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Prices of Illinois Farm Products From 1921 to 1929

By L. J. NORTON



UNIVERSITY OF ILLINOIS
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PRICES OF ILLINOIS FARM PRODUCTS FROM 1921 TO 1929¹

By L. J. NORTON, Assistant Chief in Agricultural Economics²

IT IS a matter of common knowledge that many of our farm products have been relatively low in price since the high war-time basis gave way to a peace-time basis in 1920. Larger quantities of corn, hogs, or wheat have been required to buy a binder, to pay the hired man, or to pay taxes or interest than during the high-price war years or even during the period before 1914. This situation and its far-reaching effects on Illinois farmers and landowners is generally recognized. The wide variations that have developed in the relative positions of various farm products have not been given as great consideration. In this bulletin the difference between commodities rather than the general position of farm products is emphasized.

SCOPE OF THE STUDY

Specifically this bulletin deals with some of the changes in the prices of twenty Illinois farm products during the period 1921-1929.

The prices used in the study were collected by the U. S. Department of Agriculture.³ They represent the prices which were paid to farmers on the 15th of each month by a large number of buyers of farm products at country points. Such prices have an advantage over central market prices in that they reflect the net prices received by farmers. Central market prices include certain handling expenses, and these change in amount during a period such as covered in this study. That this series of farm prices reflects changes in market prices rather closely is indicated by comparing them with other series based on market prices.

¹In order to bring this study more nearly down to date some data for 1929 were added while the manuscript was in process and after the main study of price relationships for 1921 to 1928 had been made.

²The author acknowledges the helpful assistance of B. B. Wilson, G. L. Jordan, and Rodney Whitaker, who, as Research Assistants in Agricultural Economics, aided in the preparation of material used in this bulletin.

³In this publication free use has been made of statistics of a number of kinds collected by the U. S. Department of Agriculture and published in the yearbooks and in various other publications of the Department. Specific reference is not made to each of these. The author wishes particularly to acknowledge the cooperation of C. F. Sarle and Roger Hale, of the Bureau of Agricultural Economics, who made available the price data which permitted the study of local prices within the state.

VARIATIONS AMONG PRICES OF INDIVIDUAL PRODUCTS

The comparative positions of the prices of twenty products for the eight-year period 1921-1928 and for 1929 are shown in Table 1.

TABLE 1.—AVERAGE PRICES OF SELECTED ILLINOIS FARM PRODUCTS, 1921-1928, AND 1929, COMPARED WITH 1910-1914

Commodity	1910-1914	1921-1928	Two four-year periods		1929
			1921-1924	1925-1928	
	Prices				
Horses, head.....	\$151.58	\$86.10	\$87.27	\$84.94	\$86.33
Hay, ton.....	13.95	13.75	14.23	13.27	11.67
Barley, bushel.....	.63	.65	.60	.69	.53
Oats, bushel.....	.38	.40	.38	.42	.42
Rye, bushel.....	.73	.89	.85	.92	.92
Hogs, 100 pounds.....	7.44	9.23	7.86	10.61	9.78
Corn, bushel.....	.58	.72	.65	.79	.84
Beef cattle, 100 pounds.....	5.94	7.51	6.42	8.60	10.54
Milk cows, head.....	53.94	71.95	59.66	76.74	100.25
Wheat, bushel.....	.92	1.25	1.13	1.38	1.13
Veal calves, 100 pounds..	7.19	9.95	8.59	11.30	13.46
Sheep, 100 pounds.....	4.26	5.90	5.19	6.62	6.63
Eggs, dozen.....	.21	.30	.30	.30	.31
Butter, pound.....	.25	.40	.38	.42	.44
Red clover seed, bushel..	9.02	14.75	11.69	17.82	15.90
Wool, pound.....	.20	.33	.29	.36	.35
Apples, bushel.....	1.04	1.71	1.84	1.57	1.83
Potatoes, bushel.....	.83	1.35	1.18	1.56	1.10
Chickens, pound.....	.11	.20	.20	.21	.22
Lambs, 100 pounds.....	5.93	11.02	9.62	12.41	12.59

Index numbers of prices (1910-1914 = 100)

Horses.....	100	56.8	57.6	56.0	57.0
Hay.....	100	98.6	102.0	95.1	83.6
Barley.....	100	102.8	96.0	109.5	84.1
Oats.....	100	104.2	99.3	109.2	110.5
Rye.....	100	121.8	116.8	126.7	126.0
Hogs.....	100	124.1	105.6	142.6	131.4
Corn.....	100	124.4	112.5	136.2	144.8
Beef cattle.....	100	126.4	108.2	144.7	177.4
Milk cows.....	100	126.4	110.6	142.3	185.8
Wheat.....	100	136.0	122.6	149.4	122.8
Veal calves.....	100	138.4	119.5	157.2	187.2
Sheep.....	100	138.6	121.8	155.4	155.6
Eggs.....	100	143.4	141.6	145.2	147.6
Butter.....	100	160.5	152.0	169.0	176.0
Red clover seed.....	100	161.0	129.6	197.5	176.3
Wool.....	100	163.1	143.8	182.5	175.0
Apples.....	100	164.0	176.9	151.2	176.0
Potatoes.....	100	165.2	141.8	188.6	132.5
Chickens.....	100	184.1	179.5	188.6	200.0
Lambs.....	100	185.7	162.2	209.3	212.3

The more important items are shown graphically in Fig. 1. In order to bring out the differences more clearly, the prices for the different periods are expressed as index numbers or percentages of the average for 1910-1914.

The way to interpret the percentages (index numbers) shown in Table 1 and Fig. 1 may best be illustrated by an example. During

1921-1928 the prices both of corn and of hogs averaged 124 percent of 1910-1914. This means that quantities of corn and of hogs which would have brought \$100 at 1910-1914 prices would have brought \$124 at 1921-1928 prices.

In making comparisons of these index figures it must be kept in mind that the prices of particular commodities may have been relatively high or low during the base period, which was just before the outbreak of the World War. Cattle, for example, were rather high during

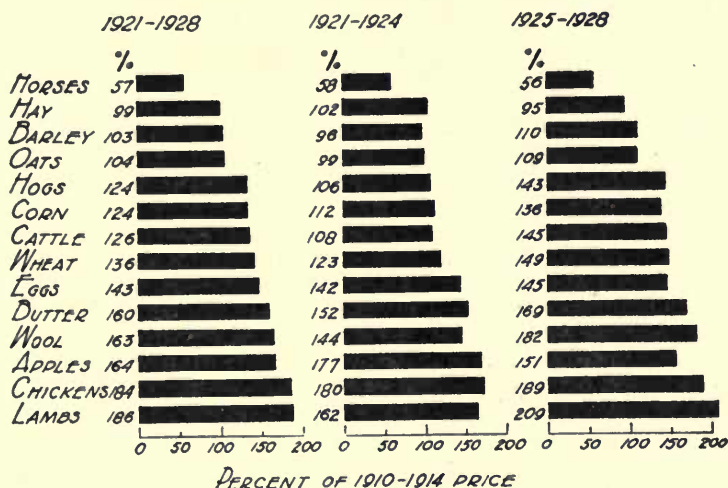


FIG. 1.—RELATIVE FARM PRICES OF FOURTEEN ILLINOIS FARM PRODUCTS, 1921 TO 1928

Wide variations have developed between the relative prices of these fourteen products. Altho there was a general tendency for the prices to be higher during the second four years, 1925-1928, than during the four previous years, the various products maintained much the same relative positions.

the base period, while sheep and lambs were low. This circumstance lowers the index figure for cattle in the 1921-1928 period and raises those for sheep and lambs. Wherever circumstances of this type had a significant effect on the figures for the later periods, they are noted in the discussion of individual commodities.

