596 | 743 | 451 | 769 | 1 094 | 1 689 |
| Current farm operation..... | 1 721 | 1 816 | 2 394 | 1 960 | 2 009 | 2 665 |
| Interest..... | 201 | 185 | 174 | 350 | 369 | 305 |
| Family living..... | 766 | 948 | 954 | 867 | 1 259 | 1 016 |
| Total cash expenses..... | \$3 570 | \$4 167 | \$4 552 | \$4 260 | \$5 102 | \$6 324 |
| Net cash income..... | 484 | 1 150 | 2 078 | 418 | 1 336 | 2 917 |
| Borrowings and debt repayments | | | | | | |
| Net paid on old debts..... | \$ 604 | \$ 701 | \$ 848 | \$ 441 | \$ 945 | \$1 678 |
| Cash not accounted for..... | -120 | 449 | 1 230 | -23 | 391 | 1 239 |
| Percent paid on old debts..... | 11.6 | 13.9 | 18.6 | 5.0 | 10.9 | 20.6 |
| Gross borrowings..... | \$ 460 | \$ 329 | \$ 179 | \$ 392 | \$ 660 | \$ 157 |
| Gross repayments..... | 654 | 812 | 855 | 499 | 1 207 | 1 754 |

TABLE 27.—INCOME, EXPENSES, BORROWINGS, AND DEBT REPAYMENTS OF IDENTICAL TENANTS, 1940, 1941, AND 1942

| | Cash tenants | | | Livestock-share tenants | | |
|---------------------------------------|--------------|---------|---------|-------------------------|---------|---------|
| | 1940 | 1941 | 1942 | 1940 | 1941 | 1942 |
| Number of farms..... | 23 | 23 | 23 | 13 | 13 | 13 |
| Operator's cash income | | | | | | |
| Crop sales..... | \$ 222 | \$ 158 | \$ 173 | \$ 42 | \$ 56 | \$ 116 |
| Livestock sales..... | 690 | 1 007 | 1 364 | 377 | 494 | 1 057 |
| Dairy product sales..... | 2 167 | 3 035 | 3 865 | 1 738 | 2 336 | 2 962 |
| Other income..... | 474 | 787 | 653 | 384 | 627 | 539 |
| Current unpaid borrowings..... | 320 | 521 | 685 | 338 | 305 | 399 |
| Total cash income..... | \$3 873 | \$5 508 | \$6 740 | \$2 879 | \$3 818 | \$5 073 |
| Operator's cash expenses | | | | | | |
| Livestock purchases..... | \$ 510 | \$ 669 | \$ 537 | \$ 280 | \$ 76 | \$ 184 |
| Capital purchases..... | 465 | 1 004 | 1 175 | 440 | 728 | 881 |
| Current farm operation..... | 2 007 | 2 187 | 2 685 | 1 270 | 1 435 | 1 762 |
| Interest..... | 39 | 51 | 42 | 56 | 39 | 33 |
| Family living..... | 751 | 869 | 921 | 813 | 920 | 1 185 |
| Total cash expenses..... | \$3 772 | \$4 780 | \$5 360 | \$2 859 | \$3 198 | \$4 045 |
| Net cash income..... | 101 | 728 | 1 380 | 20 | 620 | 1 028 |
| Borrowings and debt repayments | | | | | | |
| Net paid on old debts..... | \$ 142 | \$ 447 | \$ 721 | \$ 184 | \$ 412 | \$ 511 |
| Cash not accounted for..... | -41 | 281 | 659 | -164 | 208 | 517 |
| Percent paid on old debts..... | 16.9 | 43.8 | 65.9 | 17.2 | 33.7 | 45.8 |
| Gross borrowings..... | \$ 420 | \$ 756 | \$ 704 | \$ 469 | \$ 344 | \$ 537 |
| Gross repayments..... | 242 | 682 | 740 | 315 | 451 | 649 |

Expenditures for Various Purposes

Total expenditures increased progressively during the three-year period in both the owner and the tenant groups (Tables 28 and 29). The amounts which owners and part owners devoted to payments on the principal of their debts increased more in proportion to total expenditures than did the amounts spent for any other single purpose. The expenditures for dairy cattle and for land and improvements became relatively larger, while those for automobiles, machinery and equipment, and other operating expenses became relatively smaller.

In 1941, 9.4 percent of the total expenditures of tenant operators went for the purchase of land. In 1942, 6.4 percent was so used. A larger proportion went for the purchase of dairy cattle in 1942 than in either of the other years, while the proportions going for machinery

TABLE 28.—EXPENDITURES BY OWNERS AND PART OWNERS FOR VARIOUS PURPOSES, 1940, 1941, AND 1942

| Items | 1940 | | 1941 | | 1942 | |
|-------------------------------|---------|---------------|---------|---------------|---------|---------------|
| Number of farms..... | 59 | | 67 | | 61 | |
| Purchases of— | | <i>perci.</i> | | <i>perci.</i> | | <i>perci.</i> |
| Land..... | \$ 0 | 0 | \$ 0 | 0 | \$ 164 | 2.6 |
| Improvements..... | 64 | 1.6 | 149 | 2.7 | 250 | 4.0 |
| Dairy cattle..... | 155 | 3.8 | 330 | 6.0 | 462 | 7.4 |
| Other livestock..... | 133 | 3.2 | 133 | 2.4 | 107 | 1.7 |
| Machinery and equipment..... | 378 | 9.1 | 487 | 8.8 | 374 | 6.0 |
| Automobile..... | 215 | 5.2 | 229 | 4.2 | 26 | .4 |
| Feed..... | 299 | 7.2 | 361 | 6.6 | 479 | 7.7 |
| Fertilizer..... | 63 | 1.5 | 58 | 1.1 | 132 | 2.1 |
| Other operating expenses..... | \$1 390 | 33.6 | \$1 558 | 28.3 | \$1 834 | 29.5 |
| Interest payments..... | 246 | 6.0 | 279 | 5.1 | 225 | 3.6 |
| Family living..... | 757 | 18.3 | 1 040 | 18.9 | 1 030 | 16.6 |
| Paid on debt principal..... | 435 | 10.5 | 877 | 15.9 | 1 144 | 18.4 |
| Total..... | \$4 135 | 100.0 | \$5 501 | 100.0 | \$6 227 | 100.0 |

TABLE 29.—EXPENDITURES BY TENANTS FOR VARIOUS PURPOSES, 1940, 1941, AND 1942

| Items | 1940 | | 1941 | | 1942 | |
|-------------------------------|---------|---------------|---------|---------------|---------|---------------|
| Number of farms..... | 63 | | 79 | | 57 | |
| Purchases of— | | <i>perci.</i> | | <i>perci.</i> | | <i>perci.</i> |
| Land..... | \$ 0 | 0 | \$ 454 | 9.4 | \$ 351 | 6.4 |
| Improvements..... | 0 | 0 | 15 | .3 | 0 | 0 |
| Dairy cattle..... | 269 | 7.4 | 344 | 7.1 | 549 | 10.0 |
| Other livestock..... | 109 | 3.0 | 107 | 2.2 | 98 | 1.8 |
| Machinery and equipment..... | 421 | 11.5 | 413 | 8.5 | 419 | 7.7 |
| Automobile..... | 109 | 3.0 | 220 | 4.6 | 103 | 1.9 |
| Feed..... | 263 | 7.2 | 313 | 6.5 | 423 | 7.7 |
| Fertilizer..... | 30 | .8 | 34 | .7 | 52 | 1.0 |
| Other operating expenses..... | \$1 435 | 39.4 | \$1 488 | 30.8 | \$1 725 | 31.6 |
| Interest payments..... | 55 | 1.5 | 60 | 1.2 | 55 | 1.0 |
| Family living..... | 707 | 19.4 | 868 | 17.9 | 1 000 | 18.3 |
| Paid on debt principal..... | 248 | 6.8 | 523 | 10.8 | 684 | 12.6 |
| Total..... | \$3 646 | 100.0 | \$4 839 | 100.0 | \$5 459 | 100.0 |

and equipment and for other operating expenses were considerably lower in 1941 and 1942 than in 1940. The proportion of the total expenditures applied to the payment of the principal of debts averaged lowest in 1940 and highest in 1942.

POSSIBILITIES OF BUYING FARMS FROM EARNINGS

The eventual goal of most farm operators is to own and operate a farm relatively free of debt. The following analysis will show the approximate amounts of earnings available to these farm operators for purchasing land and improvements.

In arriving at the earnings available for purchasing farms, all expenses—including interest paid on debts, the actual cash cost of family living, farm operating costs, and the purchase of items of working capital—were subtracted from the total cash income. The difference was considered to be available to the operator for the purchase of land and improvements. It was assumed that the expenditures for working capital during 1940, 1941, and 1942 were adequate not only to maintain this capital but to allow for such expansion as would be expected in a progressive business. In the main the increases in the prices of the items included in working capital caused the increased inventory values. Borrowings and repayments of debts were excluded from this calculation.

Earnings Available to Owners and Part Owners

For farms of different size, the investments of owners and part owners in farm working capital, the increases in their net worth, and the amounts of funds available for purchases of land and improvements in 1940, 1941, and 1942 are shown in Table 30.

The total investment and the investment in land and improvements varied somewhat in the different years because of variation in the sample of farms studied rather than because of changes in valuations. These differences, however, were not significant.

Earnings available to owners and part owners for land purchases increased with the size of the farm. For the three-year period the averages for farms of different size, from small to large, were: \$189, \$731, \$877, and \$1,824. At these rates it would take the operators in these different groups roughly 52.7, 19.3, 21.0, and 10.8 years, respectively, to accumulate earnings equal to the value of farms of the

TABLE 30.—EQUITY OF OWNER AND PART-OWNER OPERATORS IN TOTAL FARM INVESTMENT AND IN LAND AND IMPROVEMENTS, INCREASE IN NET WORTH, AND CASH AVAILABLE FOR SAVINGS OR EXPANSION, 1940, 1941, AND 1942

| Year | Equity in total investment | Equity in land and improvements | Increase in net worth | Cash available for savings or expansion |
|---|----------------------------|---------------------------------|-----------------------|---|
| Less than 400 productive man work units | | | | |
| 1940..... | \$16 215 | \$10 482 | \$ 462 | \$ 148 |
| 1941..... | 15 237 | 9 943 | 442 | 157 |
| 1942..... | 15 329 | 9 470 | 868 | 261 |
| Average..... | 15 594 | 9 965 | 591 | 189 |
| 400 to 549 productive man work units | | | | |
| 1940..... | \$21 397 | \$14 812 | \$ 684 | \$ 44 |
| 1941..... | 21 702 | 13 698 | 2 333 | 816 |
| 1942..... | 24 170 | 13 848 | 2 919 | 1 333 |
| Average..... | 22 423 | 14 119 | 1 979 | 731 |
| 550 to 699 productive man work units | | | | |
| 1940..... | \$28 238 | \$19 316 | \$ 769 | \$ 152 |
| 1941..... | 30 537 | 19 259 | 2 558 | 872 |
| 1942..... | 27 678 | 16 767 | 3 136 | 1 607 |
| Average..... | 28 818 | 18 447 | 2 154 | 877 |
| 700 productive man work units and over | | | | |
| 1940..... | \$30 937 | \$20 638 | \$1 745 | \$ 787 |
| 1941..... | 33 662 | 20 310 | 4 116 | 1 107 |
| 1942..... | 32 668 | 18 128 | 5 681 | 3 579 |
| Average..... | 32 422 | 19 692 | 3 847 | 1 824 |

size they were operating (number of years determined by dividing value of land and improvements by average earnings). Expressed another way, the owners and part owners of the largest farms could accumulate in cash the value of the farms they operated in one-fifth the time it would take the owners and part owners of the smallest farms to accumulate the value of their farms.

Thus, at least in periods of rising prices, it is much easier for an operator of a large farm to buy a large farm from his farm earnings than it is for the operator of a small farm to buy a small farm from his earnings, and the same can be said for tenants (page 561).

The above figures are of course averages—some men would do better, some not do so well. Also it must be remembered that they represent the periods required by men *in the capital position of the men studied*. The owners and part owners operating the largest farms had equities which averaged approximately \$32,000. At 4-percent interest this amount of money would earn \$1,280 annually, which is about two-thirds of the average amount of cash available to these operators yearly for savings and expansion. If this money were invested where it would draw interest, the interest earned would help to shorten the

time required to accumulate enough capital for the purchase of an equivalent farm; but if the savings had to be used to make down payments and the rest of the purchase money had to be borrowed, the periods would be lengthened because of the necessity of using part of the surplus cash for interest. Usually land is purchased by men who have some initial capital.

