

# FARM AND RANCH BULLETIN

Vol. 24, No. 6

June 1969

## INTEREST RATES ON FARM LOANS

The Nation's farm operators paid a record amount of interest during 1968, according to the Economic Research Service. Payments on money borrowed by U.S. farmers reached a peak of \$3.0 billion last year, which was almost one-tenth more than in 1967 and nearly three times the amount recorded a decade earlier. About one-half of the interest cost was for long-term real estate debt, and the remainder was for short- and intermediate-term debt.

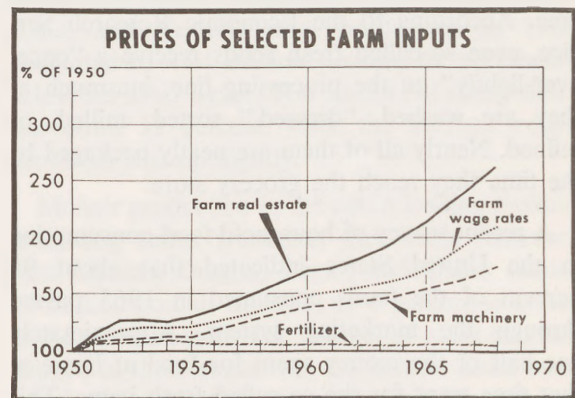
The ERS says that the rise in interest payments was not due solely to higher interest rates. The 1968 record also reflects the increased demand for money by all sectors of the economy and the fact that farmers borrowed more money than ever before. Reasons given for the increased demand are that production items — such as seed, machinery, feed, and pesticides — cost more than in the preceding year and that farmers were less reluctant to obtain loans to pay for such items.

U.S. farmers who borrowed money for real estate purposes in 1968 paid interest at an average rate of 0.50 to 0.75 percentage point higher than in the preceding year. Those who obtained all other types of farm loans in 1968 found that these rates advanced an average of 0.30 to 0.40 percentage point over the 1967 figure.

A survey of commercial banks revealed an average rate of interest ranging from 6.94 percent to 7.61 percent on farm-operating loans and loans for feeder cattle during 1968. In January 1969, there were more production credit associations charging at least 7 percent on loans than there were a year earlier. Merchants, dealers, and other lenders seem to have been following the lead set

by institutional lenders, according to the ERS. Federal land banks and life insurance companies also charged higher interest rates on new farm real estate loans in 1968 than they did in the preceding year.

The ERS says that the higher interest rates paid by farmers reflect a situation that is common to the U.S. economy as a whole: stronger demand and smaller supplies of loanable funds. Despite the tight money situation, farm operators with proven management and repayment ability generally were able to secure adequate loans in 1968. On the other hand, operators with little farming



SOURCE: U. S. Department of Agriculture.

experience or with marginal operations may not have received what they considered to be adequate credit.

Total U.S. farm debt rose slightly less in 1968 than in any year since 1964. Although the buildup of farm real estate loans equaled the largest dollar

increase of any year within the last decade, non-real estate loan growth was the smallest since 1965. Farm real estate debt in the United States reached an all-time high of \$27.8 billion on December 31, 1968, representing a 9-percent gain over the previous year.

Farm debt other than real estate also rose to a record level, reaching \$25.3 billion at the end of 1968. Its growth, however, was only 7.6 percent, compared with an average annual growth rate of 11.0 percent for the previous 3 years. A slowdown in purchases of machinery probably kept down the increase in nonreal estate farm debt.

Except for a few areas, expectations are that adequate loan funds for production use will be available in 1969. Demand for farm loans probably will continue to be strong, and many farmers likely will buy "big-ticket" items which they postponed earlier in the hope that interest rates would go down. Consequently, there is little likelihood that interest rates on farm loans will ease during the first half of 1969, according to the ERS.

## Processed Foods

Virtually all foods are processed to some degree. According to the Economic Research Service, even so-called fresh foods receive a "once-over-lightly" on the processing line, inasmuch as they are washed, "dressed," sorted, milled, or refined. Nearly all of them are neatly packaged by the time they reach the grocery store.

A recent survey of household food consumption in the United States indicated that about 95 percent of the foods consumed in 1965 passed through the marketing system. Approximately one-half of the money spent for food at home at that time went for the so-called fresh items. This proportion was down from about 55 percent of total spending in 1955. Meanwhile, the share for foods with additional processing (ranging from canned to convenience items) climbed from 45 percent to 50 percent.

