



# BUSINESS CONDITIONS

A REVIEW BY THE FEDERAL RESERVE BANK OF CHICAGO

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# Farm Tenancy

## Owner-Operators Increase, Tenant-Operators Decline

Over one-third of all farmers of the Seventh Federal Reserve District states had been on their farms less than five years, according to the 1945 Census of Agriculture. One-tenth of the farm families had operated their farms less than one year and an additional one-fourth from one to four years. Five to nine years tenure was reported by one-sixth of the farmers, and 45 per cent had occupied their present farms for 10 years or longer. Average tenure for all farmers in the five-state area was 14 years, the same as reported by the 1940 census.

Farming involves, for the most part, long-run or continuous processes. Generally, it has been considered necessary that farm operators have relatively long tenure of farm land if the land is to be utilized so as to make the greatest contribution to the supply of agricultural products over an extended period of time. At the same time, it is recognized that some shifting of operators between farms must continue if farm land is to be operated at any given time by those farmers qualified to use it to best advantage. This problem of obtaining the most desirable tenure of farm land has received much attention. Generally, it has been concluded that the "family-size" owner-operated farm was the most desirable solution, although the necessity of having this type of tenure in order to secure the optimum utilization of agricultural land has been questioned occasionally. Tenancy is commonly thought to develop in older agricultural areas. However, it has been common in new areas also.

The 1880 Census, the first to report the proportion of farms operated by tenants, revealed that 26 per cent of United States farms were operated by tenants at that early date. Twenty-four per cent of Iowa and Indiana farms and 31 per cent of Illinois farms were tenant-operated in 1880. The proportion of United States farms operated by tenants increased until 1930, held about steady to 1935, then declined to 1945 (see Table 1).

Tenancy in Seventh District states followed a pattern similar to that for the United States as a whole but continued to increase to 1935 in Iowa and Illinois and to 1940 in Wisconsin before declining quite sharply. Michigan and Indiana showed some decline from 1920 to 1930 in the per cent of farms operated by tenants, an increase from 1930 to 1935, and a decline during the succeeding decade. The percentage of farms operated by tenants in 1945 was the lowest reported by any Census since 1890 for both the United States and Illinois; since 1880 for Michigan; since 1920 for Iowa; since 1930 for Wisconsin; and the lowest of record for Indiana.

Some of the shift during recent years toward a higher proportion of owner-operated farms resulted from the increased number of very small farms, many of which are used as part-time farms and rural residences by people who have income from sources other than operating the farm.

In Illinois, Indiana, and Iowa, the decline in proportion of tenant-operated farms from 1930 to 1945 was relatively greater for farms under 50 acres in size than for larger units. For Michigan and Wisconsin, states with low percentages of tenancy, the relative decline from 1930 to 1945 was greatest for farms of 175 acres and over. Farms under 50 acres in size in the Seventh District states are more commonly owned by the people operating them than the larger farms, except for the very large farms (1,000 acres and over) which are usually operated by the owners (see Table 2).

The increase in owner-operated farms has been facilitated during the past decade by an upward trend in farm product prices, farm incomes, and temporarily lagging costs. Farm real estate values increased less rapidly than net farm incomes. This permitted many former tenants to acquire title to the land they operate. Also, it enabled some owner-operators to enlarge their holdings, thereby reducing the number of tenant-operated farms.

Farmers who owned all the land they farmed accounted for 57 per cent of all farm operators in the Seventh District states in 1945. An additional 14 per cent were classified as part-owners. These owned part of the land they farmed and rented additional acreage. Tenants operated 28 per cent of the farms, and about one per cent were operated by hired managers. Tenants were most common in Iowa where they accounted for 42 per cent of the farm operators. In Michigan tenancy was very low, only 12 per cent of the operators being tenants, 72 per cent full-owners, and 15 per cent part-owners.

### TENANCY HIGH IN CASH CROP AREAS

Historically, the percentage of all farms that are tenant-operated has been relatively high in areas where the major

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TABLE 1  
TENANT FARMERS AS PER CENT OF ALL FARMERS,  
UNITED STATES AND SEVENTH DISTRICT STATES  
1880-1945

Year	United States	Illinois	Indiana	Iowa	Michigan	Wisconsin
1880	25.6	31.4	23.7	23.8	10.0	9.1
1890	28.4	34.0	25.4	28.1	14.0	11.4
1900	35.3	39.3	28.6	34.9	15.8	13.5
1910	37.0	41.4	30.0	37.8	15.8	13.9
1920	38.1	42.7	32.0	41.7	17.7	14.4
1930	42.4	43.1	30.1	47.3	15.5	18.2
1935	42.1	44.5	31.6	49.5	19.0	20.6
1940	38.7	43.1	28.2	47.6	17.0	22.9
1945	32.3	38.8	22.7	42.2	11.7	20.5

SOURCE: United States Bureau of the Census.

# Financial Developments in Meat Packing

## *Earnings and Working Capital Continue to Improve*

The meat packing industry and virtually all of its widely varying component companies, already in probably their strongest peacetime economic and financial position at the end of 1945,<sup>1</sup> have made further substantial progress in 1946-47. Sustained very high levels of physical production and a sharp, though fluctuating, upward price trend since the middle of 1946 (see Chart 1) have resulted in new all-time highs in dollar sales volume.

The industry faces 1948 with continued record short-run demand for meat. Sales and earnings<sup>2</sup> prospects remain strong but are largely dependent on price and production trends. Meat production for 1948 has been estimated from five to 10 per cent below that of 1947, a level, however, still high by all prewar standards. Marked downward variations from this estimate are not likely since meat animals, once brought into existence, cannot be held on farms beyond fairly well defined time limits. Insofar as the "meatless Tuesday" program is effective in lowering the demand for meat, it may stabilize meat prices and reduce the profitability of converting grain (feed) into meat. Present conditions, however, already encourage farmers to market meat animals sooner and at lighter weights, thereby reducing eventual total meat supplies but increasing the volume of slaughter in the short-run.

With a high minimum physical supply of livestock and a resulting large physical volume of meat and other packing house products reasonably well established for the next year, prices will be the most important variable influencing total dollar sales and profitability of meat packing operations in 1948. Except for a possible seasonal decline, meat and meat product prices now show no perceptible signs of weakening.