That wide variations in price relationships have developed among the twenty commodities listed is shown by a study of either Table 1 or Fig. 1. Grouping these commodities according to whether 1921-1928 prices were low, intermediate, or high as compared with 1910-1914 prices, we have the following arrangement.

	<i>Low</i>		
Horses.....	57	Barley.....	103
Hay.....	99	Oats.....	104
	<i>Intermediate</i>		
Rye.....	122	Wheat.....	136
Hogs.....	124	Veal calves.....	138
Corn.....	124	Sheep.....	139
Beef cattle.....	126	Eggs.....	143
Milk cows.....	126		
	<i>High</i>		
Butter.....	160	Potatoes.....	165
Red clover seed.....	161	Chickens.....	184
Wool.....	163	Lambs.....	186
Apples.....	164		

While averages for individual years would fall into different order from the above (see Table 7), we are concerned here, not with differences during individual years, but with any general tendencies that have developed, and these can be shown only by expressing the prices in averages for several years.

CHANGES BETWEEN FIRST AND LAST HALVES OF PERIOD

Prices tended to be higher in the last four years of 1921-1928 than in the first four years. In 1921-1924 the average index figure for the twenty items was 125.0, while in 1925-1928 it was 147.8. Seventeen of the twenty items averaged higher in the second period than in the first. The three exceptions were horses, hay, and apples. The relative positions of the various items did not change very much between these two periods. The period of relatively higher prices continued down to the end of 1929. The year 1930 appears to have initiated a newer period, during which the averages will be lower than for 1925-1929.

PERMANENCY OF DIFFERENCES IN PRICE RELATIONSHIPS

Can we expect the relationships shown in Table 1 among these various farm commodities to continue? Will butter continue to be relatively higher in price than oats, and if so, for how long? These questions must be answered before farmers can wisely use a knowledge of such relationships as a guide to changes in their business.

It is obvious that a decrease in the quantity of oats marketed and an increase in the quantity of butter would operate to bring the prices of these two commodities closer together. Such a shift would tend to alter the price relationship which caused the shift to be made. The fact that some of the differences in price relationships that have developed since 1910-1914 have persisted and in some cases have

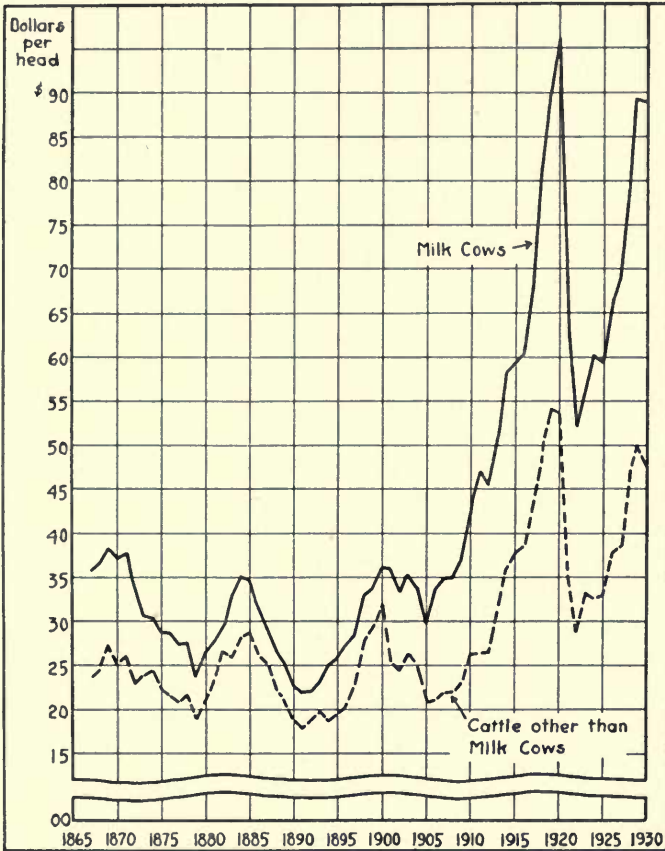


FIG. 2.—VALUE PER HEAD OF MILK COWS AND OTHER CATTLE ON ILLINOIS FARMS, JANUARY 1, 1867 to 1930 (U. S. Department of Agriculture estimates)

Prices of milk cows and of other cattle have tended to follow each other closely. Both run in well-marked cycles. In 1929 prices of both were in the high-price phase of the cycle.

widened over a period of eight years indicates that some of them may prove rather permanent.

In the detailed discussion in the following sections of this bulletin certain facts regarding the causes for the changes that have taken place in price relationships among these twenty agricultural products are presented and certain suggestions are made as to the probable permanence of these changes. At the outset it may be stated that per-

manent changes in the relative prices of various products will occur only when there are permanent changes either in demand or in cost of production in Illinois or elsewhere. Hence in analyzing the situation we will pay particular attention to factors that have made for permanent changes either in cost of or in demand for these products, and in the absence of such changes we may expect that the differences which have developed between products will be only temporary. Of course the price of a commodity may for a particular year or even for a series of years be high or low in relation to others even tho there are no permanent changes in demands or in costs. A large or small crop yield per acre during one year or for a series of years may, for example, temporarily cause low or high prices; or an over-expansion in some branch of livestock production may cause low prices for a series of years until numbers are reduced to a point where the market will absorb the output at higher prices. Farmers are more likely to be misled by high or low livestock prices, however, than by high or low crop prices because the reason for the high or low crop prices—the small or large crops—is more obvious than the reasons for the high or low livestock prices.

Eight years is a period long enough to iron out the influence of individual years as well as to permit post-war conditions to have worked out a large part of their influence on values. Generally speaking, the relative order which the various commodities have held during 1921-1928 may, with the probable exception of the various classes of cattle, be expected to continue for the next few years.

RELATIVE PRICES NOT AN INDICATION OF RELATIVE PROFITS

The mere fact that the price of butter from 1921 to 1928 averaged 160 percent of 1910-1914, while the price of oats averaged only 104 percent, does not prove that oats were less profitable than butter. The costs of production may have increased in the same ratio. Labor is a large item in the cost of producing butter. As pointed out above, the price of butter would stay permanently higher than the price of oats only if the cost of producing butter were to rise in relation to the cost of producing oats.

SHOULD PRODUCTION BE VARIED IN RESPONSE TO PRICE CHANGES?

In studying price changes as a factor to be considered in planning farming operations, three different types of change should be kept in mind:

1. Permanent changes resulting from changes in demand or costs.
2. Temporary changes resulting from year-to-year variations in yields per acre.
3. Semitemporary changes due to production cycles that occur with all species of livestock and with some crops.

A good illustration of a permanent change is the decline in the demand for oats caused by the decline in the number of horses. A less obvious example is the effect that higher wage levels have had on the cost of producing commodities that require much labor for their production. Permanent changes in production can wisely be made in response to price changes of the permanent type, particularly when the price changes result from changes in demand.