Earnings Available to Tenants

The funds which tenants had available for the purchase of land and improvements (Table 31)—calculated as explained above—increased with the size of the farm, averaging during the three-year period \$85, \$260, \$343, and \$660 respectively for the four groups. For these tenants to acquire enough capital to buy farms of the same size and with the same land and improvements valuation as those operated by owners and part owners would take 117.2, 54.3, 53.8, and 29.8 years respectively.

Obviously it would be difficult for most of these tenants, after providing for operating and living costs and needed working capital, to save out of earnings such as were realized in this period the neces-

TABLE 31.—TENANTS' EQUITY IN TOTAL FARM INVESTMENT AND IN LAND AND IMPROVEMENTS, INCREASE IN NET WORTH, AND CASH AVAILABLE FOR SAVINGS OR EXPANSION, 1940, 1941, AND 1942

| Year | Equity in total investment | Increase in net worth | Cash available for savings or expansion |
|---|----------------------------|-----------------------|---|
| Less than 400 productive man work units | | | |
| 1940..... | \$2 744 | \$ 124 | \$-411 |
| 1941..... | 3 222 | 869 | 341 |
| 1942..... | 4 491 | 1 080 | 325 |
| Average..... | 3 486 | 691 | 85 |
| 400 to 549 productive man work units | | | |
| 1940..... | \$5 348 | \$ 570 | \$ 25 |
| 1941..... | 6 425 | 1 382 | 328 |
| 1942..... | 7 250 | 1 756 | 427 |
| Average..... | 6 341 | 1 236 | 260 |
| 550 to 699 productive man work units | | | |
| 1940..... | \$7 564 | \$ 642 | \$ 60 |
| 1941..... | 9 076 | 1 825 | -186 |
| 1942..... | 9 884 | 2 377 | 1 155 |
| Average..... | 8 841 | 1 615 | 343 |
| 700 productive man work units and over | | | |
| 1940..... | \$7 872 | \$ 851 | \$-372 |
| 1941..... | 9 946 | 2 375 | 559 |
| 1942..... | 10 761 | 3 075 | 1 794 |
| Average..... | 9 526 | 2 100 | 660 |

sary money with which to buy the farms they were operating. The tenants operating the largest farms would apparently have the best chances. They could accumulate in cash the value of the farms they were operating in one-fourth the time it would take the tenants of the smallest farms to accumulate the value of their farms.

SOME CHARACTERISTICS OF THESE FARMS AND THEIR OPERATORS

Owner and Tenant Farms and Operators

As measured by productive man work units, acres, or cows (Table 32), the tenants operated larger farms than the owners and part

TABLE 32.—VARIOUS ITEMS CONCERNING FARMS, FARM FAMILIES, AND FARM BUSINESSES OF OWNERS, PART OWNERS, AND TENANTS, 1940, 1941, AND 1942

| | Owners and part owners | | | Tenants | | |
|--|------------------------|-------|-------|---------|-------|-------|
| | 1940 | 1941 | 1942 | 1940 | 1941 | 1942 |
| Number of farms..... | 59 | 67 | 61 | 63 | 79 | 57 |
| Size of farm business | | | | | | |
| Productive man work units..... | 539 | 562 | 591 | 624 | 607 | 612 |
| Acres—owned..... | 126 | 134 | 128 | 0 | 0 | 0 |
| —rented..... | 14 | 14 | 26 | 157 | 154 | 151 |
| —total..... | 140 | 148 | 154 | 157 | 154 | 151 |
| Number of dairy cows..... | 20.3 | 21.4 | 22.2 | 23.9 | 24.5 | 25.1 |
| Months of labor—total..... | 23.4 | 25.5 | 24.4 | 22.6 | 22.3 | 23.7 |
| —hired..... | 5.7 | 6.9 | 5.4 | 5.9 | 5.1 | 3.8 |
| Productivity measures | | | | | | |
| Pounds of 3.5-percent milk per cow..... | 7 472 | 7 676 | 7 616 | 7 187 | 7 547 | 7 337 |
| Bushels of corn per acre..... | 58 | 63 | 64 | 52 | 60 | 62 |
| Tons of legume hay per acre..... | 2.0 | 1.9 | 2.3 | 1.9 | 1.7 | .... |
| Land use | | | | | | |
| Acres per cow..... | 6.9 | 6.9 | 6.9 | 6.6 | 6.3 | 6.0 |
| Percent of total acres in crops..... | 71.3 | 71.9 | 68.7 | 69.5 | 69.2 | 70.6 |
| Percent of crop acres | | | | | | |
| —in corn and silage..... | 31.1 | 34.2 | 34.9 | 36.8 | 36.3 | 37.9 |
| —in soil-depleting crops..... | 62.7 | 65.3 | 63.0 | 69.9 | 67.4 | 66.6 |
| —in hay and rotation pasture..... | 42.9 | 38.9 | 36.7 | 36.6 | 34.4 | 33.4 |
| Percent of total acres in permanent pasture | 18.6 | 21.5 | 24.5 | 21.7 | 23.8 | 22.6 |
| Limestone applied in last 5 years, tons..... | 46 | 60 | .... | 21 | 31 | .... |
| Phosphate applied in last 5 years, tons..... | 3.4 | 5.9 | .... | .5 | .6 | .... |
| Dairy herd | | | | | | |
| Percent of cows home raised..... | 70 | 65 | .... | 51 | 49 | .... |
| Percent of cows replaced during year..... | 8 | 15 | .... | 16 | 15 | .... |
| Value of cows bought per \$100 worth of cows sold..... | \$167 | \$156 | .... | \$169 | \$157 | .... |
| Number of cows purchased | | | | | | |
| —from dealers..... | 1.1 | 1.9 | .... | 2.5 | 2.3 | .... |
| —at auctions..... | .4 | .8 | .... | .8 | .7 | .... |
| —from farmers..... | .2 | .5 | .... | .6 | .6 | .... |
| Number of cows reported diseased | | | | | | |
| —home raised..... | .6 | 2.1 | .... | 1.3 | 1.4 | .... |
| —purchased..... | .8 | 1.3 | .... | 2.3 | 1.6 | .... |
| Personal characteristics | | | | | | |
| Age of operator..... | 52 | 53 | 54 | 47 | 47 | 49 |
| Years on farm..... | 18 | 20 | 19 | 7 | 7 | 8 |
| Number in family, total..... | 4 | 4 | 4 | 4 | 4 | 4 |
| Number over 14 years old..... | 3 | 3 | 3 | 3 | 3 | 3 |

owners, but they utilized less labor. Both the tenants' milk production per cow and their crop yields averaged lower. They had more heavily stocked farms, a slightly higher percentage of cropland in corn, silage, and soil-depleting crops, and a slightly smaller percentage in hay and pasture. Also, during the last five years they had applied less lime and phosphate to their farms than had the owners and part owners.

The tenants raised a smaller percentage of their cows than did the owners and part owners. Both groups purchased cows chiefly from dealers.

The tenants were about five years younger than the owners, their average age in 1941 being about 47 years, owners about 53 years. The owners had been on the farms they were operating about 20

TABLE 33.—VARIOUS ITEMS CONCERNING FARMS, FARM FAMILIES, AND FARM BUSINESSES OF CASH TENANTS AND LIVESTOCK-SHARE TENANTS, 1940, 1941, AND 1942

| | Cash tenants | | | Livestock-share tenants | | |
|--|--------------|-------|-------|-------------------------|-------|-------|
| | 1940 | 1941 | 1942 | 1940 | 1941 | 1942 |
| Number of farms..... | 40 | 50 | 37 | 23 | 29 | 20 |
| Size of farm business | | | | | | |
| Productive man work units..... | 552 | 551 | 537 | 751 | 703 | 751 |
| Acres—owned..... | 0 | 0 | 0 | 0 | 0 | 0 |
| —rented..... | 146 | 146 | 140 | 178 | 166 | 171 |
| —total..... | 146 | 146 | 140 | 178 | 166 | 171 |
| Number of dairy cows..... | 20.9 | 22.1 | 21.7 | 28.9 | 28.2 | 31.5 |
| Months of labor—total..... | 22.1 | 21.7 | 23.4 | 23.4 | 23.3 | 24.5 |
| —hired..... | 5.7 | 5.0 | 3.6 | 6.0 | 5.3 | 4.3 |
| Productivity measures | | | | | | |
| Pounds of 3.5-percent milk per cow..... | 7 414 | 7 547 | 7 357 | 6 868 | 7 547 | 7 307 |
| Bushels of corn per acre..... | 50 | 60 | 57 | 54 | 61 | 73 |
| Tons of legume hay per acre..... | 1.8 | 1.5 | 2.2 | 1.9 | 1.9 | 2.4 |
| Land use | | | | | | |
| Acres per cow..... | 7.0 | 6.6 | 6.4 | 6.2 | 5.9 | 5.4 |
| Percent of total acres in crops..... | 72.2 | 68.5 | 68.9 | 67.7 | 70.4 | 73.2 |
| Percent of crop acres | | | | | | |
| —in corn and silage..... | 37.2 | 38.1 | 40.0 | 36.2 | 33.3 | 34.5 |
| —in soil depleting crops..... | 70.4 | 70.4 | 69.0 | 68.9 | 62.1 | 62.2 |
| —in hay and rotation pasture..... | 36.9 | 33.1 | 30.3 | 36.2 | 36.5 | 37.8 |
| Percent of total acres in permanent pasture | 20.0 | 24.9 | 25.5 | 24.2 | 21.9 | 20.0 |
| Limestone applied in last 5 years, tons..... | 14 | 23 | ..... | 36 | 46 | ..... |
| Phosphate applied in last 5 years, tons..... | .5 | .5 | ..... | .7 | .7 | ..... |
| Dairy herd | | | | | | |
| Percent of cows home raised..... | 50 | 50 | ..... | 52 | 47 | ..... |
| Percent of cows replaced during year..... | 19 | 17 | ..... | 14 | 10 | ..... |
| Value of cows bought per \$100 worth of cows sold..... | \$172 | \$162 | ..... | \$162 | \$135 | ..... |
| Number of cows purchased | | | | | | |
| —from dealers..... | 2.2 | 2.7 | ..... | 3.0 | 1.8 | ..... |
| —at auctions..... | 1.2 | .7 | ..... | .2 | .5 | ..... |
| —from farmers..... | .6 | .6 | ..... | .8 | .6 | ..... |
| Number of cows reported diseased | | | | | | |
| —home raised..... | 1.5 | 1.3 | ..... | 1.0 | 1.7 | ..... |
| —purchased..... | 2.1 | 1.1 | ..... | 2.6 | 2.3 | ..... |
| Personal characteristics | | | | | | |
| Age of operator..... | 48 | 47 | 50 | 46 | 46 | 47 |
| Years on farm..... | 7 | 7 | 8 | 6 | 6 | 8 |
| Number in family, total..... | 4 | 4 | 4 | 5 | 4 | 5 |
| Number over 14 years old..... | 3 | 3 | 3 | 3 | 3 | 3 |

years, the tenants about 8 years. The size of the family in each group averaged four.

As measured by all four factors (productive man work units, acres, cows, and months of labor utilized in running the farm), the livestock-share tenants operated larger farms than the cash tenants, altho the difference in months of labor used was small (Table 33). In 1940 the share tenants had lower milk production per cow than the cash tenants; in the other two years this factor did not differ significantly. They had better crop yields, their farms were more heavily stocked and became increasingly more heavily stocked during these years. The cash tenants had a higher percentage of land in corn, silage, and soil-depleting crops and a lower proportion in soil-building crops, hay, and rotated pasture. During the last five years less limestone and phosphate had been applied to their farms. Between these tenant groups there were no significant differences in age of operator, in the number of years he had operated the farm, or in size of family.

Farms With Different Debt Ratios

The number of cows per farm in the owner groups (Table 34) tended to be higher in proportion to debt ratios in 1940 and 1941 than in 1942. Some of the older men dropped out of the sample, and meanwhile some of the farmers of the higher income groups paid off their debts. These changes explain why in 1942 the number of cows on the low-debt farms was larger than in the other years. In the first two years the owners with the higher debt ratios had higher milk production per cow, but this was not true in the 1942 sample. The owner-operated farms with the higher debt ratios had more acres per cow and more total acres (Table 6, page 532). There were no significant differences in percentage of crop acres in soil-depleting crops. As other studies have shown, this factor is not related to debt, at least under the conditions which have prevailed since 1934. The owners with no debts raised a smaller percentage of their cows. Except in 1942 the no-debt farmers were older men.