Livestock products receive less processing than crop products. Only about two-fifths of the animal foods we consume receive the full processing treatment, contrasted with more than three-fifths of the crop products.

In the spring of 1965, nearly a tenth of the value of our food reached us in cans, while another tenth arrived in the baked form. Frozen, dried, smoked, or cured foods accounted for another tenth of the total. The remainder of the food that received a full processing treatment came out in miscellaneous forms, such as chips, pickles, cheeses, candy, or soft drinks. Compared with 1955, a larger share of the total in 1965 was frozen, baked, or processed in a variety of ways; about the same share was canned, dried, or cured.

## Water Conservation in the Texas High Plains

The use of shafts that return surface runoff to natural underground formations may be a more satisfactory way to recharge ground-water supplies than the use of wells, reports the Agricultural Research Service. The need for artificial recharge — long recognized as a satisfactory method of water conservation — is especially urgent in the Texas High Plains. In this region, the demand for irrigation water is resulting in a serious decline in ground-water levels. Natural recharge is almost nonexistent, and rainfall is the only recurring source of water, according to the ARS.

Approximately one-tenth of the surface runoff water enters a stream system. The remainder flows into natural depressions, called playas, where most of the water evaporates. If this volume of water — about 2.5 million to 3.0 million acre-feet annually — could be conserved, it would prolong the region's large-scale irrigated agriculture or support a smaller irrigated area indefinitely, according to the ARS. Research and practice on artificial recharge have been directed mainly toward recharging through wells, because slowly permeable layers of soil and underlying strata can easily be by-passed to reach the aquifer (water-bearing layer of rock) quickly.

Recently, however, ARS researchers have been studying the use of shafts (well-like openings that terminate above the water table) as a more satisfactory method of water conservation. They say that the use of shafts results in less biological pollution to the aquifer and less chance of damage to the aquifer by sediment. Moreover, shafts cost less than wells.

The shafts may be lined with casing or filled with gravel to hold back the sides while allowing water to seep down. Effectiveness of the shafts depends upon their ability to accept recharge water, which, in turn, depends upon the material in which the shafts terminate. A disadvantage of shaft recharge, however, is that sediment plugging the shaft cannot be removed by reversing the water flow as is the case for a pumped well. Although a jetting or washing operation might overcome surface sealing, it is preferable to recharge only with clear water, according to the ARS scientists.

In order to minimize water losses, recharge rates must exceed 500 gallons per minute (gpm), which is the evaporation rate on a 100-acre playa during May and June — generally the months of heaviest rainfall in Texas. Playas that are seeded to crops must be drained quickly in order to prevent crop damage.

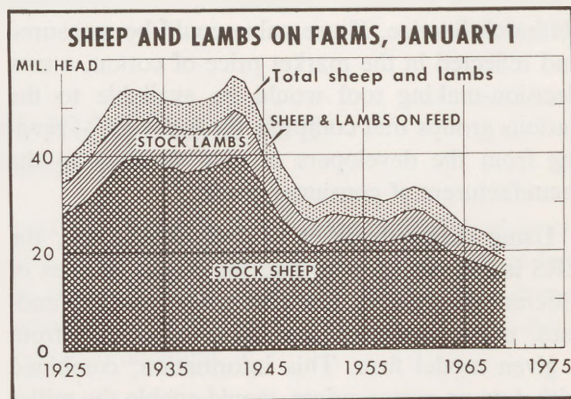
In the ARS studies, artificial recharge rates through plain shafts were unsatisfactory since they accepted from 90 to 220 gpm. Modification of the shafts by hydraulically mining a cavity in the Ogallala sand 100 feet below ground level increased the recharge rate up to 358 percent. The maximum rate with clear well water was 788 gpm. This rate is satisfactory for recharge through a single shaft.

## Wool and Mohair Production

Production of shorn and pulled wool in the United States during 1968 totaled more than 198 million pounds (grease basis), reflecting a 6-percent decline from the preceding year, points out the Statistical Reporting Service. Shorn wool production, at 178 million pounds, was down 6 percent; and pulled wool output, at 20.5 million pounds, was 8 percent less than in 1967.

The number of sheep and lambs shorn in the Nation during 1968 totaled 20.7 million head, which is 6 percent below the previous year. The fleece weight of shorn wool failed to continue its longtime uptrend last year and averaged 8.58 pounds per fleece, or the same as a year earlier. The average weight per skin of pulled wool was 3.43 pounds, compared with 3.44 pounds in 1967.