Readers will have no trouble in calling to mind illustrations of temporary changes, caused by variations in yield per acre. These should be ignored in making long-time farm plans.

The third type of change—semitemporary—is well illustrated by the cattle situation from 1921 to 1928. During the first part of this period cattle were low in price, which was an indication that receipts were excessive in relation to demand. During the latter part of the period cattle were high in price, receipts having fallen to a point where the demand would absorb the offerings at a higher level.

The farmer can adopt two policies with respect to changes of the semitemporary type: first, he may maintain a stable production, varying his output but little over a period of years; second, he may attempt to vary production in such a way as to have more of the commodity to sell in periods of high price and less in periods of low price. The latter policy is quite different from that which is followed by many farmers who increase production during periods of low price and reduce production during periods of high price; this is of course an unwise policy. Which of the first two policies is best depends on particular circumstances and is therefore a matter of individual decision. Variable production requires more judgment, and should result in a farmer's obtaining higher average prices if his judgment proves good but it may result in higher average costs because of incomplete use of equipment during a part of the time and the necessity of storing larger quantities of feed.

FARM ADJUSTMENTS RELATIVELY SLOW

Altho farming is a relatively stable business, changes in the relative importance of the various enterprises are constantly being made. Such shifts tend to equalize profits in the different lines of production and

also to keep the prices of different commodities in about the same relationship with each other unless permanent changes occur either in the cost of production or in demand. But many of the changes necessary to maintain such equality require time. The changes necessary to keep the prices of corn and hogs in a fairly definite relationship to each other can be rather quickly made and hence over a series of years a fairly definite relationship is maintained between their average prices. But the changes in farm practices made desirable by a cheapening of oats in relation to butter require a long time. The necessary changes involve capital investments in animals and frequently in buildings, and furthermore it becomes necessary for the farmer concerned to learn the details of properly caring for and managing a dairy herd. Eventually the changes necessary to equalize returns between the two lines of production will be made, but a considerable interval may elapse before the process is completed.

The time interval required by any adjustment of this type creates opportunities for the men who are successful in making the change quickly to obtain above-normal profits for the period during which the changes are being made by other farmers who are slower to adjust.

SITUATION FOR INDIVIDUAL COMMODITIES

In the following pages individual products will be considered, arranged in the order of their price position from 1921 to 1928 with some grouping of related items.

HORSES, HAY, AND OATS

The circumstances influencing the prices of horses, hay, and oats are similar. One of the most important outlets for hay and oats has been as horse feed. With the decline in number of horses the demands for all products have been reduced and prices have been lowered. For this reason the three are grouped together for discussion.

Horses

During the period under discussion, horses were relatively lower in price than any of the other commodities considered in this study. The average farm price of horses in 1910-1914 was \$152 a head; from 1921-1928, \$86; and in 1929, \$86. Both the 1921-1928 average price and the 1929 price were 57 percent of the 1910-1914 price. The fact that the price of horses was at a relatively high level in 1910-1914 tends to make prices during the recent period appear more unfavorable

than would have been the case if the comparison had been made with prices during a complete horse-price cycle. Prices of horses in 1910-1914 were at such a level that a decline would likely have come even tho the demand for horses had not been diminished by the increased use of mechanical power, for the high prices of the 1910-1914 period were stimulating an increase in numbers of horses.

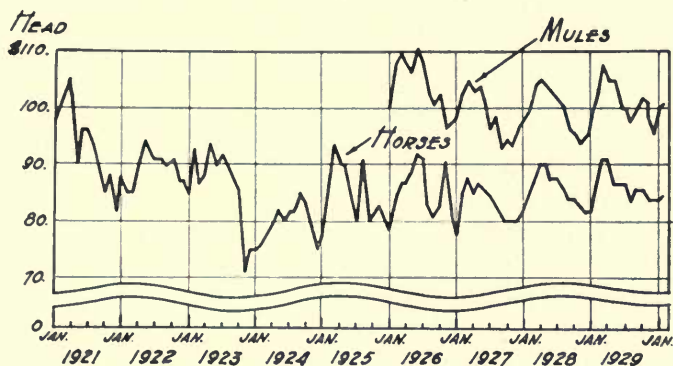


FIG. 3.—HORSES AND MULES 1921 TO 1929, MONTHLY ILLINOIS FARM PRICES

After a downward movement from 1921 to 1923, the reported farm price of horses has been rather stable. From 1925 thru 1929 the price averaged about \$85, with a range from about \$80 to \$90 a head. These prices refer to sales of average farm horses, the age of which is steadily increasing. Prices for mules since January, 1926, which is the only period for which prices have been available, show a trend similar to that of horses.

The above averages refer to farm prices. The horses on Illinois farms averaged older for the 1921-1928 period than for the 1910-1914 period because of a decline in breeding operations. This advanced age explains the low level of prices in part. The average prices for draft horses in Chicago, as quoted in the yearbook of the *Chicago Daily Drovers Journal*, were \$207 in 1910-1914, \$166 in 1921-1928, and \$165 in 1929. The 1921-1928 average and the 1929 price were both approximately 80 percent of the 1910-1914 price. Altho these prices are somewhat higher than farm prices, they indicate that horses have been much lower in price than during the pre-war period.

The decline in the demand for horses reflects the wide adoption of other forms of power and the tendency for farm operations to decline in some sections of the country. Between 1909 and 1928 the number of horses and mules in cities declined by about two million head, or from 3.4 millions to about 1.4 millions. The purchase of re-

placements for horses used in cities made up an important part of the market demand for horses. Between January 1, 1918, and January 1, 1929, the number of horses on the farms and ranches in the United States declined by about 7.5 million head. During the same period the number of mules increased by about one-half million head. Most of this increase was in the South, where tractors have not been so widely adopted.

The production of horses requires but little labor; the chief items in the cost of raising them are pasture, roughages, and feed grains, all of which in recent years have been relatively cheap. These circumstances would operate to keep up the production of some colts even tho prices for horses were low. All available statistics, however, show that up to 1930 sufficient colts were not being raised to replace the number of horses now in use.

The distinct shortage of horses which may result from the reduction in numbers of colts may lead to considerably higher prices than those which prevailed in 1921-1928, but in the long run the substitution of other forms of power will operate to hold down the price of horses. The tendency will be for producers who have relatively low costs, because of location or for some other reason, to raise the fewer colts needed to maintain the number of horses and mules required under the new conditions.

Exports and imports of horses are very small and have no effect on the market for the ordinary class of horses. The import duty of \$30 per head imposed by the Tariff Acts of both 1909 and 1922 represents a much higher duty in relation to the value of horses in recent years than it represented from 1909 to 1913.¹

¹The Tariff Act of 1909 was in effect from August 6, 1909, to October 13, 1913. While this did not cover completely the period used as a base in the indexes referred to in this bulletin, 1910-1914, it covers the greater part of the period. So also the Tariff Act of 1922, which did not go into effect until September 21, 1922, does not cover quite all the 1921-1928 period. In the latter period, however, the Emergency Tariff Act, with somewhat similar rates on agricultural products, went into effect on May 27, 1921, and this goes back nearly to the beginning of the period.