Among tenants (Table 35), the no-debt farmers milked larger herds and had higher production per cow. Lower production per cow was characteristic of the high-debt tenants. Acres per cow tended to decrease as debts decreased. Except in 1940, when the percentage of crop acres in soil-depleting crops tended to be positively correlated with debt ratios, this factor did not vary in any systematic fashion with debt. The percentage of dairy cows raised was negatively correlated with debt; that is, high-debt tenants bought more of their cows, indi-

TABLE 34.—SELECTED ITEMS CONCERNING OWNER AND PART-OWNER FARMS CLASSIFIED BY DEBT-TO-PROPERTY RATIOS, 1940, 1941, AND 1942

| Debt ratio | 0 | 1-19% | 20-39% | 40% and over |
|--|-------|-------|--------|--------------|
| Number of dairy cows | | | | |
| 1940 | 19.9 | 17.4 | 19.0 | 23.7 |
| 1941 | 19.2 | 21.8 | 20.9 | 23.2 |
| 1942 | 25.3 | 22.2 | 21.0 | 22.6 |
| Production per cow, pounds of 3.5-percent milk | | | | |
| 1940 | 6 797 | 7 147 | 7 769 | 7 208 |
| 1941 | 7 048 | 7 147 | 7 972 | 7 844 |
| 1942 | 7 801 | 7 418 | 7 672 | 7 592 |
| Acres per cow | | | | |
| 1940 | 7.3 | 6.3 | 7.0 | 7.6 |
| 1941 | 6.6 | 5.6 | 6.4 | 8.4 |
| 1942 | 6.8 | 6.3 | 6.9 | 7.7 |
| Percent of crop acres in soil-depleting crops | | | | |
| 1940 | 62.8 | 58.8 | 63.9 | 64.1 |
| 1941 | 64.8 | 59.6 | 67.4 | 65.1 |
| 1942 | 60.3 | 61.9 | 64.8 | 62.8 |
| Percent of dairy herd home raised | | | | |
| 1940 | 59 | 60 | 77 | 67 |
| 1941 | 57 | 73 | 68 | 64 |
| Average age of operators | | | | |
| 1940 | 62 | 51 | 55 | 49 |
| 1941 | 61 | 48 | 53 | 53 |
| 1942 | 52 | 55 | 54 | 55 |

cating a tendency to keep more of their limited capital in milk cows and less in replacement stock.

The younger the operators, the higher, on the average, were the debts, as would be expected, for younger men, starting farming, usually must borrow and then gradually retire their indebtedness.

TABLE 35.—SELECTED ITEMS CONCERNING TENANT FARMS CLASSIFIED BY DEBT-TO-PROPERTY RATIOS, 1940, 1941, AND 1942

| Debt ratio | 0 | 1-19% | 20-39% | 40% and over |
|--|-------|-------|--------|--------------|
| Number of dairy cows | | | | |
| 1940 | 29.1 | 22.3 | 23.0 | 21.5 |
| 1941 | 27.3 | 21.4 | 25.7 | 23.6 |
| 1942 | 28.2 | 22.3 | 28.5 | 23.3 |
| Production per cow, pounds of 3.5-percent milk | | | | |
| 1940 | 7 878 | 7 254 | 7 245 | 6 201 |
| 1941 | 7 954 | 7 996 | 7 467 | 7 211 |
| 1942 | 7 625 | 7 357 | 7 602 | 6 533 |
| Acres per cow | | | | |
| 1940 | 6.0 | 6.4 | 6.9 | 7.6 |
| 1941 | 5.8 | 6.7 | 6.4 | 6.3 |
| 1942 | 5.9 | 5.9 | 5.9 | 6.7 |
| Percent of crop acres in soil-depleting crops | | | | |
| 1940 | 58.3 | 71.5 | 67.7 | 77.3 |
| 1941 | 67.7 | 71.4 | 68.2 | 67.4 |
| 1942 | 64.2 | 68.5 | 64.3 | 68.1 |
| Percent of dairy herd home raised | | | | |
| 1940 | 65 | 58 | 47 | 31 |
| 1941 | 59 | 45 | 49 | 27 |
| Average age of operators | | | | |
| 1940 | 48 | 49 | 47 | 44 |
| 1941 | 51 | 47 | 46 | 42 |
| 1942 | 54 | 49 | 48 | 42 |

Farms of Different Size

The owners having the smallest farms, as measured by productive man work units, averaged about 12 cows; those having the largest farms, about 30 cows (Table 36). Except in 1940, production per cow averaged higher on those farms where more cows were milked. Apparently the operators of the larger farms found it possible to increase production per cow during these years, particularly in 1941. The operators of the smaller farms tended to stock them more heavily, a fact that suggests that size of farm was a factor that hindered further

TABLE 36.—SELECTED ITEMS CONCERNING OWNER AND PART-OWNER FARMS GROUPED BY SIZE OF BUSINESS, 1940, 1941, AND 1942

| Productive man work units..... | Under 400 | 400-549 | 550-699 | 700 and over |
|---|-----------|---------|---------|--------------|
| Number of dairy cows | | | | |
| 1940..... | 12.2 | 17.9 | 22.4 | 32.2 |
| 1941..... | 11.7 | 18.6 | 23.4 | 30.7 |
| 1942..... | 11.4 | 17.8 | 22.9 | 31.0 |
| Production per cow, pounds of 3.5-percent milk | | | | |
| 1940..... | 7 748 | 7 146 | 7 553 | 7 421 |
| 1941..... | 7 218 | 7 590 | 7 888 | 7 914 |
| 1942..... | 7 258 | 7 378 | 7 597 | 8 037 |
| Acres per cow | | | | |
| 1940..... | 7.0 | 6.4 | 7.8 | 6.0 |
| 1941..... | 6.0 | 6.3 | 7.6 | 7.3 |
| 1942..... | 6.2 | 6.5 | 7.3 | 7.1 |
| Percent of crop acres in soil-depleting crops | | | | |
| 1940..... | 62.8 | 59.5 | 65.6 | 62.3 |
| 1941..... | 60.0 | 69.8 | 64.7 | 66.9 |
| 1942..... | 55.6 | 58.0 | 66.5 | 63.5 |
| Percent of dairy herd home raised | | | | |
| 1940..... | 60 | 66 | 75 | 80 |
| 1941..... | 49 | 63 | 71 | 73 |
| Average age of operators | | | | |
| 1940..... | 58 | 52 | 50 | 48 |
| 1941..... | 59 | 49 | 54 | 52 |
| 1942..... | 59 | 52 | 53 | 55 |

increases in these herds. The owners of the larger farms tended to put more of their cropland in soil-depleting crops. They also raised more of their cows, a fact that indicates that they were not so limited in the use of their land. Among the operators of the smaller farms were more older men.

The tenants having the smallest farms averaged 12 to 13 cows, compared with 35 to 40 cows for those having the largest farms (Table 37). Production per cow was positively correlated with size of farm, the correlation in this case being high. In 1941 and 1942 the tenants on the larger farms tended to stock them more heavily than the tenants on the smaller farms. The tenants on the smaller farms had a higher percentage of land in soil-depleting crops, the percentage

TABLE 37.—SELECTED ITEMS CONCERNING TENANT FARMS GROUPED BY SIZE OF BUSINESS, 1940, 1941, AND 1942

| Productive man work units..... | Under 400 | 400-549 | 550-699 | 700 and over |
|---|-----------|---------|---------|--------------|
| Number of dairy cows | | | | |
| 1940..... | 12.4 | 18.1 | 23.5 | 34.7 |
| 1941..... | 12.0 | 19.7 | 24.8 | 35.9 |
| 1942..... | 12.6 | 19.0 | 25.0 | 40.2 |
| Production per cow, pounds of 3.5-percent milk | | | | |
| 1940..... | 7 026 | 7 265 | 7 489 | 6 927 |
| 1941..... | 7 038 | 7 550 | 7 367 | 7 988 |
| 1942..... | 7 049 | 7 118 | 7 348 | 7 790 |
| Acres per cow | | | | |
| 1940..... | 5.7 | 7.7 | 6.8 | 6.6 |
| 1941..... | 7.5 | 6.8 | 6.1 | 6.1 |
| 1942..... | 7.7 | 6.6 | 5.9 | 5.4 |
| Percent of crop acres in soil-depleting crops | | | | |
| 1940..... | 68.2 | 71.2 | 69.6 | 69.7 |
| 1941..... | 77.6 | 67.9 | 68.1 | 64.9 |
| 1942..... | 78.9 | 70.5 | 67.3 | 60.3 |
| Percent of dairy herd home raised | | | | |
| 1940..... | 36 | 62 | 45 | 53 |
| 1941..... | 42 | 48 | 43 | 56 |
| Average age of operators | | | | |
| 1940..... | 48 | 47 | 46 | 48 |
| 1941..... | 49 | 46 | 47 | 46 |
| 1942..... | 54 | 44 | 53 | 48 |

becoming even higher during the period; whereas the tenants on the larger farms were reducing their acreage in soil-depleting crops. Tenants on the larger farms raised a larger percentage of their cows than those on the smaller farms. There was no significant difference in age among these men.

CHANGES IN MILK PRODUCTION

On the 72 farms for which continuous records from 1940 thru 1942 were available, the average milk production per farm increased 17,560 pounds or 10.7 percent in 1941 over 1940 (Table 38), and 3,537 pounds or 1.9 percent in 1942 over 1941. On a percentage basis the part owners made the largest increases in 1941, the cash tenants the smallest. In 1942 the production of the part owners fell below that of the previous year, while the production of the full owners showed the largest increase.

When the farms are grouped by size, the 1941 increases in milk production on owner farms are found to have been directly correlated with size of farm, but in 1942 no correlation was indicated. Among tenants there was no clear relationship between size of business and increases in milk production either in 1941 or 1942. Among owners the more heavily indebted groups made the largest increases in 1941, but not in 1942. Among tenants, debt ratios were not significantly related