Prices may be expected to hold firm as long as consumer income remains high in the United States. Rising, and to a large extent inflexible, costs, however, promise to bring a pronounced change in earnings prospects whenever prices undergo a marked decline.

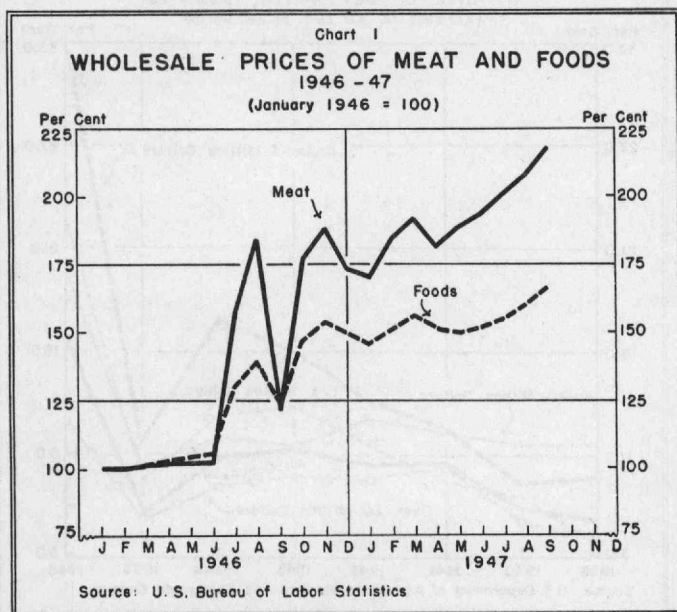
### RECENT FINANCIAL TRENDS

During 1946, the last year for which complete data are available, meat packing earnings averaged 15.8 per cent of net worth, almost triple the level of the preceding year. Earnings increases were general throughout the industry but were particularly marked for *very small* and *small* packers (see Chart 2).<sup>3</sup>

In addition to high-level production and rising prices after decontrol on October 15, companies in all size groups benefited from: (1) elimination of excess profits taxes and reduced corporation income taxes after January 1, 1946, (2) stepped-up subsidies in the first half of the year, and (3) decreased proportions of meats diverted to the Government at comparatively low profit margins. Such factors were more than sufficient to offset rising raw material and labor costs and the end of subsidies.

Several of the major packers have publicly stated that an important part of their 1946 earnings resulted from production and sale of non-meat products. Many of these products—including hides and skins, animal feeds, soap, fertilizer, sporting goods, and dairy and poultry products—have exhibited price strength through 1947 to date and like meat remain in strong demand.

Working capital in the meat packing industry increased approximately six per cent during 1946. Current liabilities rose about 30 per cent, and current assets, which are three times greater in amount than current liabilities, increased about 13 per cent. Because of the shortage of livestock being marketed at the end of the 1946 fiscal year, inventories fell



<sup>1</sup>See "Financial Trends in Meat Packing," *Business Conditions*, November 1946.

<sup>2</sup>Earnings are net after taxes in per cent of net worth throughout this study unless otherwise indicated.

<sup>3</sup>In terms of 1941 assets, the size groups used in this study are: *very small*, under one million dollars; *small*, one to five million; *medium*, five to 35 million; and *large*, 35 million and over. In the November 1946 article referred to previously, these size groups were designated successively as *small*, *medium*, *large*, and *very large*.

This article summarizes a more comprehensive study entitled *A Financial and Economic Survey of the Meat Packing Industry, 1947 Supplement*, currently being prepared for publication. Conclusions are based largely upon earnings data released by the Packers and Stockyards Division of the U. S. Department of Agriculture and financial-operating data compiled from statements furnished by the Robert Morris Associates (RMA) and from published sources.

Copies of the supplement will be available in a few weeks and may be obtained on request to the Research Department, Federal Reserve Bank of Chicago, Box 834, Chicago 90, Illinois.

in physical terms from the corresponding 1945 level, but as the result of price rises increased 25 per cent dollar-wise (see Chart 3).

Meat packers have never forgotten their post-World War I experience when, because of large inventories, they were particularly hard hit by price declines. Recent figures on physical cold storage holdings indicate that inventories in the hands of meat packers are now considerably below prewar average levels. Most large firms also have set up accounting reserves for possible inventory losses. These packers account for the preponderance of inventories in the industry not only in absolute size but also in that they tend to have from two to three times as many days' sales tied up in inventories as the smaller packers. The industry as a whole is therefore much better prepared now for price declines than it was after World War I. It is everywhere conceded, nevertheless, that an abrupt downturn in meat prices could bring substantial losses to the industry.

Among current liabilities, accrued income taxes rose significantly, and notes payable declined sharply. *Large* meat packers alone reduced their notes payable, including bank loans, over 20 million dollars. The only important deviations from the foregoing financial trends for the industry in 1946 occurred among the *large* companies which decreased their cash and security holdings and the *medium* companies which experienced marked increases in notes payable and long-term debt.

During 1946 the meat packing industry made only nominal *net* additions to fixed plant and equipment. This reflects the continued general belief of industry leaders that their over-all manufacturing capacity, not seriously strained since early 1944, will remain adequate for some time to come. Where substantial increases in plant occurred, particularly among *medium* packers, they resulted largely from purchases of already existing facilities rather than construction of new ones.

#### COMPARISONS WITH OTHER MANUFACTURES

Under the favorable conditions outlined above, meat packing made significant relative progress among all manufactures in 1946. Earnings of major packers reporting to the National City Bank of New York doubled in 1946 over 1945 compared with corresponding rises of 75 and 33 per cent, respectively, for leading food and all manufacturing corporations. Meat packing, however, retained its traditional position as a low-earnings industry. Only 11 of the 45 industries in the National City Bank compilation had smaller returns than the 10.8 per cent realized in 1946 by the major meat packers.<sup>4</sup> In the same year leading corporations in the food group averaged 19.1 per cent and in all manufacturing 12.1 per cent.