The rates given in this publication should not be confused with those made effective by the Act of 1930. The rates in this publication on items referred to are as follows: horses, \$30 per head, or 20 percent ad valorem if worth more than \$150 a head; hay, \$5 a ton; oats, 16 cents a bushel; barley, 20 cents a bushel; corn, 25 cents a bushel; wheat, 42 cents a bushel; swine, 2 cents a pound; pork, fresh, 2½ cents a pound; hams, 3¼ cents a pound; cattle weighing less than 700 pounds each, 2½ cents a pound, 700 pounds or more each, 3 cents a pound; beef and veal, 6 cents a pound; sheep and lambs, \$3 a head; mutton, 5 cents a pound; lamb, 7 cents a pound; wool, in the grease or washed, 34

Hay

The average farm price of hay in Illinois was \$13.95 a ton in 1910-1914; \$13.75 in 1921-1928; and \$11.67 in 1929. The 1921-1928 price averaged 99 percent of pre-war. The lower price in 1929, which was only 84 percent of pre-war, reflected the influences of a larger crop. That there was no tendency for hay prices to rise during the period under consideration is indicated by the fact that in 1921-1924 hay prices averaged 102 percent of the 1910-1914 prices, while in 1925-1928 they averaged only 95 percent.

Decreased demand and low cost requirements are the most important causes for the low prices. A large part of the hay that entered into commerce was used for feeding work animals, chiefly mules on southern farms and horses in cities. The decline of two million head in the number of horses in cities has reduced the market demand for hay by perhaps 5 million tons. At the same time the local production of hay has been increasing in the southern states. The decline in the number of work animals on farms of about 7 million head has released a large amount of hay for other uses.

The total hay crops of the United States averaged about one-third larger annually from 1921 to 1928 than from 1910 to 1914. That this increase was in part the result of heavier yields per acre is indicated by the fact that on a total national acreage only about 12 percent larger in 1921-1928 than in 1910-1914, about 30 percent more hay was grown annually. The entire increase in acreage occurred prior to 1921; from 1921 to 1928 the area of tame hay was maintained at around 60 million acres. The increase in yield per acre was caused by increased acreages in more productive areas as well as by improvements in practices connected with hay production.

Four good reasons may be suggested for the maintenance of hay acreage in spite of low prices. First, most farmers pay little attention to the price of hay; they are interested in hay only as a feed to be used in producing marketable products, such as cattle, milk, lambs, or wool. Second, the production of hay requires little labor and hence is favored at a time when farm costs are high in relation to returns. Third, hay is extensively grown on land not well adapted to other crops; it is either hay or pasture or nothing for a great deal of the

cents a pound of clean content; eggs in the shell, 10 cents a dozen; chickens, live, 8 cents a pound, dressed, 10 cents a pound; butter, 14 cents a pound; red clover seed, 8 cents a pound; apples, 25 cents a bushel; potatoes, 45 cents a bushel. In general these rates are higher, altho not much higher, than the rates in the Act of 1922.

land in hay. Fourth, certain kinds of hay make a desirable addition to most cropping systems and the tendency to adopt better crop rotation in some sections of the country has tended to increase hay acreages. Increases in acreage of hay have occurred chiefly in those sections of the country where there has been a tendency to diversify agricultural production. The fact that hay acreages have been maintained in spite of low market prices indicates that farmers thought

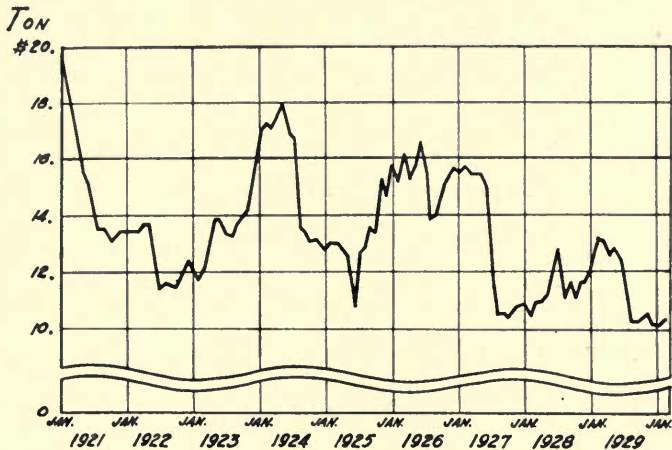


FIG. 4.—HAY 1921 TO 1929, MONTHLY ILLINOIS FARM PRICE

During this period the general trend in the price of hay has been downward. No definite seasonal variation can be observed. The influence on prices of short supplies early in 1924 and of a very large crop in 1927 is clearly visible.

that hay production was the most profitable use to which they could put about 60 million acres of land under the price and cost conditions which have prevailed.

Hay is a bulky product and has a low value per pound. This fact tends to cause the costs of marketing to be high in relation to its value. Marketing and transportation costs have been relatively high during the period under consideration. This has tended to reduce the prices paid to farmers for hay.

Neither exports nor imports have much significance in the hay situation. The import duty of \$4 a ton provided under the Tariff Act of 1922 probably prevented the importation of some hay.¹

The factors which operated to keep hay low in price during this period will probably continue during the next few years. This means

¹See footnote page 526.

reduced gross incomes for farms which produce hay for sale, but on farms where hay is grown as a feed crop the continuation of low prices will be of little or no significance. Acreages are likely to increase rather than to decrease for the following reasons: the demand for livestock and livestock products is increasing; hay production involves comparatively little cost, and some kinds of hay have considerable value as soil-building crops.

Oats

Oats have been one of the cheapest of the commodities studied, the Illinois farm price averaging 38 cents a bushel for 1910-1914, 40 cents for 1921-1928, and 42 cents in 1929. The 1921-1928 price averaged 104 percent of the 1910-1914 price; and the 1929 price, 110 percent of the 1910-1914 price. The principal reason for these relatively low prices was the decline in numbers of horses, altho a relatively low corn price was also a factor.

Oats were worth more per pound than corn in the 1910-1914 period but were cheaper in the 1924-1928 period. In the earlier period the Illinois farm price of oats was equivalent to 1.19 cents a pound; compared with 1.04 cents for corn. For 1924-1928 corresponding figures for oats were 1.31 cents and for corn, 1.41 cents. The decline in the relative price of oats reflects the loss of the special market for them.

The price averaged relatively better during the last four years of this period than during the first four. During 1921-1924, it averaged 99 percent of the 1910-1914 price, while during 1925-1928 it was 109 percent.

Illinois is a leading state in the marketing of oats. During 1922-1926 about 60 million bushels, or 43 percent of the state's crop, was marketed annually.

This tendency for oats to decline in value began some years ago. Except for the war years the peak of oats prices came in 1908.

The decline in the number of horses in cities has reduced the market for oats by the equivalent of at least 200 million bushels. The quantity marketed in the country as a whole in 1921-1927 averaged only about 30 million bushels less than the quantity marketed in 1910-1914. Stocks of oats in terminal markets have averaged larger than formerly. On the first of December during 1910-1914 the quantity of oats being stored in market centers (the visible supply) averaged 22 million bushels, and during 1921-1927 it averaged 46 million bushels. Exports also increased from about 10 million bushels a year for the five years beginning July 1, 1909, to 20 million bushels a year for the seven years beginning July 1, 1921. These are signs that the market-

ings were too large to permit of rapid consumption. While all the oats marketed were finally consumed, comparatively low prices were necessary to move them into consumption.