TABLE 38.—POUNDS OF 3.5-PERCENT MILK PRODUCED PER FARM ON 72 MCHENRY COUNTY FARMS IN 1940, 1941, AND 1942

| Grouping | Number of farms | 1940 | 1941 | 1942 | Increase 1941 over 1940 | | Increase 1941 over 1942 | |
|--------------------------------|-----------------|---------|---------|---------|-------------------------|--------|-------------------------|--------|
| | | lb. | lb. | lb. | lb. | perct. | lb. | perct. |
| Tenure of operators | | | | | | | | |
| Owners | 25 | 150 072 | 165 294 | 176 668 | 15 222 | 10.1 | 11 374 | 6.9 |
| Part owners | 11 | 160 031 | 188 112 | 182 130 | 28 081 | 17.5 | -5 982 | -3.2 |
| All owners | 36 | 153 394 | 172 396 | 178 443 | 19 002 | 12.4 | 6 047 | 3.5 |
| Cash tenants | 23 | 151 569 | 162 415 | 164 023 | 10 846 | 7.2 | 1 608 | 1.0 |
| Livestock-share tenants | 13 | 216 150 | 243 086 | 243 241 | 26 936 | 12.5 | 155 | .1 |
| All tenants | 36 | 175 602 | 191 628 | 192 707 | 16 026 | 9.1 | 1 079 | .6 |
| All farms | 72 | 164 714 | 182 274 | 185 811 | 17 560 | 10.7 | 3 537 | 1.9 |
| Size of farm (p.m.w.u.) | | | | | | | | |
| <i>Owners and part owners</i> | | | | | | | | |
| Under 400 | 7 | 97 381 | 94 279 | 98 951 | -3 102 | -3.2 | 4 676 | 5.0 |
| 400 to 549 | 11 | 137 374 | 156 175 | 158 443 | 18 801 | 13.7 | 2 268 | 1.5 |
| All under 550 | 18 | 121 737 | 131 188 | 134 676 | 9 451 | 7.8 | 3 488 | 2.7 |
| 500 to 699 | 11 | 166 631 | 193 545 | 202 320 | 26 914 | 16.2 | 8 775 | 4.5 |
| 700 and over | 7 | 212 862 | 251 446 | 259 022 | 38 584 | 18.1 | 7 576 | 3.0 |
| All 550 and over | 18 | 185 563 | 216 776 | 224 950 | 31 213 | 16.8 | 8 174 | 3.8 |
| <i>Tenants</i> | | | | | | | | |
| Under 400 | 6 | 87 375 | 94 892 | 95 472 | 7 517 | 8.6 | 580 | .6 |
| 400 to 549 | 7 | 138 869 | 148 221 | 148 629 | 9 352 | 6.7 | 408 | .3 |
| All under 550 | 13 | 113 952 | 123 003 | 123 605 | 9 051 | 7.9 | 602 | .5 |
| 550 to 699 | 13 | 164 812 | 176 711 | 180 579 | 11 899 | 7.2 | 3 868 | 2.2 |
| 700 and over | 10 | 264 579 | 303 137 | 303 820 | 38 558 | 14.6 | 683 | .2 |
| All 550 and over | 23 | 209 204 | 230 225 | 232 086 | 21 021 | 10.0 | 1 861 | .8 |
| Debt ratio | | | | | | | | |
| <i>Owners and part owners</i> | | | | | | | | |
| 0 | 6 | 152 258 | 155 639 | 154 330 | 3 381 | 2.2 | -1 309 | -.8 |
| 1 to 19 percent | 5 | 123 757 | 137 680 | 162 652 | 13 923 | 11.3 | 24 972 | 18.1 |
| All under 20 percent | 11 | 139 018 | 147 673 | 158 430 | 8 655 | 6.2 | 10 757 | 7.3 |
| 20 to 39 percent | 17 | 155 808 | 179 282 | 185 823 | 23 474 | 15.1 | 6 541 | 3.6 |
| 40 percent and over | 8 | 167 788 | 192 715 | 190 583 | 24 927 | 14.9 | -2 132 | -1.1 |
| All 20 percent and over | 25 | 159 907 | 183 794 | 187 612 | 23 887 | 15.0 | 3 818 | 2.1 |
| <i>Tenants</i> | | | | | | | | |
| 0 | 9 | 240 037 | 264 528 | 270 277 | 24 491 | 10.2 | 5 749 | 2.2 |
| 1 to 19 percent | 11 | 142 672 | 154 825 | 156 239 | 12 533 | 8.5 | 1 414 | .9 |
| All under 20 percent | 20 | 184 847 | 202 477 | 205 998 | 17 630 | 9.5 | 3 521 | 1.7 |
| 20 to 39 percent | 11 | 168 835 | 182 860 | 182 693 | 14 025 | 8.3 | -167 | -.1 |
| 40 percent and over | 5 | 152 445 | 166 998 | 163 045 | 14 553 | 9.5 | -3 953 | -2.4 |
| All 20 percent and over | 16 | 164 342 | 178 297 | 176 708 | 13 955 | 8.5 | -1 589 | -.9 |

to changes in milk production, but the operators of the more heavily indebted farms did produce less milk in 1942 than in 1941.

If the two years are taken together, the operators of the larger farms and the more heavily indebted farms are found to have increased their milk production more than the other operators.

Since the samples are small, the above results cannot be taken as indicating definitely what large groups of similar farmers actually did during these years. It would appear, however, that farmers reacted differently to pressure to increase their milk production in this period.

TOTAL FARM BUSINESS

In studies of farm financing both the operator and the business are of interest. The analysis up to this point has, however, dealt only with

the *operator's* capital and income. In the case of tenant-operated farms no figures have been included to show the extent of the capital furnished by the landlord or his share of the income. In order, therefore, to give a more complete picture of the farms in these studies and furnish a basis for comparing them with those included in other farm-income studies, capital and income data for the entire farm business in 1942 were obtained for 118 farms. Averages for these farms, grouped by tenure of operators, are shown in Table 39.

The farms with the smallest total capital investments were operated by owners and cash tenants; those with the largest were operated by part owners and livestock-share tenants. The rates earned on total investment varied but little among the different tenure groups, averaging 13.6 percent for the combined owner and part-owner group and 13.8 for the tenant group. Likewise, for the farm as a whole there was little variation in the calculated labor and management wage, which averaged \$3,015 for the farms of the owners and part owners and \$3,045 for the farms operated by tenants. However, the groups made up of livestock-share tenants who owned less than 50 percent of the cows showed the highest rate earned on total investment, 19.1 percent, and the highest labor and management wage (farm), \$5,473. On this group of farms the landlords took a direct interest in the business. This group also had the highest average production of milk per cow and the highest yield of corn per acre.

The figures showing the operator's share in the business of these farms give a different picture. The rate earned on his share of the capital was much higher than the rate earned on the total farm business, averaging 33.4 percent for all tenants. The operator's labor and management wage was lowest for the livestock-share tenants owning 50 percent of the cows, \$1,832, and highest for the part owners, \$3,296. For owners and part owners together it averaged \$3,058; for all tenants, \$2,602.

The landlord's rate of return on his investment averaged 3.5 percent on the farms rented for cash; 4 percent on the part-owner farms; and 11.4 percent on the livestock-share farms. These differences reflect the tendency of the earnings of landlords who rent for cash to lag behind in periods of rising incomes, while earnings of those who rent for shares tend to follow changes in income.

None of the measures of earnings varied with debt ratios in any uniform fashion (Table 40).

Among the owners the rates earned on total farm capital, and particularly the labor and management wage, increased with the size

TABLE 40.—SELECTED ITEMS CONCERNING TOTAL 1942 BUSINESS OF 118 FARMS GROUPED BY TENURE OF OPERATORS AND BY DEBT RATIO

| Item | Farms with debt ratios indicated operated by owners and part owners | | | | Farms with debt ratios indicated operated by tenants | | | |
|--|---|----------|----------|--------------|--|----------|----------|--------------|
| | 0 | 1-19% | 20-30% | 40% and over | 0 | 1-19% | 20-30% | 40% and over |
| Number of farms..... | 9 | 15 | 25 | 12 | 12 | 23 | 13 | 9 |
| Total investment..... | \$28 518 | \$21 144 | \$25 445 | \$29 529 | \$27 823 | \$22 684 | \$29 177 | \$24 834 |
| Rate earned on total investment..... | 15.3% | 11.1% | 13.9% | 14.1% | 14.4% | 14.2% | 13.6% | 12.3% |
| Labor and management wage (farm)..... | \$ 3 689 | \$ 2 087 | \$ 3 114 | \$ 3 470 | \$ 3 399 | \$ 2 894 | \$ 3 328 | \$ 2 563 |
| Number of dairy cows..... | 25.3 | 22.2 | 21.0 | 22.6 | 28.2 | 22.3 | 28.5 | 23.3 |
| Milk production per cow, pounds..... | 7 801 | 7 418 | 7 672 | 7 592 | 7 625 | 7 357 | 7 602 | 6 533 |
| Operator's earnings | | | | | | | | |
| Rate earned on operator's investment.... | 16.7% | 11.4% | 15.1% | 15.0% | 36.7% | 33.5% | 31.0% | 32.4% |
| Labor and management wage..... | \$ 3 764 | \$ 2 053 | \$ 3 146 | \$ 3 504 | \$ 3 048 | \$ 2 475 | \$ 2 779 | \$ 2 090 |
| Landlord's earnings | | | | | | | | |
| Rate earned on landlord's investment.... | 2.2% | 7.1% | 3.7% | 3.6% | 6.7% | 7.5% | 7.5% | 7.4% |

TABLE 41.—SELECTED ITEMS CONCERNING TOTAL 1942 BUSINESS OF 118 FARMS GROUPED BY TENURE OF OPERATORS AND SIZE OF BUSINESS

| Item | Farms operated by owners and part owners, requiring productive man units indicated | | | | Farms operated by tenants, requiring productive man work units indicated | | | |
|--|--|----------|----------|--------------|--|----------|----------|--------------|
| | Under 400 | 400-549 | 550-699 | 700 and over | Under 400 | 400-549 | 550-699 | 700 and over |
| Number of farms..... | 11 | 13 | 20 | 17 | 7 | 20 | 16 | 14 |
| Total investment..... | \$13 037 | \$21 574 | \$27 814 | \$34 358 | \$15 255 | \$19 439 | \$25 775 | \$39 321 |
| Rate earned on total investment..... | 5.0% | 15.2% | 12.5% | 16.0% | 7.5% | 12.7% | 14.2% | 15.5% |
| Labor and management wage (farm)..... | \$ 812 | \$ 2 993 | \$ 2 932 | \$ 4 557 | \$ 1 223 | \$ 2 267 | \$ 3 208 | \$ 4 890 |
| Number of dairy cows..... | 11.4 | 17.8 | 22.9 | 29.1 | 12.6 | 19.0 | 25.0 | 40.2 |
| Milk production per cow, pounds..... | 7 258 | 7 378 | 7 597 | 7 563 | 7 049 | 7 118 | 7 348 | 7 790 |
| Operator's earnings | | | | | | | | |
| Rate earned on operator's investment.... | 5.0% | 15.4% | 13.3% | 18.1% | 17.9% | 32.4% | 33.2% | 37.5% |
| Labor and management wage..... | \$ 812 | \$ 2 996 | \$ 2 903 | \$ 4 672 | \$ 1 299 | \$ 2 183 | \$ 2 800 | \$ 3 629 |
| Landlord's earnings | | | | | | | | |
| Rate earned on landlord's investment.... | ..... | 4.2% | 6.0% | 2.5% | 4.4% | 5.6% | 7.2% | 9.1% |

of the farm business (Table 41). On the tenant farms the tendency of rates earned to increase with size of business was even more marked than on the owner farms. Since production was profitable in 1942, the farms producing the most would earn the highest rates. In the owner group the smallest farms, measured by size of business, provided an average labor and management wage (farm) of \$812, whereas the largest farms yielded \$4,557. Similar figures for the smallest and largest tenant farms were \$1,223 and \$4,890 respectively.

On the tenant farms both the tenant's labor and management wage and the rate earned on the landlord's investment increased with size of farm. More of the smaller than of the larger tenant farms were rented for cash, and so not all the landlords of the smaller farms shared in the increased income.

KINDS OF CREDIT AND HOW USED

Debts of All Farmers

At the end of 1942 the farmers included in this study owed, on the average, one-third as many short-term as long-term debts (Table 42). The long-term debts of owners and part owners were secured chiefly by first mortgages, only 15.6 percent of the long-term debts of owners and 24.6 percent of those of part owners being second mortgages or other kinds of debts. Short-term debts of owners and of tenants consisted largely of personal notes or chattel mortgages, altho among tenants chattel mortgages were more important than among owners. In 1942 these two forms of debt represented 86 percent of all short-term debts. Conditional sales contracts and personal debts were of minor importance.

Sources of Credit

Owners. At the beginning of the period (December, 1940) the Federal Land Bank, individuals, insurance companies, and the Land Bank Commissioner were the principal holders of the long-term debts of owners (Table 43). During the period the importance of the Federal Land Bank and the Land Bank Commissioner as holders of long-term debts increased in this sample, that of insurance companies increased slightly, while individuals became less important. Commercial banks were not important in this field. The three principal holders of short-term debts of owners and part owners at the beginning of this period were commercial banks, individuals, and the Production Credit Associ-