The meat packing industry utilized its sharply increased earnings in 1946 to expand working capital, reduce long-term liabilities, and pay higher dividends. Current assets and current liabilities both showed marked rises for all sizes of meat packing companies and for *small* and *medium* size

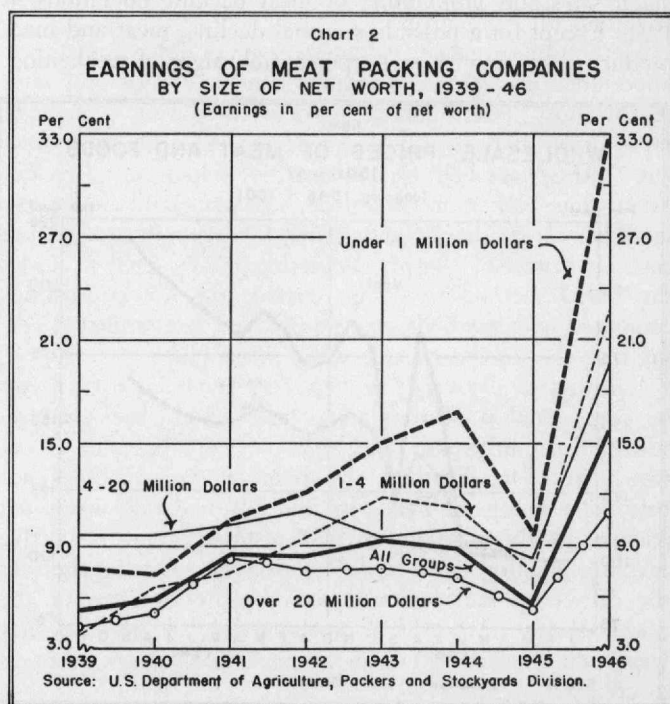
<sup>4</sup>This figure is lower than the 15.8 per cent in the Packers and Stockyards sample which includes smaller packers omitted here. The smaller packers had higher earnings in 1946 than the larger packers.

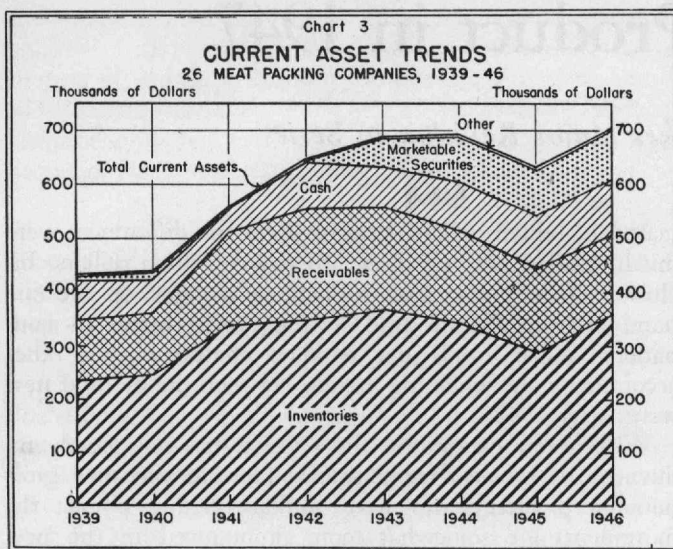
companies in manufacturing as a whole. *Large* corporations in all manufacturing, however, improved their working capital in 1946 mainly as the result of a decline in current liabilities, current assets remaining relatively constant. In meat packing the major rise in current liabilities occurred in Federal income taxes, the direct result of increased earnings.

Meat packing was one of the few manufacturing industries which achieved an improved liquid position in 1946, cash and marketable securities rising over five per cent. For manufacturing as a whole, these two items combined fell over 16 per cent. In spite of a rise of more than one quarter in the dollar volume of inventories in manufacturing and meat packing, inventories for both groups still remained below prewar levels relative to sales. Plant and equipment expenditures reached unprecedented levels throughout American business in 1946 but, as already indicated, were of minor importance in the meat packing industry.

#### EARNINGS PATTERNS

The more than 600 slaughtering meat packers which report annually to the Packers and Stockyards Division had average earnings of 15.8 per cent in 1946. This is considerably in excess of the 1943 wartime peak of 9.2 per cent and is double the already relatively high level of the 1939-45 period. During 1946 *very small* meat packers experienced the highest average earnings and greatest relative earnings gains over the level of the preceding year, being followed successively in both respects by the *small*, *medium*, and *large* companies. With the exception of an interchange of positions by the *small* and *medium* packers, these earnings relationships were similar to those existing in 1945 and throughout most of the earlier war years (see Chart 2).





A notable development in 1946 was the increased spread which took place between earnings of *very small*, *small*, and *medium* companies on the one hand and those of *large* companies on the other. This increased spread, in part at least, was the result of certain factors working to the relative advantage of the smaller size groups, namely: (1) somewhat greater tendency toward specialized operations, particularly among the *very small* and *small* groups, combined with high production and sales, (2) more advantageously located packing facilities with respect to sources of supply, and (3) of particular importance, greater flexibility in adjusting themselves to the extremely unsettled price conditions which prevailed throughout much of the year. An indication of this greater flexibility is the ability of companies in the smaller size groups to maintain a more rapid inventory turnover and at the same time to build up inventories at a considerably faster (more than double) rate than the "Big Five."

Method of inventory valuation is an additional factor of importance in explaining relative earnings levels and rates of inventory accumulation, particularly during periods of rapid price changes. The *large* packers use the last-in-first-out (LIFO) method of inventory valuation to a greater extent than packers in the smaller size groups; the latter rely more heavily on the methods of market less estimated selling cost. In a year of sharply increasing prices, such as 1946, the LIFO method results in considerably lower earnings compared with methods based on market less estimated selling cost; the converse is true when prices fall.

Earnings of the *very small* packers benefited particularly by the operation of the factors mentioned above and resulted in the unusually high figure of 32.8 per cent of net worth in 1946. Further, the nominal prewar difference between earnings of Federally and non-Federally inspected packers in this size group was restored, their respective earnings equaling 31.4 and 34.1 per cent. During the war the difference had widened considerably in favor of the non-Federally inspected companies, largely because they were permitted to sell high proportions of their products to civilians.

Beef production hit an all-time high in 1946. Pork and lamb production, although still above 1937-41 levels, receded somewhat from their wartime peaks. The percentage decline was much greater for lamb than pork. Earnings of the several groups of specialized packers in 1946 followed the same pattern as relative production trends among product types. *Very small* beef packers led, 58.2 per cent, followed by *very small* pork packers, 35.2 and 38 per cent, with *very small* lamb packers at the bottom, 28.1 per cent.