From 1921 to 1928 both United States acreage and the total production of oats averaged about 13 percent larger than from 1910 to

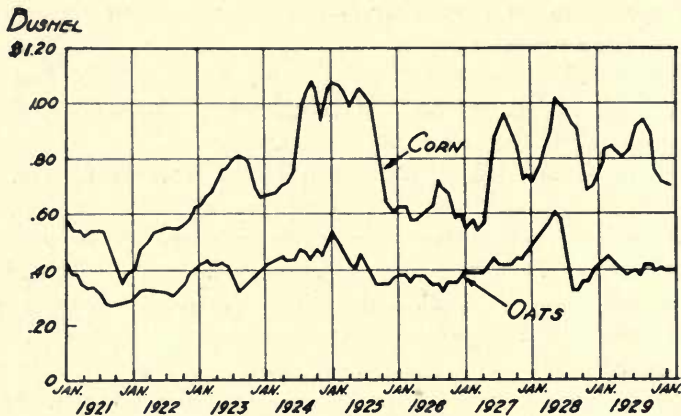


FIG. 5.—CORN AND OATS 1921 TO 1929, MONTHLY ILLINOIS FARM PRICES

During the first half of this period the price of corn increased rather steadily from the low level reached in 1921-22, when for four months it averaged below 40 cents a bushel. The short crop in 1924 held the price slightly over \$1 for nearly a year. During the decline which came with the better crops of 1925 and 1926, the price went down to a harvest-time level of below 60 cents. Recovery in price followed with the short crop of 1927, and during 1928 and 1929 the price fluctuated between 70 cents and \$1. In general, changes in oats prices have been similar to those in corn prices during this period.

1914. The increase of approximately 5 million acres between these two periods occurred between 1914 and 1921, there being no visible trend between 1921 and 1928. The estimated world production of oats outside of Russia and China averaged practically the same in 1921-1928 as in 1909-1913. These increases in production are not sufficient to explain the relatively low price of oats, altho the larger acreage in the United States thruout this period tended to keep the price low.

The question may be asked: Why has the acreage of oats been maintained in the face of low prices? The reasons are similar to those suggested for hay: oats are largely fed on farms where grown; they require little labor; the crop has a definite place in rotations; the low

labor requirements may make them a profitable crop for tenant farmers even tho gross returns are low. The increases in acreage between 1914 and 1921 were chiefly in sections which were developing a more diversified type of farming.

Imports of oats are typically very small; for the seven years beginning July 1, 1921, they averaged about 1.4 million bushels a year. The import duty of 15 cents a bushel imposed by the Tariff Act of 1922 shut off some imports from Canada but had very little influence on the Illinois farm price.¹

Oats are a bulky product with a low value per pound and, like other products of similar nature, have been adversely influenced by the increased costs of transportation and marketing.

The trend in oats prices over the next few years will depend on the trend in the prices of feed crops in general and of corn in particular. Oats may be expected to be relatively cheaper than corn until there are further reductions in the quantities marketed. The adjustment involved is not so much a question of growing fewer acres of oats but rather of selling fewer bushels of oats. The correction of this situation lies, not with oats producers as a group, but with those who produce for the cash market. In spite of any adjustments that may be made, the loss of an important part of the market for oats will tend to keep them relatively low in price for a considerable period of time.

BARLEY

Compared with pre-war prices, barley has been a cheap crop during the 1921-1928 period as a whole. The average Illinois farm price of barley was 63 cents a bushel in 1910-1914, 65 cents in 1921-1928, and 53 cents in 1929. The 1921-1928 average was 103 percent of 1910-1914, and the 1929 average was 84 percent. This unfavorable showing is partly due to the fact that barley was relatively higher than the other feed grains in the pre-war period. For 1910-1914 the value of a pound of barley at the average Illinois farm price was 1.31 cents, compared with 1.04 cents for corn and 1.19 cents for oats. During the earlier period barley enjoyed a special cash market as a raw material for the brewing of beer, which fact raised its price above the level of other feed grain prices.

The barley situation strengthened during the period from 1921 to 1928. During the first four years the price averaged 96 percent of the 1910-1914 price; during the last four years it averaged 110 percent of 1910-1914.

¹See footnote page 526.

Prohibition has reduced the demand for barley. The 50 million bushels of barley used annually by brewers before the war constituted approximately 30 percent of the barley crop. Available data indicate the quantity used in the manufacture of malt products has been considerably less than this.

The reduction of the demand for barley for brewing made necessary the increased use of the foreign market for this grain. Exports of barley were very irregular in the pre-war period. During the five years beginning July 1, 1909, they averaged about 8 million bushels

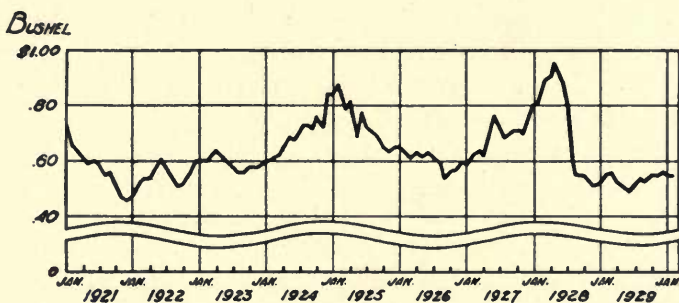


FIG. 6.—BARLEY 1921 TO 1929, MONTHLY ILLINOIS FARM PRICE

From 1921 to 1928 the general trend in barley prices was upward. The peak in 1924-25 was followed by a decline which continued until September, 1926. The price then rose steadily until May, 1928, when it declined sharply. During 1929 a very low level prevailed.

annually. During the six years beginning July 1, 1920, and ending June 30, 1927, they average 24 million bushels annually, a figure which was three times the pre-war average, and during the next two years, July 1, 1927, to June 30, 1929, they increased to an average of about 50 million bushels annually.

Until 1927 the acreage of barley in the United States was barely maintained at the pre-war level of 7 to 8 million acres, but in 1927 and 1928 it was sharply increased. There were 12.6 million acres harvested in 1928. Estimated world production outside of China and Russia for 1921-1928 was practically the same as the 1909-1913 average.

Farmers in the United States reacted to the relatively low barley prices by reducing the quantities which they marketed even tho they did not reduce acreages. Estimates of the quantities marketed averaged 95 million bushels for the 1910-1914 crops and about 65 million bushels for the 1921-1926 crops. The sum of the amounts by which

marketings decreased, and exports increased just about equalled the decline in the quantity used in brewing. But the quantities marketed from the 1927 and 1928 crops increased to an average of a little over 100 million bushels as a result of the increase in exports stimulated by an expansion in livestock production in northern Europe and by short feed crops in various foreign countries.

Imports of barley are very small, usually amounting to only a few thousand bushels annually. Barley is one of the few farm products the import duty on which was lower in the Tariff Act of 1922 than in the Act of 1909, the rate having been reduced from 30 to 20 cents a bushel.¹ This duty had little or no effect on the Illinois farm price during the period under consideration. The principal reasons for the relatively low level of barley prices during this period were the reduction of the special demand for the grain in the manufacture of malt liquors and the generally lower level of prices for feed crops.

The price of barley has tended to reach a point which measures its comparative value as a feed. At the average Illinois farm prices from 1924 to 1928 the value of a pound of barley was 1.44 cents compared with 1.41 cents for corn and 1.31 cents for oats. The close agreement between the value of barley and corn per pound indicates that changes in the level of barley prices during the next few years will depend on the trends in the price of corn.