TABLE 43.—PERCENTAGE OF LONG-TERM AND SHORT-TERM DEBTS WHICH OWNERS AND PART OWNERS OWED TO VARIOUS LENDING AGENCIES, DECEMBER 31, 1940, 1941, AND 1942

| | Owners | | | Part owners | | | Owners and part owners | | |
|------------------------------------|-----------|-----------|-----------|-------------|-----------|----------|------------------------|-----------|-----------|
| | 1940 | 1941 | 1942 | 1940 | 1941 | 1942 | 1940 | 1941 | 1942 |
| | | \$255 996 | \$185 421 | \$89 560 | \$110 132 | \$87 176 | \$284 345 | \$366 128 | \$272 597 |
| Long-term debts | | | | | | | | | |
| Total..... | \$194 785 | \$255 996 | \$185 421 | \$89 560 | \$110 132 | \$87 176 | \$284 345 | \$366 128 | \$272 597 |
| Percent of total..... | | | | | | | | | |
| Federal Land Bank..... | 29.7 | 33.9 | 38.6 | 25.1 | 33.2 | 39.9 | 28.2 | 33.7 | 39.0 |
| Land Bank Commissioner..... | 10.0 | 14.1 | 15.6 | 15.8 | 19.2 | 15.0 | 11.8 | 15.6 | 15.4 |
| Individuals..... | 35.9 | 24.5 | 11.2 | 22.3 | 9.3 | 9.6 | 31.6 | 20.0 | 10.7 |
| Insurance companies..... | 21.3 | 23.5 | 19.9 | 22.2 | 24.8 | 30.9 | 21.6 | 23.9 | 23.4 |
| Commercial banks..... | 3.1 | 4.0 | 3.4 | 2.9 | 4.5 | 4.6 | 3.1 | 4.1 | 3.8 |
| Other sources..... | 0 | 0 | 11.3 | 11.7 | 9.0 | 0 | 3.7 | 2.7 | 7.7 |
| Short-term debts | | | | | | | | | |
| Total..... | \$26 461 | \$34 302 | \$16 514 | \$20 701 | \$20 559 | \$16 400 | \$47 162 | \$54 861 | \$32 914 |
| Percent of total..... | | | | | | | | | |
| Commercial banks..... | 46.1 | 56.2 | 25.7 | 30.1 | 23.0 | 24.8 | 39.1 | 44.1 | 25.3 |
| Farm Security Administration..... | 6.0 | 4.5 | 10.8 | 0 | 0 | 0 | 3.9 | 2.8 | 5.4 |
| Production Credit Association..... | 2.0 | 4.4 | 12.4 | 23.9 | 30.1 | 16.9 | 11.6 | 14.0 | 14.7 |
| Individuals..... | 20.9 | 16.1 | 24.2 | 36.7 | 31.5 | 50.9 | 27.8 | 21.9 | 37.5 |
| Cattle dealers..... | 0 | 1.1 | 7.9 | 0 | 1.5 | 3.7 | 0 | 1.2 | 5.7 |
| Implement dealers..... | 4.5 | 6.9 | 3.0 | 1.1 | 5.1 | 3 | 3.0 | 6.2 | 1.7 |
| Finance companies..... | 4.8 | 4.8 | 2.6 | 2.4 | 4.2 | 0 | 3.8 | 4.6 | 1.3 |
| Merchants..... | 2.4 | 1.6 | 2.8 | 5 | 4.7 | 3.4 | 1.6 | 1.3 | 3.1 |
| Other sources..... | 1.4 | 0 | 4.9 | 4.9 | 0 | 0 | 2.9 | 0 | 2.5 |
| Delinquent taxes..... | 1.0 | 1.1 | 0 | 0 | 0 | 0 | .7 | 0 | 0 |
| Interest in arrears..... | .6 | .6 | 3.6 | 0 | 1.6 | 3.0 | 0 | 1.0 | 1.8 |
| Principal in arrears..... | 9.4 | 2.7 | 2.1 | .4 | 1.4 | 0 | 5.4 | 2.2 | 1.0 |

TABLE 44.—PERCENTAGE OF LONG-TERM AND SHORT-TERM DEBTS WHICH TENANTS OWED TO VARIOUS LENDING AGENCIES, DECEMBER 31, 1940, 1941, AND 1942

| | Cash tenants | | | Livestock-share tenants | | | All tenants | | |
|------------------------------------|--------------|----------|----------|-------------------------|----------|----------|-------------|----------|----------|
| | 1940 | 1941 | 1942 | 1940 | 1941 | 1942 | 1940 | 1941 | 1942 |
| Long-term debts | | | | | | | | | |
| Total..... | \$ 4 400 | \$27 338 | \$ 9 885 | \$ 750 | \$..... | \$..... | \$ 5 150 | \$27 338 | \$ 9 885 |
| Percent of total | | | | | | | | | |
| Federal Land Bank..... | 0 | 0 | 40.0 | 0 | 0 | 0 | 0 | 0 | 40.0 |
| Land Bank Commissioner..... | 0 | 0 | 14.5 | 0 | 0 | 0 | 0 | 0 | 14.5 |
| Individuals..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Insurance companies..... | 0 | 18.3 | 0 | 0 | 0 | 0 | 0 | 18.3 | 0 |
| Commercial banks..... | 100 | 15.7 | 0 | 0 | 0 | 0 | 85.4 | 15.7 | 0 |
| Other sources..... | 0 | 66.0 | 45.5 | 100 | 0 | 0 | 14.6 | 66.0 | 45.5 |
| Short-term debts | | | | | | | | | |
| Total..... | \$44 512 | \$63 295 | \$40 570 | \$29 580 | \$32 102 | \$18 658 | \$74 092 | \$95 397 | \$59 228 |
| Percent of total | | | | | | | | | |
| Commercial banks..... | 37.9 | 21.6 | 21.0 | 4.5 | 12.2 | 14.5 | 24.6 | 18.5 | 18.9 |
| Farm Security Administration..... | 26.9 | 16.0 | 14.8 | 18.5 | 19.8 | 26.7 | 23.5 | 17.2 | 18.5 |
| Production Credit Association..... | 6.0 | 10.8 | 0 | 10.4 | 10.9 | 11.7 | 7.7 | 10.9 | 3.7 |
| Individuals..... | 7.2 | 13.6 | 19.7 | 14.6 | 11.6 | 8.7 | 9.6 | 13.0 | 16.3 |
| Cattle dealers..... | 12.3 | 18.5 | 25.0 | 8.1 | 1.7 | 0 | 11.2 | 12.8 | 17.1 |
| Landlords..... | 5.0 | 7.1 | 5.2 | 21.3 | 21.7 | 28.9 | 11.5 | 12.0 | 12.7 |
| Implement dealers..... | .2 | 3.0 | 10.4 | 17.7 | 12.9 | 4.0 | 7.2 | 6.3 | 8.4 |
| Finance companies..... | .6 | 4.5 | .7 | 1.6 | 3.6 | 1.8 | 1.1 | 4.2 | 1.1 |
| Merchants..... | .8 | 3.1 | 2.7 | 1.6 | 2.8 | 3.7 | 1.1 | 3.0 | 3.0 |
| Other sources..... | 2.3 | .8 | .2 | 0 | 0 | 0 | 1.4 | .5 | .1 |
| Delinquent taxes..... | 0 | .2 | .2 | 0 | 0 | 0 | 0 | .1 | .1 |
| Interest in arrears..... | .8 | .8 | .1 | 2.4 | 2.6 | 0 | 1.5 | 1.4 | .1 |
| Principal in arrears..... | 0 | 0 | .0 | 0 | .2 | 0 | 0 | .1 | 0 |

ation. At the end of the period, the importance of individuals as sources of credit had increased, that of commercial banks had declined, and that of the Production Credit Association had increased moderately. Also, the importance of the Farm Security Administration and of cattle dealers had increased, altho both were of minor importance to owners.

Tenants. Among tenants the sources of credit were more varied (Table 44). Cash tenants used somewhat different sources of credit from share tenants. At the end of 1940 one-fourth of the short-term credit used by tenants came from commercial banks and about the same proportion came from the Farm Security Administration. Individuals, cattle dealers, and landlords, all held about 10 percent each, and implement dealers and the Production Credit Association each held about 7 percent of the total. At the end of 1942 the importance of individuals and cattle dealers had increased, the importance of landlords and implement dealers had not changed much, while, in the sample of tenant farms studied, the importance of the banks, the Farm Security Administration, and the Production Credit Association had declined. This situation suggests a trend toward financing by agencies which have some interest other than the extension of credit.

Purpose of Borrowings

The owners' long-term borrowings were principally for refinancing, altho they borrowed a little for improvements (Table 45). The tenants' long-term borrowings were to buy farms or other property. Two tenants purchased farms in 1941, and one in 1942.

In 1940 and 1941 the short-term borrowings of owners were for four principal purposes: operating expenses, and the purchase of farm equipment, dairy cattle, automobiles and trucks; in 1942 they borrowed for only two of these purposes: operating expenses and purchase of dairy cattle. The short-term borrowings of tenants were for the same purposes except that they did not include the purchase of trucks and automobiles, a fact that indicates the tendency of tenants to borrow only for purposes quite directly connected with farm production. In 1942 tenants continued to borrow to buy farm equipment and to refinance. All these purposes are legitimate uses of credit.

Changes in Total Debts

In each year the owner and tenant debts secured by each class of long-term mortgages declined (Tables 46 and 47). The greatest declines were in loans held by commercial banks and individuals, the

TABLE 45.—PURPOSES FOR WHICH EACH YEAR'S BORROWINGS WERE USED

| Purpose of borrowing | Owners and part owners | | | Tenants | | |
|---------------------------------|------------------------|----------|----------|----------|----------|----------|
| | 1940 | 1941 | 1942 | 1940 | 1941 | 1942 |
| Long-term borrowing | | | | | | |
| Total..... | \$5 773 | \$9 535 | \$4 400 | \$3 000 | \$25 700 | \$12 635 |
| Percent of total | | | | | | |
| Purchase of land..... | 0 | 0 | 0 | 0 | 100 | 80.2 |
| Improvements..... | 17.6 | 26.6 | 4.5 | 0 | 0 | 0 |
| Refinancing..... | 82.4 | 73.4 | 95.5 | 100 | 0 | 0 |
| Nonfarm property..... | 0 | 0 | 0 | 0 | 0 | 19.8 |
| Short-term borrowing | | | | | | |
| Total..... | \$15 167 | \$29 950 | \$18 928 | \$28 086 | \$53 076 | \$36 338 |
| Percent of total | | | | | | |
| Purchase of— | | | | | | |
| Dairy cattle..... | 13.8 | 24.0 | 47.2 | 25.1 | 36.3 | 36.8 |
| Other livestock..... | 0 | 0 | 0 | 2.7 | .1 | 1.2 |
| Horses..... | .7 | 0 | 0 | 2.3 | .1 | 0 |
| Farm equipment..... | 13.9 | 33.1 | 4.8 | 30.2 | 21.7 | 21.7 |
| Automobile and truck..... | 29.0 | 16.4 | 1.6 | 4.7 | 10.1 | 4.4 |
| Current operating expenses..... | 30.5 | 20.3 | 34.4 | 28.3 | 15.8 | 14.4 |
| Personal debts..... | 2.0 | .5 | 4.5 | 3.0 | 6.2 | 3.6 |
| Sealed corn..... | 3.2 | 0 | 0 | 2.0 | 0 | 0 |
| Interest in arrears..... | 3.9 | 3.1 | 0 | 1.4 | 1.5 | .2 |
| Principal in arrears..... | 2.3 | .4 | 0 | .3 | 0 | 0 |
| Back taxes..... | .7 | .4 | 0 | 0 | .1 | 0 |
| Loan reamortization..... | 0 | 1.8 | 2.8 | 0 | 8.1 | 0 |
| Refinancing..... | 0 | 0 | 4.7 | 0 | 8.1 | 17.7 |

least in loans held by insurance companies. The Federal Land Bank and the Land Bank Commissioner occupied an intermediate position in this respect.

The changes in the short-term debts of owners were more varied. Loans by commercial banks to owners declined, particularly in 1942. Loans by the FSA declined in 1940 and 1941, but increased again in 1942. Loans by the PCA increased in 1940 and 1941, but declined in 1942. Loans by individuals were reduced in 1941, but increased in 1940 and 1942.

The owners reduced the net amount of their debts each year—2.3 percent in 1940, 6.8 percent in 1941, and 15.4 percent in 1942.

Among tenants, debts increased 12.1 percent in 1940; this rise represents an increase in loans from each source except from finance companies and merchants. In 1941 the loans from commercial banks, from the FSA, and from individuals were reduced. In 1942, while the tenants were substantially reducing their short-term debts they were at the same time increasing their long-term debts by practically the same amounts. During this year they reduced all their short-term debts except those to cattle and implement dealers.

It is probable that for the rest of the war period the new credits in this area will be used increasingly for purchases of land by tenants who have accumulated enough cash to make a down payment and for purchases of new equipment when it again becomes available.