In 1946 meat packing earnings in relation to sales followed patterns similar to those of earnings in relation to net worth. For the industry as a whole earnings equaled 2.3 per cent of sales, considerably above the wartime peak of 1.6 per cent and double the 1939 level. *Small* packers had the highest, 3.2 per cent, and *large* packers the least, 1.9 per cent, returns. *Medium* packers, however, showed the greatest relative increase, rising from .6 per cent in 1945 to 2.9 per cent in 1946. These percentages, although high for meat packing, are low compared with other industries. This difference is attributable to the fact that meat packing is characterized by extremely rapid inventory turnover and consequently has a high proportional sales volume for each dollar of employed assets.

#### OTHER FINANCIAL TRENDS<sup>5</sup>

With price rises more than offsetting a decline in the physical volume of production, dollar sales of the meat packing industry in 1946 were over 15 per cent higher than in the previous year. Sales increases of the *small* and *medium* companies were considerably greater than the industry average. The *large* companies alone ran counter to the industry trend, their sales falling about 1.5 per cent.

Increased earnings permitted companies in all size groups to enlarge dividends and improve their working capital position. This was particularly noticeable among *small* and *medium* companies, their working capital rising 37 and 18 per cent, respectively, compared with 3 per cent for *large* companies. *Small* and *medium* companies also became more liquid. Cash and marketable securities advanced 38 and 20 per cent, respectively, and receivables, although up substantially in absolute terms, remained virtually unchanged in relation to sales. *Large* companies experienced a slight decline in cash and marketable securities combined, as well as in receivables.

During World War II meat packers utilized their assets much more intensively than they had in 1939. Sales per dollar of current assets experienced a wartime increase of more than 30 per cent but fell almost 10 per cent in 1946. Companies in all size groups followed this industry pattern. Sales per dollar of fixed assets, up more than 125 per cent between 1939 and 1945, leveled off in 1946. This was the result of conflicting movements within the industry, the *large* companies showing a decrease and the *small* and *medium* continued increases. Trends in sales per dollar of total assets followed those of sales per dollar of current assets.

<sup>5</sup>This discussion excludes the *very small* packer group.

# Gross National Product in 1947

*Department of Commerce Makes Major Revision in Series*

Gross national product, it now appears, will reach a new record of over 228 billion dollars in 1947, more than 12 per cent above the 1946 level and seven per cent higher than the previous peak of 213 billion reached in 1945. Major support for the sharp increase in 1947 over 1946 came from steadily rising consumer expenditures for services and nondurable goods. In addition net exports have made a substantial contribution, particularly during the first half of the year. Government expenditures, which played so large a part in 1945, fell moderately in 1947.

With consumer expenditures for nondurable goods and services leveling off, further increases in gross national product, aside from general inflationary pressures, are likely to be largely dependent upon producer and consumer expenditures for durable goods. Such expenditures lagged during much of 1946 because of reconversion difficulties and, in the case of producer capital formation, because of Government controls on construction.

The effects of postwar inflation to date on the gross national product have been considerable. A rough measure may be indicated by recasting the 1947 total of 228 billion dollars into prewar (1939) prices. Using cost of living (i.e., U. S. Bureau of Labor Statistics index of consumer prices) as the correction factor, current gross national product equals 144 billion 1939 dollars. Thus, although in value terms gross national product is now 152 per cent above the 1939 level, the corresponding increase in physical terms is only about 59 per cent. In short, more than three-fifths of the gain in gross product during the past eight years is directly attributable to price advances.

These comparisons are based upon gross national product figures which have been adjusted in accordance with recent revisions in concepts and statistical measurement. The meaning of the term has, however, been changed only in detail. Gross national product still comprises the purchases of goods and services by consumers and Government, gross private domestic investment, and net foreign investment.

## GROSS NATIONAL PRODUCT REVISED

The revision in the gross national product and closely related national income series released in July by the U. S. Department of Commerce represents a thorough review and adjustment of these measures covering the period from 1929 to date.<sup>1</sup> The principal effect of the revision has been to raise the absolute level of both series by (1) incorporating items heretofore excluded, and (2) securing broader coverage on a number of existing components. Although a few deletions have been made, they fail to outweigh the additions.

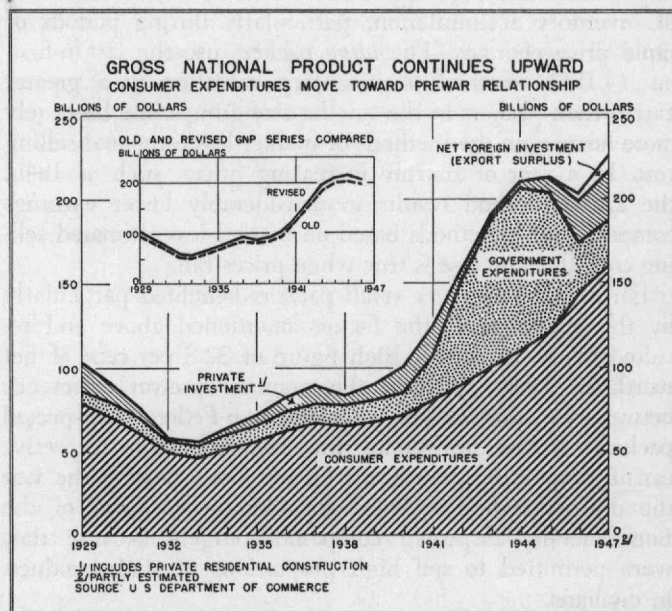
In 1947 the adjustments raised gross national product an estimated 25 billion dollars and national income an esti-

mated 12 billion dollars. Prior to 1943 the differences were much smaller, ranging from two to five billion dollars. Inclusion of corporate taxes in national income on the one hand and income in kind to the armed forces in both national income and gross national product on the other accounts for the widening margin between the old and new series after 1942.

With a few exceptions, the revision has not greatly influenced year-to-year comparisons. The old and new gross national product series have similar turning points; the movements are somewhat more pronounced in the new series. In the case of national income, however, the old series reached a bottom and a top in 1932 and 1946, respectively, whereas the corresponding lower and upper turning points in the new series were reached in 1933 and 1945.