CORN AND HOGS

The situations for corn and hogs are similar. The Illinois farm prices of both averaged in 1921-1928 about one-fourth higher than in 1910-1914. It is not surprising that the prices of these two products had about the same relative position. The largest single use to which corn is put in the country as a whole is to feed hogs; hence the price at which hogs can be marketed has a great influence on the price of corn over a period of years. Conditions that have made possible the relatively large production of hogs during 1921-1928 have operated to hold down the price of both corn and hogs in this period.

Corn

The average price of corn per bushel by periods was 1910-1914, 58 cents; 1921-1928, 72 cents; and 1929, 84 cents. The 1921-1928 price was 124 percent of the 1910-1914 price. During the first four years, 1921-1924, the price averaged 112 percent of 1910-1914; and during the second four, 1925-1928, it averaged 136 percent.

¹See footnote page 526.

This relatively low price cannot be explained on the basis of increased production. For the eight years 1920-1927 the corn crops of this country averaged only about 6 percent larger than in 1909-1913. The small increase in corn crops during the 1920-1927 period was caused entirely by favorable yields per acre during the first half of the period. Comparative acreages and yields in the first and second halves of the period were as follows:

	1920-1923 (Percentage of 1909-1913)	1924-1927
Acreages of corn	99	96
Yields of corn.....	113	98

Relative Stability of Corn Acreages. The acreage of corn is more stable than the acreage of any of the other major crops of the country except possibly hay. This is illustrated by the data in Table 2.

TABLE 2.—AVERAGE YEARLY CHANGE IN ACREAGE, YIELD, AND TOTAL PRODUCTION OF SELECTED CROPS IN UNITED STATES, 1900-1926
(Expressed in percentage variation from previous year)

Crop	Acreage	Yield per acre	Total production
Corn.....	2.6	13.0	14.5
Cotton.....	8.0	11.2	16.9
Flaxseed.....	20.3	20.6	29.0
Tame hay.....	2.5	8.2	10.0
Oats.....	3.2	17.0	17.6
Potatoes.....	4.9	17.1	19.7
Tobacco.....	10.1	5.0	10.0
Wheat, winter, harvested ¹	14.9	9.5	18.1
Planted ¹	7.3	16.5	18.1
Wheat, spring ¹	9.4	32.6	30.7

¹1910-1926 instead of 1900-1926.

The United States acreage of corn each year from 1900 to 1926 varied from the previous year by an average of only 2.6 percent. Comparable figures for other important crops are tame hay, 2.5 percent; oats, 3.2 percent; winter wheat (planted acreage), 7.3 percent; and cotton, 8.0 percent. These figures indicate that the acreage of corn has not reacted in response to price changes in the same way as have the acreages of two other major crops, wheat and cotton. Expansion in corn acreage has not taken place in response to favorable price because the acreage of good corn land is limited, and all regions where conditions are favorable now grow the crop extensively. Moreover, there is a limit to the proportion of land which can be put into corn on individual farms without developing an unbalanced business.

For various reasons farmers do not readily reduce the acreages planted to corn. First, the crop has a fixed position in the crop rota-

tion in many parts of the country. Second, most of the crop is grown for feed purposes and hence its producers are not directly influenced by its price. Third, much of the acreage is on high-priced land which tends to remain in cultivation irrespective of conditions. Fourth, the weather has much to do with the final yield; from 1900 to 1926 the yield per acre varied, on an average, by 13 percent from that of the previous year. This is five times the variation that occurred in acreage.

The acreage of corn in the United States during the 1924-1927 period averaged 4 percent less than in 1909-1913. If there had not been expansion in the acreage of corn in parts of the North-Central states, where diversified farming was replacing a system in which wheat production was the major feature, the acreage of corn would have been further reduced. The maintenance of acreage in the face of low prices indicates that in the opinion of farmers corn production was a more profitable method of utilizing the land planted to corn than any other which was available.

Changes in Utilization of Corn. There have been some changes in the uses to which the corn crops of the United States have been put in recent years. The decline in the number of horses has somewhat reduced the demand for corn as well as for other feed grains. Moreover, the steady decline in number of beef cattle in this country from 1921 to 1928 temporarily reduced the quantity of feed required by that branch of agriculture. The changes in cattle numbers are discussed at greater length on pages 543 to 547.

The quantity of corn used as human food in this country has apparently declined, and increases in quantities used by corn-products factories have not been sufficient to maintain the commercial demand for corn. The quantities of corn ground into meal in merchant mills is reported by the Bureau of the Census, U. S. Department of Commerce, to have been as follows:

Corn ground into meal (millions of bushels)

1909.....	209.3	1923.....	125.2
1914.....	180.1	1925.....	105.3
1919.....	113.8	1927.....	92.7
1921.....	122.2		

The quantities for the four years from 1921 to 1927 for which figures are available averaged 111 million bushels, compared with an average of 195 million in 1909 and 1914. This indicates a decline of nearly 100 million bushels in the quantities used annually for the manufacture of corn meal. The figures above indicate that there has been a decrease each year since 1923 for which figures are available. This decline indicates a shift away from direct use of cereals as human food.

Reports of the Commissioner of Internal Revenue indicate that about 15 million fewer bushels of corn and 10 million fewer bushels of other grains were used annually by licensed distilleries in recent years than before 1914. This decline is the result of competition with a cheaper raw material, black-strap molasses, for the quantity of alcohol legally manufactured has increased rather than decreased between the periods under consideration. Before 1914 it appears that about 15 million bushels of corn were used annually by brewers.

Partly offsetting these declines in the consumption of corn for the uses noted above has been a rapid increase in the quantity used by corn-products factories making such products as starch, corn sugar, and gluten. The quantities ground by these plants annually averaged 48.1 million bushels in 1913-1914; 66.7 million bushels in 1921-1924; and 79.7 million bushels in 1925-1928. There has also developed a market for several million bushels of corn in the manufacture of butyl alcohol, which is used in the manufacture of lacquers. On the whole, however, these new industrial uses for corn have not expanded sufficiently to offset the decline in other uses, particularly in the manufacture of corn meal. The net quantity by which the corn absorbed in this country in industrial uses has declined has been available for export or for feed.

Quantities of corn marketed in this country, as measured by estimates of the U. S. Department of Agriculture of quantities shipped from the county where grown, indicate a decline in commercial uses of corn. Averages based on these estimates, together with figures showing exports and quantities apparently available for commercial uses other than export, for selected periods, follow:

<i>Corn crops</i>	Shipped from	Exported	Available for
	county where grown		commercial uses other than export
	<i>(Millions of bushels annually)</i>		
1909-1913	580	41	539
1920-1923	603	92	511
1924-1927	486	18	468

Altho the above figures furnish only a crude measure of the quantities of corn marketed, they indicate that the quantity marketed during the 1920-1923 period was kept above the pre-war level only by large exports, an increase of about 50 million bushels in exports a year more than offsetting a decline of about 30 million bushels in other commercial uses. In the more recent period, 1924-1927, both exports and other commercial uses declined so that the quantity marketed aver-

aged about 90 million bushels less than for the 1909-1913 crops. The 70 million bushels represent a decline of 20 million bushels in exports and a decline of 70 million in other uses. These 90 million bushels have been available for various farm uses and have helped to keep the production of pork at a high level.