TABLE 46.—ACTUAL AND PERCENTAGE CHANGES IN TOTAL DEBTS OF OWNERS AND PART OWNERS AS REPORTED AT THE BEGINNING OF 1940, 1941, AND 1942

| Kind of debt | 1940 | | | 1941 | | | 1942 | | |
|--------------------------------------|----------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
| | Increase | Decrease | Percent change | Increase | Decrease | Percent change | Increase | Decrease | Percent change |
| Long-term loans, total..... | ..... | \$14 293 | -4.8 | ..... | \$24 901 | -6.4 | ..... | \$43 205 | -13.7 |
| Federal Land Bank..... | ..... | 6 078 | -7.0 | ..... | 11 928 | -8.8 | ..... | 6 039 | -5.4 |
| Land Bank Commissioner..... | ..... | 4 442 | -11.8 | ..... | 2 724 | -4.5 | ..... | 5 906 | -12.3 |
| Individuals..... | ..... | 1 442 | -1.6 | ..... | 6 844 | -8.6 | ..... | 11 000 | -27.5 |
| Insurance companies..... | ..... | 800 | -1.3 | ..... | 2 065 | -2.3 | ..... | 8 508 | -11.8 |
| Commercial banks..... | ..... | 960 | -9.9 | ..... | 840 | -5.3 | ..... | 4 800 | -31.8 |
| Other sources..... | ..... | 538 | -4.9 | ..... | 500 | -4.8 | ..... | 6 952 | -24.8 |
| Short-term loans, total | \$6 375 | ..... | +15.6 | ..... | \$ 5 612 | -9.3 | ..... | \$12 565 | -27.6 |
| Commercial banks..... | ..... | 352 | -1.9 | ..... | 1 666 | -6.4 | ..... | 8 691 | -51.1 |
| Farm Security Administration..... | ..... | 106 | -5.5 | ..... | 277 | -15.2 | \$ 240 | ..... | +15.6 |
| Production Credit Association..... | 1 848 | ..... | +51.0 | \$ 594 | ..... | -8.4 | ..... | 2 041 | -29.7 |
| Individuals..... | 1 207 | ..... | +10.1 | ..... | 2 705 | -18.4 | ..... | ..... | +4.5 |
| Cattle dealers..... | ..... | ..... | ..... | 685 | ..... | (*) | 530 | ..... | ..... |
| Implement dealers..... | 1 388 | ..... | +4626.6 | 1 261 | ..... | +58.4 | 1 212 | 2 109 | +176.9 |
| Finance companies..... | ..... | 41 | -2.3 | ..... | 61 | -2.4 | ..... | 1 379 | -79.3 |
| Merchants..... | 202 | ..... | +38.1 | ..... | 23 | -3.1 | 368 | ..... | -76.4 |
| Other sources..... | 760 | ..... | +121.4 | ..... | 2 189 | -100.1 | 500 | ..... | +57.5 |
| Delinquent taxes..... | 108 | ..... | +66.7 | ..... | 164 | -29.7 | ..... | ..... | +160.8 |
| Interest in arrears..... | 150 | ..... | (*) | 384 | ..... | +256.0 | ..... | 389 | -100.0 |
| Principal in arrears..... | 1 211 | ..... | +89.8 | ..... | 1 451 | -54.5 | ..... | 362 | -37.7 |
| Summary..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 444 | -56.4 |
| Total long-term loans..... | ..... | \$14 293 | -4.8 | ..... | \$24 901 | -6.4 | ..... | \$43 205 | -13.7 |
| Total short-term loans..... | \$6 375 | ..... | +15.6 | ..... | 5 612 | -9.3 | ..... | 12 565 | -27.6 |
| Net change, all debts..... | ..... | 7 918 | -2.3 | ..... | 30 513 | -6.8 | ..... | 55 770 | -15.4 |

*No debt in the class at beginning of year.

TABLE 47.—ACTUAL AND PERCENTAGE CHANGES IN TOTAL DEBITS OF TENANTS AS REPORTED AT THE BEGINNING OF 1940, 1941, AND 1942

| Kind of debt | 1940 | | | 1941 | | | 1942 | | |
|--------------------------------------|----------|----------|----------------|----------|----------|----------------|----------|----------|----------------|
| | Increase | Decrease | Percent change | Increase | Decrease | Percent change | Increase | Decrease | Percent change |
| Long-term debts, total..... | ..... | \$226 | -4.2 | \$22 188 | ..... | +430.8 | \$4 885 | ..... | +97.7 |
| Federal Land Bank..... | ..... | ..... | ..... | ..... | ..... | ..... | 3 948 | ..... | ..... |
| Land Bank Commissioner..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 437 | ..... | ..... |
| Individuals..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Insurance companies..... | ..... | ..... | ..... | 5 000 | ..... | (*) | ..... | ..... | ..... |
| Commercial banks..... | ..... | 100 | -2.2 | 17 288 | \$ 100 | -2.3 | ..... | ..... | ..... |
| Other sources..... | ..... | 126 | -14.4 | ..... | \$ 305.1 | +2 305.1 | ..... | \$ 500 | -10.0 |
| Short-term loans, total | \$8 808 | ..... | +13.5 | ..... | \$ 207 | -2 | ..... | \$5 019 | -7.8 |
| Commercial banks..... | 1 602 | ..... | +9.7 | ..... | 9 419 | -34.8 | ..... | 1 877 | -14.3 |
| Farm Security Administration..... | 1 336 | ..... | +8.3 | ..... | 1 270 | -7.2 | ..... | 265 | -2.4 |
| Production Credit Association..... | 1 498 | ..... | +35.3 | \$ 2 249 | ..... | +27.8 | ..... | 4 136 | -65.4 |
| Individuals..... | 33 | ..... | +4 | ..... | 1 564 | -11.2 | ..... | 101 | -1.0 |
| Cattle dealers..... | 735 | ..... | +10.3 | 1 347 | ..... | +12.4 | \$7 497 | ..... | +284.5 |
| Landlords..... | 1 961 | ..... | +29.8 | 2 654 | ..... | +30.2 | ..... | 4 543 | -37.7 |
| Implement dealers..... | 1 659 | ..... | +44.9 | 1 429 | ..... | +30.8 | 383 | ..... | +8.3 |
| Finance companies..... | ..... | \$288 | -35.8 | 2 719 | ..... | +211.3 | ..... | 1 252 | -66.0 |
| Merchants..... | ..... | 458 | -35.2 | 1 966 | ..... | +212.1 | ..... | 283 | -13.7 |
| Other sources..... | ..... | ..... | +52.1 | ..... | 1 027 | -68.2 | 30 | ..... | +88.2 |
| Delinquent taxes..... | ..... | ..... | +53.9 | 116 | ..... | ..... | ..... | ..... | ..... |
| Interest in arrears..... | ..... | ..... | ..... | 543 | ..... | ..... | ..... | ..... | ..... |
| Principal in arrears..... | ..... | ..... | ..... | 50 | ..... | ..... | ..... | ..... | ..... |
| Summary..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Total long-term loans..... | ..... | \$226 | -4.2 | \$22 188 | ..... | +430.8 | \$4 885 | ..... | +97.7 |
| Total short-term loans..... | \$8 808 | ..... | +13.5 | ..... | \$ 207 | -2 | ..... | \$5 019 | -7.8 |
| Net change, all debts..... | 8 582 | ..... | +12.1 | 21 981 | ..... | +21.8 | ..... | 134 | -2 |

*No debt in the class at beginning of year.

The ending of the war will have two effects: first, young men will come from the army and industry and take over the operation of many of the farms now operated by older men; second, farm equipment will again become freely available. The result will be an increase in short-term debts created to finance working capital. At the same time, and until a serious break in prices occurs, purchases of land will continue. It is likely that the present owners will continue to liquidate their debts. This will be a period when beginning farmers should be cautious about their borrowings. It will probably pay to wait until price readjustments reduce the costs of starting to farm.

FACTORS INFLUENCING FARM EARNINGS

Records obtained from 113 dairy farms in 1942 were analyzed by using rate earned on investment and labor and management wage as measures of profit and relating them to:

1. **Size of farm** as measured by productive man work units, 590 being used as the dividing line between large and small farms.
2. **Milk production per cow** in terms of 3.5-percent milk, 7,500 pounds a year being used as the line between high and low production.
3. **Degree of specialization** as measured by percentage of gross receipts derived from the sale of dairy products, 65 percent being used as the line between the more specialized and the less specialized farms.

When Earnings Are Measured by Rate Earned

Influence of size of farm. The following averages were calculated showing rate earned on invested capital by various groups of farms:¹

| | <i>Number of farms</i> | <i>Rate earned perct.</i> |
|---|----------------------------|-------------------------------|
| Low production per cow, more specialized | | |
| Large farms | 6 | 8.4 ± 2.12 |
| Small farms | 16 | 9.2 ± 1.55 |
| Difference | | (-).8 ± 2.63 |
| High production per cow, more specialized | | |
| Large farms | 17 | 15.5 ± 1.34 |
| Small farms | 15 | 13.3 ± 2.04 |
| Difference | | 2.2 ± 2.44 |
| Low production per cow, less specialized | | |
| Large farms | 19 | 13.2 ± 1.38 |
| Small farms | 15 | 11.3 ± 2.04 |
| Difference | | 1.9 ± 2.46 |
| High production per cow, less specialized | | |
| Large farms | 15 | 16.3 ± 1.31 |
| Small farms | 10 | 20.1 ± 2.94 |
| Difference | | (-)3.8 ± 3.22 |

¹These and the following comparisons were arrived at by cross tabulation.

| | <i>Number of farms</i> | <i>Rate earned perct.</i> |
|-----------------|----------------------------|-------------------------------|
| All farms | | |
| Large..... | 57 | 14.19 ± .78 |
| Small..... | 56 | 12.79 ± 1.13 |
| Difference..... | | 1.40 ± 1.37 |

Altho the earnings of large farms were, on the average, \$1.40 higher per hundred dollars of invested capital than those of the small farms, this difference was not significant. Likewise when the large and small farms are subdivided into various groups on the basis of production and specialization there is seen to have been no significant differences between them in the rate earned. (Whether the differences between the averages are significant or not depends on whether the standard error of the difference between the two averages—the plus-or-minus (\pm) figure after each average difference—is more than half the actual difference between the averages.)

Influence of milk production per cow. The rates earned on invested capital by farms with high production per cow were found to exceed the rates earned by farms with low production per cow by the following differences (the actual values for any group are shown in the preceding tabular statement):

| | <i>Difference in rate earned</i> | | <i>Difference in rate earned</i> |
|------------------------|--------------------------------------|------------------------|--------------------------------------|
| More specialized farms | | Less specialized farms | |
| Small..... | 4.1% ± 2.6% | Small..... | 8.8% ± 3.6% |
| Large..... | 7.1% ± 2.5% | Large..... | 3.1% ± 1.9% |
| All farms..... | 4.9% ± 1.3% | | |

Production per cow was thus a significant factor in influencing the rate earned on invested capital. In each of the four subgroups the differences were relatively significant, but they were especially significant for the small, less specialized farms and the large, highly specialized farms.

Influence of degree of specialization. The earnings of farms less specialized in dairying (farms on which less than 65 percent of the total receipts came from the sale of dairy products) exceeded those highly specialized in dairying by the following amounts:

| | <i>Difference in rate earned</i> | | <i>Difference in rate earned</i> |
|------------------------|--------------------------------------|-------------------------|--------------------------------------|
| Low production per cow | | High production per cow | |
| Small farms..... | 2.1% ± 2.6% | Small farms..... | 6.8% ± 3.6% |
| Large farms..... | 4.8% ± 2.5% | Large farms..... | .8% ± 1.9% |
| All farms..... | 2.4% ± 1.38% | | |

The two groups where this factor appeared to be more significant were the large farms with low production and the small farms with

high production. The reason this would be true for the first group is fairly obvious. A large farm having low-producing cows needs diversity to build up income. But why the income of small farms with high-producing cows would be more influenced by diversity than small farms with low-producing cows is not so clear. Did these farms carry their efforts to get high milk production beyond the point of increasing unit costs?

The three following factors appeared to add the amounts indicated to the sums earned per one hundred dollars of invested capital: above average production per cow, \$4.90; less specialization in milk production, \$2.40; above average size, \$1.40. Size, however, did not appear to be associated in any significant way with income in any of the subgroups.

When Earnings Are Measured by Labor and Management Wage

Influence of size of farm. Size of farm had more effect on the labor and management wage derived from the farm as a whole than on rate earned on investment. In periods of good earnings this is usually true. This measure of income averaged \$1,436 higher on the farms that were above average in size than on those below average; it averaged \$1,365 higher on farms with above-average milk production per cow, and it averaged \$532 higher on farms that were less specialized in dairying than on those that were more specialized.