Component series of gross national product and national income have also been adjusted by the Department of Commerce for the period beginning with 1929. Of these components, most noticeable differences have occurred in *consumer expenditures* and *personal savings*. In the old series consumer expenditures were determined as a residual; in the new, they are estimated independently. The result was a substantial increase, varying from about five billion dollars in the prewar period, through 10 billion dollars during the war, to 17 billion dollars after the end of the war.

Personal savings are defined as the difference between disposable incomes (i.e., individual incomes less taxes) and consumer expenditures. Disposable incomes were adjusted upward but to a much less extent than consumer expenditures. Therefore, personal savings on the revised basis are considerably less than personal savings as formerly calcu-



<sup>1</sup>See *National Income—Supplement to Survey of Current Business*, July 1947.

lated. So decided, in fact, is the change in level of the new series that a period of negative savings is now revealed for the years 1932 and 1933. No negative savings were shown in the old series. The direction and degree of fluctuation of the two series, however, remain much the same.

#### WHY CHANGE THE ESTIMATES?

A major revision in basic statistical series involves a great deal of labor and inconvenience not only for the relatively few civil servants who prepare it but for the much larger number of economists, statisticians, bankers, and business men who use it for various purposes. This was indicated in the July 1946 *Business Conditions* article, "Measuring National Income and Product," which the present discussion aims to bring up to date. Why then have the estimates been changed? They are not perfect even as revised; wherein lie the improvements?

National income and product estimates seek the best possible balance between three principal virtues, no one of which can be obtained to the fullest possible degree without sacrificing at least one of the others.

The first of these virtues is conceptual consistency. National income and product should include, by this criterion, all goods and services produced, whether they are sold for money or consumed in kind.

The second of these virtues is statistical accuracy. The several components of national income and product should be measurable accurately on a sample basis, both in physical units and in the common denominator of dollars. On this basis, non-money income and product should probably be excluded; estimates of the value of farm produce consumed on farms, say, are much less accurate than the estimates of the value of produce sold.

The third and final virtue is statistical comparability. Data should ideally be comparable both from year to year and from country to country. In dealing with the problem of non-money income, for example, it is an advantage to the statistician if the American statistics include the same items and exclude the same items as the similar statistics for Great Britain or Canada or other foreign nations.

The latest revision has gained somewhat in conceptual consistency and statistical comparability. It includes in national income and product two of the principal items of non-money income (change in farm inventories not held for sale and imputed rent on owned property) but excludes a third (the value of the unpaid services of housewives).

#### FURTHER REVISIONS OUTLINED

In addition to the inclusion of imputed rent, and in addition to minor statistical adjustments resulting from the enlargement of samples, there have been eight principal revisions in the national product and income series:

(1) Interest payments on Government debt have been eliminated from national income and product. The bulk of Government debt was created to finance wars and other past expenditures; authorities believe that most of the interest paid on it does not represent currently produced

goods and services or the current use of economic resources.

(2) Government subsidies paid to private enterprises have been eliminated from the national product.

(3) Corporate profits have been included in the national income *before* instead of *after* taxes.

(4) National income figures are no longer reduced by depletion allowances. This change is considered desirable because the value of new discoveries, the converse of depletion, is not counted as part of national income or product.

(5) National income and product have been revised to include income in kind received by the armed forces, the Government's contribution to military life insurance funds, and the Government's contribution to the family allowances for enlisted men's dependents.

(6) Some business payments such as private pensions, which are not in return for current services, have been included in personal incomes. They were previously neglected altogether.

(7) Employer contributions to private pension and welfare plans have been substituted for benefit payments under these plans in computing national income.

(8) The change in farm inventories of crops, included in national income and product, has been expanded to include inventories of crops not held for sale.

The estimates are lowered by the first two changes and raised by numbers three through six. The effect of the last two varies from year to year.

A new series, net national product, which equals gross national product minus capital consumption allowances, i.e., depreciation and similar charges, has been added to the income and product series published quarterly. Another "new" series, personal income, is merely the old "income payments to individuals" renamed and revised upward, primarily by inclusion of imputed rent and the business "transfer payments" mentioned under (6) in the preceding section.

#### FULL EMPLOYMENT

Both the old and new series of gross national product are currently running in excess of 200 billion dollars. Toward the close of the war it may be recalled that economists and other observers of business trends predicted that such levels of gross national product would be necessary to ensure full employment.

With 60 million persons currently employed there is general agreement that the country has now reached the stage of full employment and as a matter of fact has been at this level for probably a year. Present levels of gross national product are, however, based largely on backlogs of domestic and foreign demand which accumulated during the war. Domestic backlogs are especially great in the fields of durable producers and consumers goods and of housing. Foreign backlogs are more general but are exercising perhaps their most important buoyant effect on the American economy in the food sphere. Whether high level gross national product and full employment can be achieved once the accumulated wartime demands have been fulfilled remains a very important problem, the answer to which is not now apparent.

# Bank Loans on Farm Real Estate Analyzed

## *Sample Survey Highlights Characteristics*

Relatively prosperous conditions for the nation's farmers have resulted in a debt situation quite different during recent years from that prevailing during and immediately after the first world war. The total national farm mortgage debt has declined steadily during recent years, reaching a low point of 4.7 billion dollars in 1946. Since then the trend has reversed, and farm mortgage debt appears to be rising slightly. It is estimated at 4.9 billion dollars at the beginning of 1947.

In recent years commercial banks have become somewhat more important lenders on farm real estate than they were just preceding World War II. A comparison of the estimated totals of loans closed by lenders during the first half of 1940 with similar estimates for the first half of 1947 shows that commercial banks closed 28 per cent of the total loans on farm mortgages in the earlier period. For the first half of 1947 this proportion had risen to 33 per cent. A similar increase in relative importance is shown for "individuals," while offsetting relative declines are shown for Federal lending agencies, insurance companies, and miscellaneous lenders.

Current bank practices and patterns in lending to farmers were the subject of a sample survey made throughout the country as of June 20, 1947. A sample of the outstanding loans in each cooperating bank was listed, together with certain characteristics of these loans. Both farm real estate and other agricultural loans, sometimes referred to as "short-term" loans, were surveyed in the study.