Exports and Imports. The large crops and low prices from 1920 to 1923 led to increased exports of corn. The average annual exports by periods beginning on July 1 of the years indicated were as follows:

<i>Corn exports</i>	<i>Millions of bushels annually</i>
1909-1913.....	41
1920-1923.....	92
1924-1927.....	18

Exports averaged larger during the period of large production and low prices (1920-1923) than during the following four years. These larger exports absorbed the surplus corn marketed during these four years and strengthened prices even tho such exports were made in a period of very low prices. The difference in corn exports between 1920-1923 and 1924-1927 illustrates the normal situation with respect to corn exports. We export in volume usually only at bargain prices. It is only rarely that we can export a considerable volume of corn at favorable prices. We were able to do this in marketing the 1928 crop because of short corn crops and expanded livestock production in certain foreign countries. During the years when our exports have been small, a large part of them have gone to Canada.

World production of corn has not increased much in this post-war period. Estimated world production exclusive of Russia averaged 4,140,000 bushels for 1909-1913 and 4,380,000 bushels for 1920-1927, an increase of about 6 percent. The small amount of this increase is not surprising in view of the fact that the United States production, which makes up such a large part of the world production, has not increased. The increase of 240 million bushels does indicate, however, that there has been a rather marked increase in foreign countries.

The imports of corn into this country are very small, the yearly average since 1921 having been slightly less than 2 million bushels. Imports were largest during the years beginning July 1, 1924 and 1927, when they amounted to 4,618,000 and 5,463,000 bushels respectively. The import duty of 15 cents a bushel in effect during this period raised the price level slightly when corn was high in price but had no influence at other times. An increase in this duty would make the price rise slightly higher when corn is scarce, but would have no influence during

the greater part of the time.¹ It would therefore tend toward greater variability in corn prices but would have little influence on the average price over a series of years.

Corn Prices as Related to Hog Prices and Production. An important factor in determining the level of corn prices has been the level at which our hog production could be sold. Hog prices for 1921-1928 averaged 124 percent of 1910-1914 prices, or were in the same relative position as corn prices. This level of hog prices seems to have been due in large measure to increased output of pork. The fact that such a large part of the corn crop goes to market in the form of hogs makes it inevitable that the prices of corn and hogs will maintain approximately the same relative position over a series of years.

Hogs

The average Illinois farm prices of hogs, per 100 pounds, were \$7.44 in 1910-1914; \$9.23 in 1921-1928; and \$9.78 in 1929. The 1921-1928 price averaged 124 percent of the 1910-1914 price. In the second four years the price was considerably higher than in the first. Prices for 1921-1924 averaged 106 percent and for 1925-1928, 143 percent of the 1910-1914 price.

Unlike corn, pork was produced in substantially larger amounts during the eight-year period 1921-1928 than in the pre-war years 1910-1914.

<i>Official estimates of slaughter</i>	1921-1924	1925-1928
	<i>(Percentage of 1910-1914)</i>	
<i>Pork</i>		
Total slaughter.....	137	135
Inspected slaughter.....	149	147
<i>Lard</i>		
Total slaughter.....	155	147
Inspected slaughter.....	180	165

While the production of corn during 1924-1927 averaged slightly below the pre-war production, the estimated production of pork in 1925-1928 was 35 percent and that of lard 47 percent above pre-war production. In spite of the fact that pork and lard production were nearly as large in 1925-1928 as in 1921-1924, Illinois farm prices for hogs averaged about 35 percent higher in the second period than in the first. This suggests a strengthened demand situation.

Comparative numbers of hogs do not indicate any such increase in hog production as do the figures that have just been given. Averages of the estimated number of hogs on farms in the United States on January 1 for selected periods were as follows:

¹See footnote page 526.

<i>Hogs on farms January 1</i>	Number	Percent of 1910-1914
1910-1914.....	53,300,000	100.0
1921-1928.....	59,600,000	111.7
1921-1924.....	63,400,000	118.9
1925-1928.....	55,800,000	104.5

For the 1921-1928 period there were only 12 percent more hogs on farms in the United States than for the pre-war period. During the four-year period 1925-1928 the number was only about 4 percent above pre-war. If these estimates of numbers and the slaughter figures given above are both correct, there has been a considerable increase in the rate of turnover in the business, and the annual output of pork per hog on farms on January 1 has been greatly increased.

Why Has Pork Production Increased Relatively More Than Corn Crops? Granted that there may be some error in the estimates either of pork production or of numbers of hogs on farms during the above periods, it would appear that the increase in pork production has been relatively larger than the increase in corn production since 1920, and that the margin between the two products was wider in 1925-1928 than in 1921-1924. Is there any explanation for this variation between the output of corn and hogs? Four factors have contributed: (1) the decline in feed needed for other farm animals, (2) the decline in the total quantity of corn used commercially, (3) a shift in hog production to areas where production is more efficient, and (4) more efficient pork production. The first two of these factors have been discussed in the section dealing with corn. We shall therefore deal here only with the last two factors.

The exact extent to which shifts in centers of production are influenced by efficiency of production is difficult to measure, but unquestionably this factor has had an influence on pork production during the period under consideration. Rather significant changes took place in the geographical distribution of hogs between 1920 and 1925 and very slight changes between 1925 and 1929. In 1920 about 37 percent of the hogs in the United States were in the West North-Central states; in 1925 the proportion had increased to 50 percent. In 1920, 31 percent of the hogs of the country were in the South Atlantic and South Central states; in 1925 only 20 percent. Changes in other sections were small, altho there was a tendency for production in both the North-Atlantic and East North-Central states to decline in relative importance. This tendency toward concentration, which has brought half of the hogs in the country into the West North-Central states, where hog production is conducted rather efficiently, accounts for a part of the increase in the output of pork.

The influence of the adoption of improved practices on the volume of pork produced is difficult to measure but undoubtedly it has been substantial. Theoretically the influence which the general adoption of certain improved practices may have is very large. Lack of definite knowledge as to how widely these practices have been adopted makes exact analysis of the question very difficult. The small amount of expense involved in the adoption of some of these practices suggests,

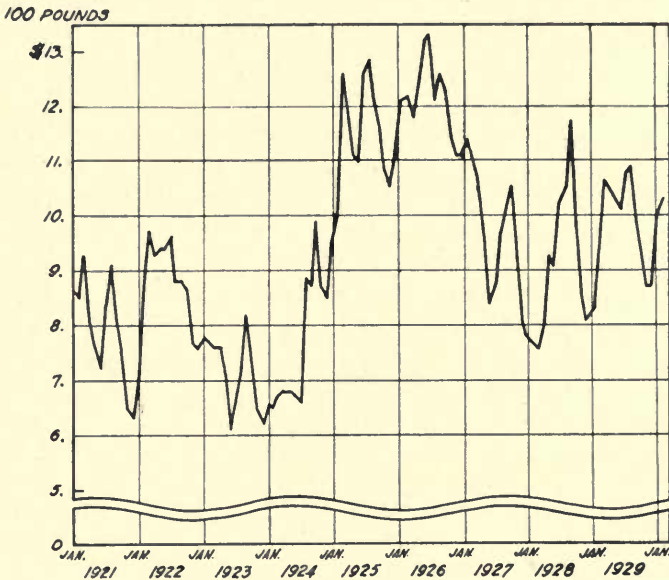


FIG. 7.—HOGS 1921 TO 1929, MONTHLY ILLINOIS FARM PRICE

The trend in the price of hogs since 1921 may be divided into two periods: one of relatively low and declining prices which ended in midsummer of 1924, and one of higher prices since that time. Shorter crops of corn in the second period and a better demand for pork have made possible a better balance between production and demand.

however, that improvements have had considerable to do with the increase in pork production. Reduction of losses from hog cholera between the periods under consideration is one of the important factors in this increase in the efficiency of pork production.