The differences in labor and management wage (farm basis) for large over small farms were as follows:

| | <i>Number of farms</i> | <i>Difference in labor and management wage</i> |
|---|----------------------------|--|
| Low production per cow, more specialized | | |
| Large farms | 6 | \$1 782 ± 724 |
| Small farms | 16 | 1 687 ± 326 |
| Difference | | \$ 95 ± 794 |
| High production per cow, more specialized | | |
| Large farms | 17 | \$4 519 ± 570 |
| Small farms | 15 | 2 477 ± 403 |
| Difference | | \$2 042 ± 698 |
| Low production per cow, less specialized | | |
| Large farms | 19 | \$3 512 ± 468 |
| Small farms | 15 | 1 992 ± 314 |
| Difference | | \$1 520 ± 564 |
| High production per cow, less specialized | | |
| Large farms | 15 | \$4 151 ± 414 |
| Small farms | 10 | 3 827 ± 664 |
| Difference | | \$ 324 ± 783 |
| All farms | | |
| Large | 57 | \$3 798 ± 281 |
| Small | 56 | 2 362 ± 222 |
| Difference | | \$1 436 ± 358 |

Size was apparently a significant factor in increasing labor income only on the less specialized farms with low production per cow and on the highly specialized farms with high production per cow. On the highly specialized farms with low production per cow, size made no significant difference in labor earnings; nor did it make any difference on the less specialized farms with high production per cow.

Influence of milk production per cow. The differences in the operator's labor and management wage on farms with high production per cow over those with low production were as follows:

| | <i>Difference in labor and management wage</i> | | <i>Difference in labor and management wage</i> |
|------------------------|--|------------------------|--|
| More specialized farms | | Less specialized farms | |
| Small..... | \$ 790 ± \$519 | Small..... | \$1 835 ± \$735 |
| Large..... | 2 737 ± 921 | Large..... | 639 ± 624 |
| | All farms..... | | \$1 365 ± \$360 |

High production per cow resulted in larger increases in labor earnings on the large, highly specialized dairy farms than on the small, highly specialized farms, and on the small, less specialized farms than on the large, less specialized farms.

Influence of degree of specialization. The operator's labor and management wage on farms having a low degree of specialization exceeded that on farms with a high degree of specialization by the following amounts:

| | <i>Difference in labor and management wage</i> | | <i>Difference in labor and management wage</i> |
|------------------------|--|-------------------------|--|
| Low production per cow | | High production per cow | |
| Small farms..... | \$ 305 ± \$453 | Small farms..... | \$1 350 ± \$777 |
| Large farms..... | 1 730 ± 862 | Large farms..... | - 368 ± 704 |
| | All farms..... | | \$552 ± \$382 |

The large farms with low production per cow and the small farms with high production per cow showed the greatest increases as a result of low specialization.

Small farms with low production per cow and high specialization had the lowest labor earnings. Large farms with high production per cow and with high specialization in milk sales had the highest labor earnings. Earnings of groups between these extremes were intermediate.

It will be noted that a difference of one favorable factor did not cause a significant difference in labor income. Likewise, when two factors were favorable, the addition of the third factor did not cause a significant change in earnings.

TABLE 48.—COMPARATIVE SOURCES OF INCOME ON 54 HIGHLY SPECIALIZED DAIRY FARMS AND 59 LESS SPECIALIZED DAIRY FARMS, 1942

| Source of income | Highly specialized dairy farms (54) | | Less specialized dairy farms (59) | |
|--------------------------|-------------------------------------|---------------|-----------------------------------|---------------|
| | | <i>perct.</i> | | <i>perct.</i> |
| Cash receipts from sales | | | | |
| Dairy products..... | \$4 753 | 74.7 | \$3 763 | 51.5 |
| Dairy cattle..... | 681 | 10.7 | 990 | 13.6 |
| Beef cattle..... | 0 | 0 | 14 | .2 |
| Hogs..... | 251 | 3.9 | 1 037 | 14.2 |
| Sheep..... | 3 | (*) | 29 | .4 |
| Poultry..... | 45 | .7 | 82 | 1.1 |
| Eggs..... | 133 | 2.1 | 268 | 3.7 |
| Feed and grain..... | 169 | 2.7 | 485 | 6.6 |
| AAA receipts..... | 200 | 3.1 | 254 | 3.5 |
| Labor off farm..... | 5 | .1 | 35 | .5 |
| Other..... | 125 | 2.0 | 347 | 4.7 |
| Total..... | \$6 365 | 100 | \$7 304 | 100 |

*Less than .05 percent.

The less specialized dairy farms showed considerably lower receipts from the sale of dairy products and considerably higher receipts from the sale of hogs, feed and grain, dairy cattle, and miscellaneous sources of income than did the more specialized dairy farms (Table 48). The less specialized farms had \$939 larger total receipts—\$990 less from the sale of dairy products but \$1,929 more from other sources.

METHODS OF SELECTING SAMPLE AND COLLECTING DATA

The farms and operators included in this study were selected in as unbiased and representative manner as was felt to be practical. Every tenth name was selected from the listing sheets of the farms in the county prepared by the Agricultural Adjustment Agency. The townships were selected in alphabetical order. In the first township the names of the operators opposite all numbers ending in one (1, 11, 21, etc.) were taken; in the second township, all names of operators opposite numbers ending in two (2, 12, 22, etc.) were taken, and so on.

In 1940 owing to bad weather and lack of time, records in four townships in the western part of the county were incomplete, no records in one township, and records in only parts of the others being obtained. In 1941, however, it was possible to cover the entire county and to get in touch with all the farmers who had cooperated in 1940. The 1941 survey, therefore, provided the most complete coverage of the county.

In 1942 each cooperator of the previous year was contacted. Changes in locations of operators and refusal of some cooperators, particularly

those who had small debts, to again cooperate reduced the number included in the study and made the data somewhat less representative than those for the previous year.

The enumerator filled out a survey form with information which the farmer supplied on the basis of estimates or of records. When an operator's record concerning receipts from the sale of milk was incomplete, the enumerator obtained information from the dealer who bought the milk. When an operator's record of his debts was incomplete, some information was obtained from the lenders.

Four circumstances connected with the selection of farms may have affected the representativeness of this study: (1) Very small farms located close to the several cities and villages in the county were omitted because the operators of these farms were reluctant to cooperate. (2) All farms on the selected list which were operated by hired managers and absentee owners were omitted. (3) Because of inclement weather in 1940-41, the west half of Chenung, Dunham, and Marengo townships, as well as all of Riley township (these four constituting the western tier of townships in the county), was not surveyed. (4) The fact that some cooperators moved during the period covered and some refused to give information for the second or third year may have detracted from the representative character of the sample. Nevertheless it is believed that the data presented here represent a typical group of farms and farmers.

Comparisons with U. S. Census data. In order to ascertain how representative the sample was of all farms in McHenry county, some of the data collected in this study were compared with 1940 U.S. Census data (Table 49). Except for the part-owner group, the percent of farms in each tenure group did not vary greatly in the sample from that shown by the Census.

TABLE 49.—COMPARISON OF ITEMS AS REPORTED IN 1940 U. S. CENSUS OF AGRICULTURE* AND IN THIS STUDY: MCHENRY COUNTY, ILLINOIS, 1940

| Item | Owners | | Part owners | | Tenants | | All farms | |
|---|---------|------------|-------------|------------|---------|------------|-----------|------------|
| | Census | This study | Census | This study | Census | This study | Census | This study |
| Percent of operators in tenure class..... | 40.7 | 37.1 | 6.3 | 12.0 | 49.3 | 50.8 | .... | .... |
| Acres per farm..... | 105.1 | 138.0 | 190.9 | 201.0 | 150.2 | 161.0 | 138.0 | 158.0 |
| Value of land and buildings per acre..... | \$ 112 | \$ 120 | .... | .... | .... | .... | .... | .... |
| Value of machinery and implements per farm..... | \$1 060 | \$1 817 | \$1 736 | \$2 361 | \$1 251 | \$1 764 | \$1 180 | \$1 856 |

*Sixteenth U. S. Census, 1940.

The average acreage per farm in the sample was somewhat larger than the average in the Census, particularly for owner-operated farms. This larger size is partially explained by the omission from the sample of various small farms around urban centers—farms which were enumerated in the Census.

While the value of land and buildings per acre for owner farms did not differ greatly between the two groups, the value of machinery and equipment averaged significantly higher in the surveyed sample than in the Census farms. This higher average value of machinery and equipment reflects the larger size of the farm and may possibly also indicate a more accurate reporting of this item.

The percentages of tenants classified by kind of lease did not differ greatly between the Census enumeration and this study. The comparative figures were:

| | <i>Census, perct.</i> | <i>This study, perct.</i> |
|------------------------------|---------------------------|-------------------------------|
| Cash lease only | 63.7 | 60.3 |
| Cash and share lease..... | 2.6 | 3.2 |
| Share lease only..... | 28.2 | 36.5 |
| Total land under lease | 57.4 | 59.5 |

GENERAL SUMMARY

The financial positions and operations of a group of representative farmers in McHenry county, Illinois, was studied in 1940-1942 inclusive by the survey method. These farms are typical of dairy farms in northern Illinois.

Farms operated by part-time operators and by absentee owners with hired managers were omitted from the study. One hundred twenty-two farmers were included in 1940, 146 in 1941, and 118 in 1942. Seventy-two farmers had kept continuous records on the same farm for all three years. The findings of this study were briefly as follows:

Capital position of operators. At the beginning of 1941 the average assets of operators who owned their farms were \$24,670. The assets of part owners were \$24,635; of cash and crop-share tenants, \$7,780; of livestock-share tenants owning half their cows, \$5,093; of livestock-share tenants owning less than half their cows, \$5,137.

During the same year owners and part owners owned land and improvements worth \$15,961 and had current farm assets of \$6,727. The three largest items of working capital were: dairy cattle, \$2,251; machinery and equipment, \$1,943; and feed and feed and grain, \$1,656. The tenants had average working capital of \$5,548, largely invested in the three items just mentioned.

While about four-fifths of the operators of the farms included in this study were using some borrowed funds during 1940-1942 in connection with their farm businesses, the entire group of operators owned a high proportion of their capital outright. On December 31, 1941, livestock-share tenants owning less than half the cows had equities of 93 percent in their farm businesses; cash tenants had equities of 79 percent; full owners, 78 percent; livestock-share tenants owning cows on a 50-50 basis with landlords, 75 percent; part owners, 68 percent.

Financial progress. The period from 1940 to 1942 was one of capital accumulation. In each year the farmers in each tenure class added to the farming assets invested in their businesses. Increases in assets on owner- and tenant-operated farms were about equal, on the average. The tenants expanded their debts in 1940 and 1941 and reduced them only moderately in 1942, while the owners were reducing their debts thruout the period.

Owners' increases in net worth, including apparent changes in cash, were larger than tenants' increases, but on a percentage basis the tenants increased their net worth much more rapidly. At the prevailing rate of return on capital, it obviously paid these tenants in this period to expand their assets by further borrowing.

In the combined owner and part-owner group, the more heavily indebted farmers tended to operate the larger businesses. The reverse was true among the tenants. The more heavily indebted owners made more rapid financial progress, both in accumulating assets and in paying debts than did the less heavily indebted group. This rapid financial progress by the more heavily indebted owners partly reflects their larger volume of business. The relationship was not so clear-cut for the tenants, but those with debt ratios of 40 percent and over increased their net worth by an average of one-third to one-half in each of the three years.

The larger the farm business, the greater the financial progress made in this period.

Three-year continuous records. When the records kept by 72 farmers for three consecutive years on the same farms were studied, the same general tendencies were found in the capital position of operators and in cash income and expense patterns as were indicated by the complete samples. The principal change in the physical size of the business of these farms between 1940 and 1942 was an increase of 20 acres in the farms operated by part owners and of 9 acres in those operated by cash tenants, and a general increase in the number of dairy cows on all classes of farms. No general increase occurred in the num-

ber of hogs or poultry, the expansion being in milk, the principal product of the area, even tho the price of milk had not increased as much as the price of hogs. Most of the increase in the value of assets resulted from higher valuations of livestock and of feed and grain.

Cash income and expense patterns. Two-thirds to three-fourths of the income on the farms studied came from the sale of milk and livestock, chiefly dairy cattle. Crop sales were not important.

Net new borrowings during the year (borrowings less repayments on new loans) indicate the extent to which these operators depended on current borrowings for working capital. Expressed as a percentage of current receipts, net new borrowings during each of these three years averaged for owners 3.7 to 6.9 percent; for part owners, 2.4 to 8.4 percent; for cash tenants, 9.4 to 17.1 percent; for livestock-share tenants, 7.1 to 13.7 percent. Such borrowing declined in importance during the period.