Surveys of Federal Reserve member bank loans were made under the direction of the Federal Reserve System and Federal Reserve Banks covering 682 banks. The sampling of 497 insured nonmember banks was undertaken by the Federal Deposit Insurance Corporation. Analysis of the returns shows that of the farm real estate loans held by the banks in the Seventh Federal Reserve District, insured nonmember banks, covered by the FDIC survey, held at the time of the survey 62 per cent of the number and 57 per cent of the total dollar amount, averaging \$2,900. Member banks, as covered by the Federal Reserve survey, held 38 per cent of the number of loans and 43 per cent of the total dollar amount, with an average size of \$3,500.

### LOAN CHARACTERISTICS BY SIZE OF BANK

In sampling the banks and analyzing the data, all banks were divided into three size classes according to their deposits. The three groups were: (1) those with deposits above 10 million dollars; (2) those whose deposits totaled between two million dollars and 10 million dollars; and (3) banks whose deposits were under two million dollars.

The largest banks are relatively unimportant lenders on farm real estate mortgages. They accounted for only eight per cent of the total loans and 14 per cent of the dollar

amount of such loans. There are two important reasons why larger banks make a small proportion of total farm real estate loans. In the first place such banks are comparatively few in number in the District. Secondly, these larger banks are in the larger cities where the demand for agricultural credit is at a minimum. Medium sized banks held 56 per cent of both the number and dollar amount of loans. The smaller banks, those whose deposits are under two million dollars, accounted for 36 per cent of the loans and 30 per cent of the dollar amount outstanding.

The larger banks made larger loans, averaging \$5,250, as compared with \$3,150 for the medium sized banks and \$2,600 for the smaller banks. These differences are a reflection of two characteristics of mortgage borrowing. It is known that there is a considerable practice by which farmers put up a mortgage as general security for credit that is essentially operating, or short-term, credit. This is more common in strictly farm territory where smaller banks tend to be found. Secondly, there is some tendency for farmer borrowers to gravitate to "county seat" banks or in general larger banks when borrowing mortgage money. It is probable also that some of the difference in size of loan as between different sizes of banks is due to the fact that many of the smaller banks do not have quite the same degree of flexibility as to assets and loan policies as larger banks have and are not therefore in a position to encourage the handling of larger loans.

### SIZE OF FARM VERSUS SIZE OF LOAN

The reports showed size of farm for each loan covered by the survey. There was a tendency for smaller farms to be slightly more important proportionally in the real estate portfolios of banks than in the Census distribution. For example, 30 per cent of bank loans were on farms under 70 acres. Farms of this size account for only one-fourth of the total farms in the Seventh Federal Reserve District according to the 1945 Census.

Differences in the average size of loan were closely related to the average size of farm, varying in size, as might be expected, directly with the size of farm. The average size of loan ranged from \$1,400 for farms under 10 acres and \$1,800 for farms of 10 to 30 acres up to \$7,200 for farms of 260 to 500 acres.

It is perhaps of some interest to relate the real estate loans to the size of farm in terms of the amount loaned per acre. The amounts ranged from roughly \$19 per acre for farms of 260 acres and larger and about \$25 for farms between 70 and 260 acres to \$35 for 30 to 70 acre farms, \$90 per acre for 10 to 30 acre farms, and \$300 per acre for those farms under 10 acres.

Two factors may be mentioned in accounting for this



relationship. In the first place there is a marked tendency, particularly in this District, for real estate loans to be rather closely associated with the extent and quality of improvements on the farms. As the size of farm and the amount loaned increase, value of improvements also increases to some extent, but the value of improvements tends, nevertheless, to constitute a smaller proportion of the total value of the farm. In other words, even the smallest farm tends to have a minimum set of improvements to accommodate the farm family and a minimum of operations, and for the larger farms there is conversely a tendency for improvements to have something of an upper limit almost regardless of the total acreage.

A second factor of some importance is the development, especially in recent years, of small sized farms or small "part-time" acreages as residential property rather than as strictly agricultural production units. The housing shortage has placed something of a premium on many such properties and the appraisal value and amounts loaned tend to be relatively large reflecting this development.

Interest rate patterns classified according to size of farm show a consistent relationship. For loans on farms of 500 acres and more the average rate was 4.1 per cent. As the size of farm decreases, interest rates are moderately larger reaching an average of 4.7 per cent for farms under 10 acres and 4.9 per cent for farms of 10 to 30 acres. As previously mentioned, these differences are a direct reflection of the size of loan and illustrate what might be called one of the "economies" of larger farms. That is, they can obtain credit at lower rates because relatively fixed credit costs are distributed over a larger total amount.

#### SIZE OF LOAN AS RELATED TO TYPE OF FARM

Substantial differences were found between types of farms in average size of loans. Grain farms had the largest average size followed rather closely by livestock farms as shown in the following table. Part-time farms showed the smallest average size of loan.

Type of Farm	Average Size of Loan	Interest Rate (per cent)
General .....	\$3,020	4.5
Dairy and poultry.....	3,093	4.5
Livestock .....	3,842	4.2
Fruit .....	2,992	4.9
Grain .....	4,064	4.2
Part-time .....	2,010	5.0

Interest rates charged for loans on different types of farms once again emphasize the close relationship between size of loans and interest costs. For example, interest rates on loans for general farms under \$500 in size averaged 5.8 per cent. As the average size of loan increased, interest rates decreased. Loans to general farms of \$10,000 and over averaged only 4.0 per cent. Rates for part-time farms ranged from a high of 5.9 per cent for loans under \$500 to a low of 4.4 per cent for the largest loans. Similar relationships between size of loan and interest rate were shown for all other types of farms.

However, analysis within given size-of-loan classifications shows that there are apparently differences in interest rates as between types of farms *not* related to size of loan. For example, the loans between \$2,500 and \$5,000 in size and averaging \$3,400 showed substantial differences in interest rates. Thus, with the effect of the size of loan eliminated, rates charged on this size of loan for general and dairy and poultry farms was 4.6 per cent. Loans of this size to livestock farms and grain farms averaged 4.4 per cent. Higher rates were being paid for fruit farm loans and for loans on part-time farms, amounting to 5.2 per cent and 4.9 per cent respectively.