The value of wool produced last year in the Nation did not decline as much as did production due to the higher prices received. U.S. farmers and ranchers received an average price of 40.5 cents per pound for shorn wool in 1968, up 0.7 cent from a year earlier. The total value of shorn wool



1969 preliminary.

SOURCE: U. S. Department of Agriculture.

produced was \$72 million, representing a 4-percent decrease from 1967.

In the states of the Eleventh Federal Reserve District (Arizona, Louisiana, New Mexico, Oklahoma, and Texas), wool production in 1968 amounted to 45.1 million pounds, or 10 percent below the 1967 figure. The number of sheep shorn was down 11 percent, while the average weight per fleece was up slightly.

Mohair production in the seven leading mohair-producing states (Arizona, California, Missouri, New Mexico, Oregon, Texas, and Utah) totaled 26 million pounds in 1968, or 4 percent less than in the previous year. The number of goats and kids clipped in these states was 4.0 million head, compared with 4.1 million a year earlier. The average weight of mohair per goat and kid clipped was 6.6 pounds in 1968, the same as in 1967.

The value of mohair production in the Nation amounted to \$11.8 million in 1968, reflecting a 6-percent gain over the preceding year. The average price received by producers was 45.2 cents per pound, up 4.3 cents per pound over 1967. Mohair production in Texas — the leading mohair-producing state — accounted for 97 percent of the national total in both 1967 and 1968.

## Operations Research for Cotton Manufacturers

Raw cottons that can be processed at a relatively low cost into high-quality finished commodities are the cottons which will be the most valuable to both the individual manufacturer and the cotton industry as a whole, according to the Economic Research Service. If use value could be measured and reflected in the market price of cotton, a new decision-making tool would be available to the various groups that comprise the industry — ranging from the developers of new varieties to the manufacturers of consumer goods.

Using the methods of operations research, the ERS is learning how to find the relative values of different qualities of raw cotton for specified end-uses, under optimum processing conditions from a given model firm. This information, combined with data on cotton prices, would enable the miller to determine the best cotton or cotton blend for the production of each of his commodities. The ERS says that the research is complicated because, in cotton manufacturing, attention cannot be limited exclusively to the final output. Efficient experimentation requires analysis of intermediate products and processing stages.

A model plant can be studied during various stages of production. One type of experiment may be a fractional design that tests for the major effects of from two to many processing factors at a time. Responses would include those connected with intermediate processing stages, as well as the final product.

In carrying out other experiments, certain characteristics of inputs and processing operations are altered by small amounts that might change the output by corresponding small amounts. In this manner, the relationships between various processing stages can be ascertained. The ERS says that experiments such as these may not simplify the complicated route which cotton travels from field to fabric but that the studies may make marketing decisions easier.

Many cotton marketing experts feel that this type of operations research will be necessary for cotton to compete more effectively with synthetic fibers. Analysts feel that any classification of grades according to specified uses would lead to an efficient consumption of most grades of cotton.

## Upswing in Food Manufacturing Productivity

Output per man-hour in the food manufacturing industry rose more rapidly than that in any other manufacturing sector in the United States between 1957 and 1967, reports the Economic Research Service. Moreover, the productivity in food manufacturing outstripped man-hour output in the entire private sector of the national economy. The annual rate of growth for food manufacturing was 3.8 percent, compared with 3.5 percent for all manufacturing and 3.3 percent for all private enterprises.

A combination of factors accounted for the upswing in food manufacturing productivity. Above all, technology is making itself felt, says the ERS. Many technological innovations have been adopted, such as cattle-on-the-rail dressing systems, continuous processing methods, automation, and conveyerization. This adoption of technological improvements has involved, to a considerable extent, the substitution of capital for labor, and expenditures for plants and equipment have been increased.

Also, the gain in productivity in the food manufacturing industry has been encouraged by an expanding economy and a growing demand for processed foods. The demand for such foods has made it possible for manufacturers to justify large plant and equipment expenditures.

The Nation's food and beverage manufacturers spent an average of \$1.35 billion annually on new plants and equipment during 1965-67. This figure represents a 78-percent advance over such outlays during 1954-56, when these expenditures were fairly stable.

The credit for greater productivity also goes to research and development, according to the ERS. The food and kindred products industry spent \$166 million in this area during 1966, reflecting an increase of 159 percent over 1956. In addition, the industry has benefited from research done by the chemical industry, the food machinery industry, and the electrical industry, as well as by universities and government agencies. A greater emphasis upon education and on-the-job training has upgraded management and labor within the food manufacturing industry as a whole.