The most important expenses were those for current farm operations and for family living. The purchase of capital items other than livestock made up from one-sixth to one-third of the total expense in the various tenure groups. Livestock purchases varied from 3 percent to 16 percent of total expenses in the different groups. Payment of interest represented from 5 to 7 percent of the expenses of owners and part owners but from less than 1 percent to 3 percent of the expenses of tenants.

There appeared to be an increase in the cash resources of these operators over the period; in 1940, a rather small increase; in 1942, an increase of considerable magnitude, particularly among the owners and part owners.

The income and expenditure patterns were not greatly affected by the ratio of debt to property.

Possibilities of buying farms from earnings. The amount of accumulated cash that could have been used for farm expansion (purchase of land and improvements) increased more than proportionally for both owners and tenants as the size of the farm increased. Continued over a series of years, the net earnings of the average operator of a large farm during this three-year period would enable him to pay for a farm the size he was operating much more quickly than the earnings of the operator of a small farm would enable him to pay for one the size he was operating.

Some characteristics of these farms and their operators. The tenants operated larger farms than the owners and operated them with somewhat less labor. They obtained lower production per cow and lower

crop yields, maintained more heavily stocked farms, bought a larger percentage of their cows, and were on the average five years younger than the owners. Share tenants operated larger and more heavily stocked farms than cash tenants.

On owner farms the percentage of crop acres in soil-depleting crops showed no relation to debt ratio. The high-debt tenants had smaller herds and in general lower-producing cows than the low-debt tenants. They also bought a larger percentage of their cows, thus keeping more of their limited capital in income-producing assets. Among tenants, the younger operators, on the average, had the higher debt ratios.

The owners of small farms operated farms more heavily stocked, purchased more of their cows, and in two out of three years had lower production per cow than the owners of large farms. The larger tenant farms had higher production per cow than the smaller farms, and in 1941 and 1942 were more heavily stocked. The ages of the tenants were not correlated with the size of their farms, but among owners the smaller farms were operated by the older men.

Milk production. On the 72 farms for which records were available for all three years the average production of milk increased about 10.7 percent in 1941 over 1940, and about 1.9 percent in 1942 over 1941. In general, the larger and more heavily indebted farms increased production by larger amounts in response to wartime demands than did the smaller and more lightly indebted farms.

Farm earnings. These farms were profitable in 1942. Those operated by owners and part owners showed earnings of 13.6 percent on total capital; the tenant-operated farms showed 13.8 percent. Labor and management wages averaged about \$3,000 per farm. The highest earnings were in the group in which the landlord furnished more than half the cows; in this group the rate earned was 19.1 percent and the farm labor and management wage was \$5,473. This was an outstanding group of farms, to which the landlords apparently gave close supervision. The operator's labor and management wage on these farms averaged \$3,264.

On the tenant-operated farms the rate earned on the tenant's capital averaged 33.4 percent; his labor and management wage averaged \$2,602. The rate earned on the landlord's capital was 11.4 percent on share-rented farms, 3.5 percent on cash-rented farms, and 4 percent on part-owner farms. These percentages illustrate the tendency of returns to landlords who rent for cash to lag when prices rise.

Kinds of credit and how used. The amount of long-term debts owed by these farmers was about three times as large as the amount

of short-term debts. Short-term debts were secured chiefly by personal notes and chattel mortgages. The principal long-term creditors were the Federal Land Bank, the Land Bank Commissioner, insurance companies, and individuals. The principal short-term creditors were commercial banks, individuals, the Production Credit Association, and the Farm Security administration. During the period of the study, individuals became less important as sources of short-term loans.

New long-term borrowings of owners were chiefly for refinancing; those of tenants were chiefly for buying land. Short-term borrowings of owners were for current operations, farm equipment, dairy cattle, and automobiles and trucks; those of tenants were for the first three purposes—current operations and the purchase of farm equipment and dairy cattle.

Owners were reducing their debts in this period, and tenants were increasing theirs until 1942, when they also reduced their short-term debts. However, borrowing to buy land offset reduction in short-term debts and kept the total debts of tenants about static. It is likely that for the duration of the war new credits in this area will be used increasingly for the purchase of land and for machinery and equipment when these items become available in larger quantities.

FINDINGS IN BRIEF

Credit was widely used in 1940-1942 by this group of McHenry county farmers, and apparently it was readily available.

All tenure groups—owners, part owners, and tenants—were increasing their assets during this period; and owners were cutting down their debts. By 1942 tenants also were tending to reduce their debts, and all groups were adding to their holdings of cash.

The owners of the larger farms were somewhat more heavily in debt during this period, but they were making more rapid financial progress than the owners of the smaller farms.

The more heavily indebted tenants operated smaller businesses than the less heavily indebted tenants, but they were younger men and made considerable financial progress.

In this period of rising incomes it paid these farmers to operate on the largest possible scale and to borrow, if necessary, to get the needed capital. Expansion in the farm business was largely accomplished by milking more cows and increasing the production per cow.

By 1941 a few tenants were beginning to put cash earnings into the purchase of land.

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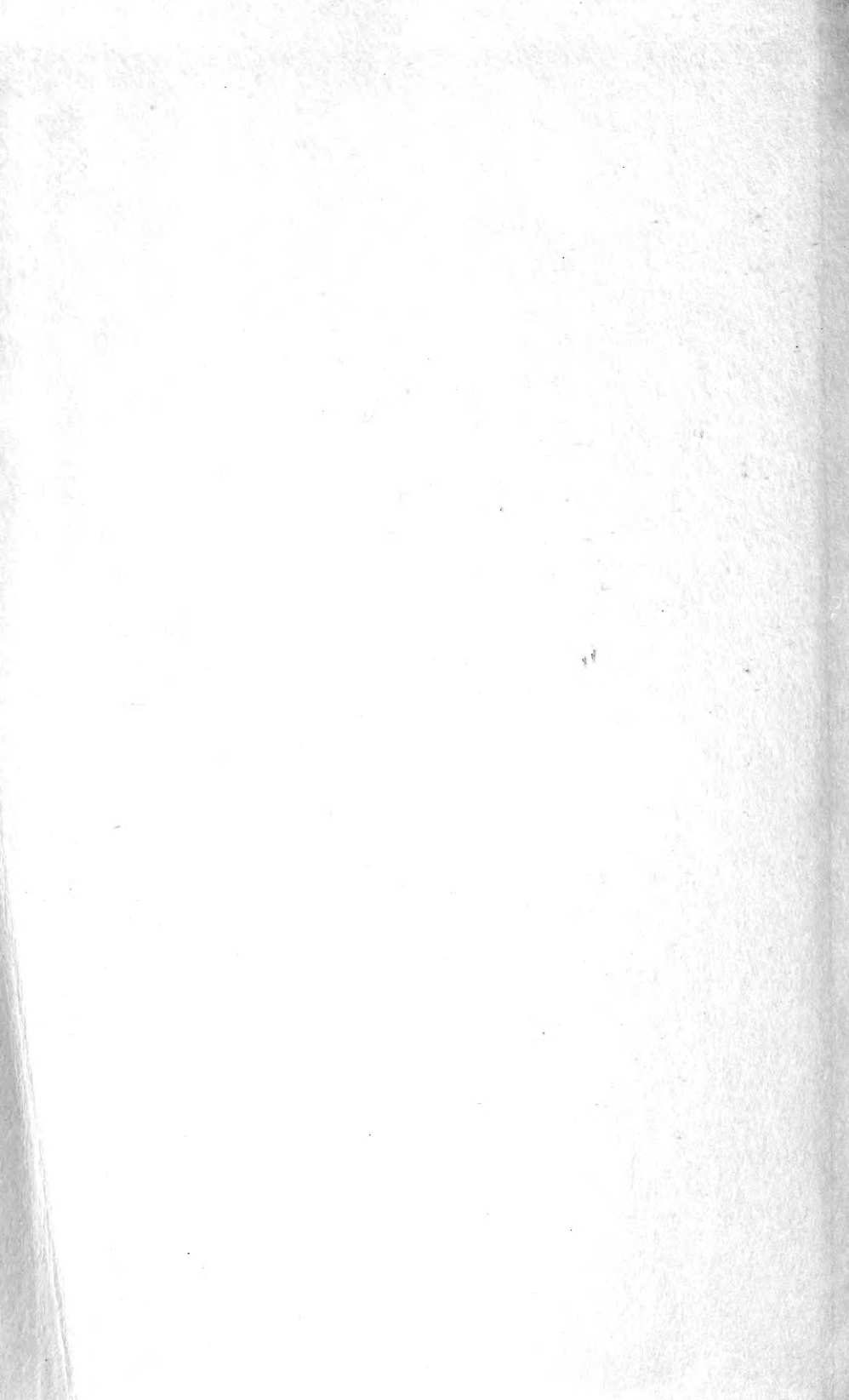
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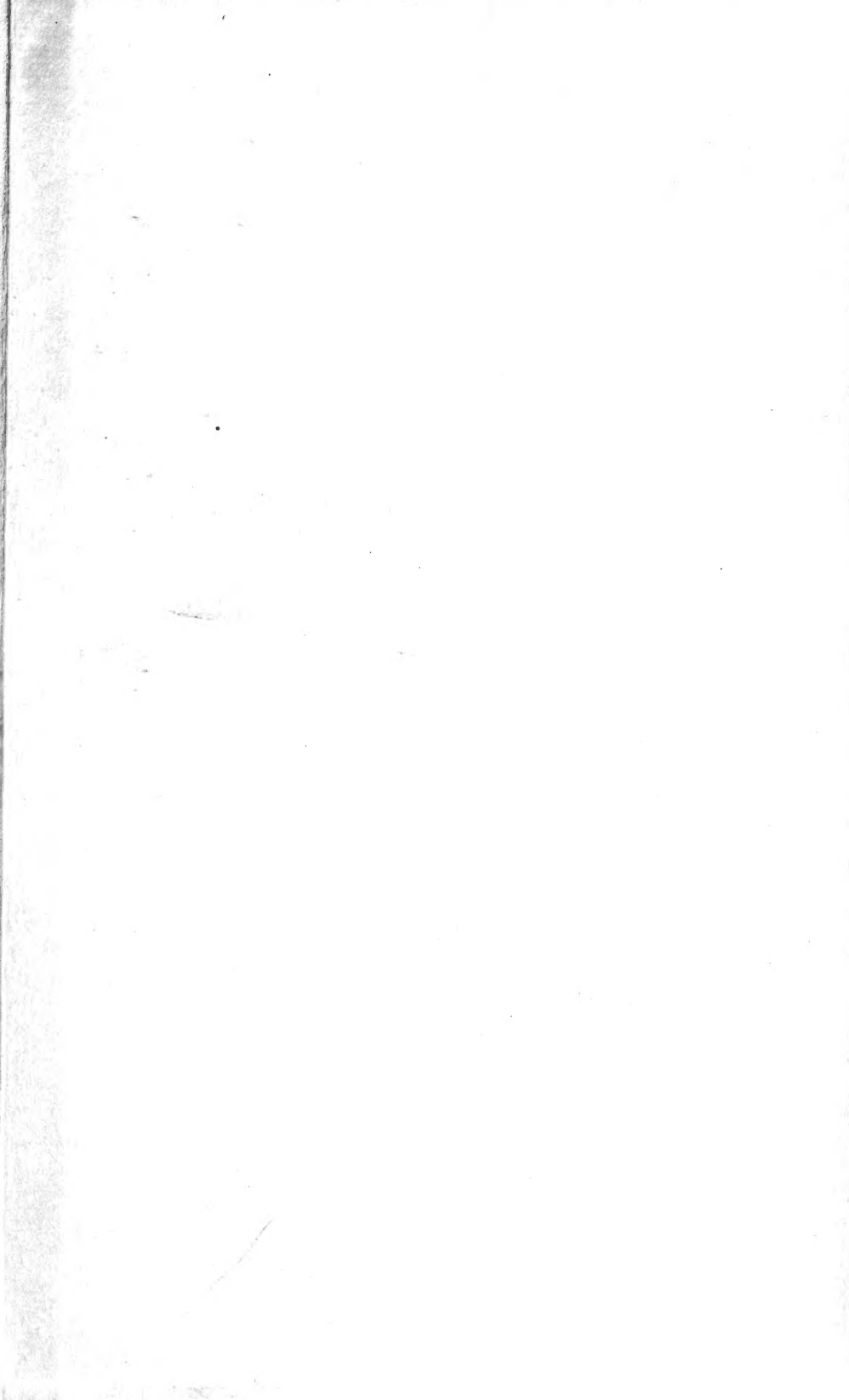
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