#### RELATIONS BETWEEN PURPOSE AND YEAR MADE

For all real estate loans of banks as of the date of the survey, 60 per cent of them were made to buy land mortgaged and 10 per cent to buy other land. Only eight per cent of the loans were reported as being made to build or repair buildings. The remainder, amounting to 22 per cent, were for other purposes not specified in the reports.

There were some differences, probably obvious ones, in the average sizes of the loans outstanding for the different purposes reported. The average sizes were as follows: to buy land mortgaged—\$3,200; to buy other land—\$3,600; to build or repair buildings—\$2,000; and other classifications—\$3,000. Probably the principal explanation for the larger size of the loans to buy other land is that the trend in the last few years to expand size of farms by the purchase of additional land has come at a time when larger loans were needed, plus the fact that since these are newer loans they are not amortized down as much as other loans. Further evidence of this is found in the fact that for all outstanding real estate loans in both member and nonmember banks made in 1940 and earlier, loans to buy other land constituted only six per cent of the total loans. The loans made in 1947 to buy other land were 11 per cent of the total real estate loans outstanding made in 1947.

The average size of outstanding loans by banks ranged from \$1,800 for those made in 1940 and earlier upward as they decreased in age to \$3,000 in 1945, \$3,300 in 1946, and \$4,200 in 1947. These figures reflect the partial amortization of older loans and the fact that larger amounts were loaned as land prices increased. While more than half of all the real estate loans held by all banks in the District at the time of the survey were made in either 1946 or 1947, 10 per cent of those held were reported as made in 1940 or before. The average age of all outstanding real estate loans was 2.5 years.

#### REPAYMENT METHODS

The reports showed loans as to whether they were single payment notes or instalment notes. For all loans reported, 37 per cent were single payment loans. Insured nonmember banks had a substantially larger proportion of their total number of real estate loans classified as "single payment" than did member banks. The proportions for the two groups were 42 per cent and 29 per cent, respectively. Single payment mortgages tended to be smaller than instalment loans.

The single payment notes average was \$2,850 while instalment notes averaged \$3,250. Interest rates were one-tenth of one per cent higher for loans paid by "instalment."

#### LOAN RATIOS AND APPRAISED VALUES

On the basis of the real estate loans on the books of banks at the time of the survey it would appear that there has been some tendency for the ratio of loan to appraised value to rise slightly in the past few years. While loans made in 1940 and earlier were 39 per cent of appraised value, the 1941 loan ratio for all banks was 35 per cent. The following year this had risen to 37 per cent. Loans made in 1943 and 1944 showed a substantial jump in loan ratio, averaging 42 per cent. A peak of 43 per cent was reported for 1945 loans, and slight declines since then are indicated by the figures for 1946 and 1947 loans, averaging 42 and 41 per cent, respectively.

It should be emphasized that the 1941 loans, for example, are only those loans still remaining on the books of banks at the time of the survey. Thus the low ratio of loan to appraised value for the earlier years (the older loans in the banks) does not necessarily represent the ratio for all loans made in the earlier years. But it would seem unlikely that as the loans made in the earlier years were paid off they would be those having originally a relatively high ratio of loan to appraised value.

No consistent relationship is shown between the loan ratio and average size of farm. It is apparent that there is a very wide range of variation in the proportion of total appraised value banks have loaned. This variation appears to be greater within banks than between banks. When it is remembered that some real estate loans are only a convenient form of general credit security for some farmers, and that there are also cases where other collateral or the character of the borrower make for loan ratios higher than abstractly might seem desirable, these wide variations in the loan ratio are not surprising. Cases did appear in the survey of single individual loans with loan ratios ranging from less than 10 per cent to as high as over 90 per cent in one case. But real estate loans in excess of 50 per cent of appraised value were rare.

#### MATURITIES

Cooperating bankers reported the maturities of their real estate loans. For all loans the average maturity at the time of the survey was 5.2 years. Classified by purpose of the loan, the maturity of loans to buy the land mortgaged was 5.7 years. Loans to buy other land had an average maturity of 4.9 years, while those loans reported to build or repair buildings were on the average due in 4.5 years.

A little over one per cent of the total loans was reported as demand notes. At the other end of the scale five per cent of the loans were indicated as having a maturity of more than 10 years. But more than half of the total number of loans were to mature in from three to 10 years.

Analysis of the results of the survey of agricultural loans other than real estate loans will appear in a subsequent article in *Business Conditions*.

#### FARM TENANCY

(Continued from Inside Front Cover)

staple cash crops are grown extensively, and relatively low where dairying, livestock production, fruit and vegetable growing, and subsistence types of farming predominate. Permanence of tenure is more essential to successful farming in these latter types of farming areas than in areas producing the staple cash crops, cotton, wheat, and corn. Within the cash crop areas tenancy tends to be most prevalent on the more productive soils and somewhat lower on the less productive soils. This suggests that high land value is a factor limiting the ownership of farms by farm operators or, conversely, making land ownership relatively more attractive to non-farmers.

As may be expected the size of payment needed to acquire ownership of an economically sized farm usually is larger in areas of high land values than in areas of cheaper, less productive land. Also, the total investment in land usually is greater for farms of high value per acre, increasing the total investment required. Both the larger initial payment and the larger total investment may restrict the number of farmers who can provide the capital required for ownership of both the real estate and the operating equipment and livestock for a farm in the most productive areas. By renting land and utilizing his own capital for operation purposes the farmer with limited capital resources often may obtain the best combination of land, labor, and capital, and actually earn more than if he were owner-operator of a smaller tract. In fact, numerous detailed farm financial studies have concluded that the most productive use by a farmer of limited capital is in the provision of adequate machinery and livestock rather than in purchasing land.

The average size of tenant-operated farms exceeded that of owner-operated farms as well as the average size of all farms of the Seventh District states. Tenant farms exceeded full-owner farms in size by as much as 79 per cent for Indiana and 75 per cent for Illinois, but were smaller than the part-owner farms. Farms operated by hired managers averaged largest in size but were few in number. The relatively small average size of full-owner farms results, in part, from the numerous very small farms most of which are operated by owners, except for croppers in the Cotton Belt.

Tenant-operated farms exceeded full-owner farms in value per acre for Illinois, Indiana, and Wisconsin and were about

TABLE 2  
PER CENT OF FARMS OPERATED BY TENANTS  
BY SIZE OF FARM, SEVENTH DISTRICT STATES,  
1945

Size of Farm (acres)	Michigan	Wisconsin	Illinois	Indiana	Iowa
Under 10 . . . . .	7.2	13.3	18.9	14.6	20.3
10 - 49 . . . . .	7.1	10.9	19.1	11.9	19.8
50 - 99 . . . . .	10.7	17.4	29.1	17.8	33.8
100 - 179 . . . . .	15.8	23.8	47.0	29.8	47.5
180 - 499 . . . . .	16.3	25.1	50.6	35.8	48.8
500 - 1000 . . . . .	12.0	16.2	34.7	27.6	31.6
1000 and over . . . . .	8.0	9.5	18.6	15.2	11.4

SOURCE: United States Bureau of the Census.

**TABLE 3**  
**SELECTED FARM CHARACTERISTICS BY TENURE**  
**GROUPS, SEVENTH DISTRICT STATES, 1945**

Item	Illinois	Indiana	Iowa	Michi- gan	Wiscon- sin
<b>Average size of farm (acres):</b>					
All operators .....	155	114	165	105	133
Full owners .....	102	82	133	86	119
Part owners .....	223	184	231	167	181
Managers .....	312	339	341	399	333
All tenants .....	179	147	179	125	146
<b>Cropland harvested per farm (acres):</b>					
All operators .....	111	73	110	51	61
Full owners .....	68	48	86	40	53
Part owners .....	146	115	147	87	81
Managers .....	208	193	198	163	149
All tenants .....	132	98	121	67	72
<b>Value of farms (dollars per acre):</b>					
All operators .....	116	90	105	65	61
Full owners .....	109	87	106	65	60
Part owners .....	104	87	100	62	56
Managers .....	157	110	106	96	84
All tenants .....	126	94	105	65	65
<b>Value of farms (dollars per farm):</b>					
All operators .....	17,933	10,197	17,284	6,843	8,069
Full owners .....	11,077	7,172	14,079	5,609	7,075
Part owners .....	23,092	16,013	23,196	10,375	10,212
Managers .....	48,999	37,183	36,274	38,258	27,991
All tenants .....	22,519	13,818	18,831	8,185	9,465

SOURCE: United States Census of Agriculture, 1945, U. S. Bureau of the Census.

equal in per acre value for Iowa and Michigan. In average value per farm, tenant farms exceeded materially the owner-operated farms in each state.

#### TECHNOLOGY MAY INCREASE TENANCY

The trend toward larger farms resulting in large part from improved machinery, especially modern power units, requires larger capital investment per worker in both real estate and operating equipment if the most profitable combination of land, labor, and capital is to be realized. This development raises the very important question as to the adaptability of owner-operated farm units to this new technology. Will enough farmers have adequate capital resources to own the amounts of land and operating equipment needed for efficient sized farm units? Or will many farmers find it profitable to own only the operating equipment and purchase the use of land from investors in farm real estate through some type of rental agreement?

The basic problems appear to be those of obtaining relatively long tenure of land and a desirable pattern of land use. Generally, in the United States, it has been considered that the most practical means of attaining these objectives is through owner-operated farms. Increasing numbers of people are considering the desirability of supplementing the goal of owner-operated farms with measures aimed at promoting security of tenure and desirable patterns of land use in those circumstances where the farm operator does not hold title to the land. Also, there is a growing realization that, as the result of wide fluctuations in farm income, the ownership of land by the family using it does not necessarily result in security of tenure and optimum use of the land. In periods of low or falling prices owner-operators

with small equities frequently have been unable to produce enough to pay taxes and meet interest payments on the farm mortgage, even by exploiting their soil.

#### SHARE RENTALS MOST COMMON

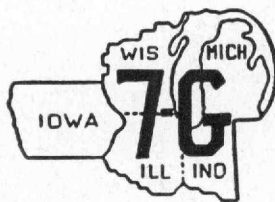
The rental agreement between owner and tenant varies widely from farm to farm. The Census classified tenants into four groups: cash tenants, share-cash tenants, share tenants and croppers, and other and unspecified tenants. Cash tenants pay a cash rental for the use of the farm. Share-cash tenants pay part of the rent in cash and part as a share of the crops or livestock production. Share tenants pay a share only of the crops or livestock production or both.<sup>1</sup> Tenants for which the rental agreements were not specified and those which could not be included in one of the other sub-classes were classified as other and unspecified tenants.

Share-tenants were most numerous, over one-half of all tenants being so classified. One-fifth of the tenants were cash renters, and somewhat less than one-fifth were share-cash tenants, with about 10 per cent listed as other and unspecified. Many studies of the wide variety of rental agreements have been made by research workers in land economics. The most common period for which rental agreements are made is one year. Many, a majority in some areas, are verbal without written memoranda. These may easily result in misunderstandings and contribute to a high mobility of tenants.

Provisions for compensating tenants for farm improvements made but not utilized fully before the lease expires are uncommon. This, in conjunction with one-year leases, limits the adoption of optimum patterns of land use and contributes to the excessive exploitation of soil resources. Three-year or longer-term leases have been suggested as partial solutions. However, some owners of agricultural real estate are awaiting a favorable opportunity to sell the farm and do not want the sale to be handicapped by a long-term lease to a tenant. Many owners hesitate to contract for several years with a tenant about whom they may know very little. If a landlord-tenant relationship becomes unsatisfactory, it is easier to settle the matter under a one-year lease than if the lease is for a longer period. Leases of several years duration do not fit well into such circumstances. Increasing in popularity is the lease made for one year but with provision for automatic renewal unless one party to the agreement gives notice a specified period prior to termination. If this type of lease includes provision for compensation of the tenant for improvements made by him but not fully utilized at the time the agreement is terminated, it makes possible a desirable pattern of land use. This provision is particularly important in the Seventh District states where livestock production and biennial and perennial hay and pasture crops are important parts of the farm production program, and where the use of fertilizers, lime, and other good soil management practices are increasing.

<sup>1</sup>Croppers are share tenants to whom the landlords furnish all the work animals or tractor power in lieu of work animals. (Cropper tenants were not separately classified for states of the Seventh Federal Reserve District.)

**SEVENTH FEDERAL**



**RESERVE DISTRICT**