It should be noted that all four factors that have been mentioned—namely, reduction in feed requirements of other types of animals, decline in the quantity of corn used commercially, concentration of hog production in areas where production is efficient, and the adoption of improved practices—are permanent influences. A series of large corn

crops such as this country experienced from 1919 to 1923 inevitably results in increased production of pork but the influence is only temporary. Once the crop is consumed it can have no further effect. But the increase caused by such factors as are enumerated above tends to remain permanent. Relatively large corn crops played an important part in the increased production of pork from 1921 to 1924, but no part after 1924.

Whatever the causes for the increased output of pork during 1921-1928, the increase has operated to reduce prices of both hogs and corn. The level of corn prices cannot rise for any length of time above the level of hog prices. If corn prices rise too high in relation to hog prices, hog production will be curtailed because it will become more attractive for some farmers to sell corn than to feed it to hogs. Moreover, hog prices cannot rise above corn prices for any length of time because such favorable hog prices would stimulate the production of hogs and reduce the sale of corn.

This increased output of pork during a period when corn production was not quite holding its own is one of the most important factors in the relatively low prices for these products.

Domestic Consumption and Exports of Pork and Lard. The increase in the production of pork noted above made it possible to maintain the per capita consumption of meat in this country during 1921-1928 slightly above the 1910-1914 level and to permit exports of meat in the period as a whole to exceed the pre-war level. The data for different classes of meat are shown in Table 3.

The apparent per capita consumption of pork and exports of pork during the periods under consideration averaged as follows:

<i>Consumption of Pork</i>	Domestic <i>Pounds per capita</i>	Total exports <i>Millions of pounds</i>
1910-1914	61.7	422
1921-1928	69.3	601
1921-1924	69.8	795
1925-1928	68.9	406

Thus pork exports, which were nearly double the pre-war level in 1921-1924, declined in 1925-1928 to a point slightly below the pre-war level. The decline in exports between 1921-1924 and 1925-1928 helped to maintain the per capita meat consumption in this country. If we continue our domestic meat consumption at the level of recent years, it appears likely that all the pork produced in this country will be required for domestic consumption within a comparatively short period. This does not mean that exports will cease, but that they will be con-

TABLE 3.—INDEX NUMBERS OF PRODUCTION, EXPORTS, TOTAL CONSUMPTION, AND PER CAPITA CONSUMPTION OF MEAT AND LARD IN THE UNITED STATES, 1921-1928 (1910-1914 average = 100)

Product	Inspected slaughter	Total slaughter	Exports 1921-1928	Consumption	
				Total	Per capita
Beef.....	124.2	111.1	49.4	112.3	93.3
Veal.....	206.2	147.5	0	148.6	117.2
Pork.....	148.0	135.8	142.4	135.0	112.3
Lamb and mutton.....	86.2	85.8	75.0	86.5	73.0
Total meat.....	134.9	122.8	127.1	122.6	102.1
Lard.....	173.0	151.0	162.2	145.4	120.9

fined to those pork products which the foreign markets will take on a strong price basis.

The production of lard per capita also averaged larger in 1921-1928 than in 1910-1914. The amount of lard available for consumption per person in the United States, after allowing for the actual exports, and also the exports of lard averaged as follows:

<i>Consumption of lard</i>	Domestic <i>Pounds per capita</i>	Total exports <i>Millions of pounds</i>
1910-1914.....	11.5	519
1921-1928.....	13.9	842
1921-1924.....	14.0	941
1925-1928.....	13.8	742

It will be observed that exports of lard held up better in 1925-1928 than exports of pork.

Altho lard has been relatively cheaper than the leading kinds of pork cuts, comparative prices of heavy and light hogs apparently have not differed sufficiently to overcome the desire of farmers to convert available feed supplies into hogs of the heavier type, which yield more lard. The tendency for hog production to concentrate in the corn belt has of course favored the production of the heavier type of hog. Packing-house practice may also have tended to increase the production of lard in proportion to pork. In view of the apparent tendency toward a better balance between production and demand for meat than for fats, there should be a tendency for meat prices to rise in relation to lard prices. Under these conditions prices of different types of hogs should more fully reflect the less favorable market position of lard.

Production of Fats. Not only has the output of lard in this country been large, but also the output of fats and oils generally. The quantities of fats consumed annually in the United States in 1914, 1920-1921, and 1925-1926 have been reported as follows:¹

¹Wright, Philip G. The tariff on animal and vegetable oils, 266-267. Macmillan Co. 1928.

<i>Consumption of fats</i>	1914	1920-1921	1925-1926
	<i>(Millions of pounds annually)</i>		
Vegetable oils.....	2,501	2,207	3,452
Animal and fish oils and fats.....	2,793	3,055	3,876
Total.....	5,294	5,262	7,328
Index of production.....	100%	99.4%	138.4%

These figures include, not only the principal food fats and oils, such as lard, butter, and cottonseed oil, but also the paint oils such as linseed, and the soap oils such as palm oil, greases, and tallow. The combined figures indicate that while the annual consumption for 1920-1921 barely equalled that of 1914, the consumption in 1925-1926 was nearly 40 per cent larger than in 1914. It has further increased since 1926.

This rapid increase in the output of fats generally has tended to depress lard prices and to hold down hog values.

Influence of Foreign Conditions. As shown above, the exports from this country of both pork and lard during 1921-1928 exceeded the pre-war level. During the latter years of the period, exports of pork exclusive of lard tended to fall off, while exports of lard held up. The buying powers of European countries were weakened by the war. The necessity of selling large exports in a weak foreign market has tended to lower prices in this country. The basic reason for the large exports and low prices was the increase in production in this country.

The estimated number of hogs in the world averaged about the same in 1921-1925 as in 1909-1913; estimates for 1909-1913 are 261 million head and for 1921-1925, 259 million. Until 1925 low hog prices in the United States, therefore, did not reflect an increase in world numbers. From 1925 to 1928 marked increases occurred, particularly in northern European countries. This increase has lowered the demand for our pork and lard.

We have import duties on swine and the important hog products, but because of the large and continuous exports of pork and pork products, it is obvious that these duties have very little influence on hog prices in this country.¹ Very few swine and very small quantities of pork are imported into the United States, but the necessity of exporting large quantities of pork, and particularly of lard, cause foreign conditions to be of significance to our corn and hog producers.

BEEF CATTLE, MILK COWS, AND VEAL CALVES

Ranking next to corn and hogs on the basis of relative prices for the 1921-1928 period are cattle and milk cows. During 1929, however,

¹See footnote page 526.

their prices were much higher. The position of the price of cattle and the price of milk cows in relation to pre-war prices has been practically identical during this period, and the two may properly be discussed together.

During 1921-1928 the farm price of both milk cows and other cattle averaged 126 percent of the 1910-1914 price; but in 1929 the price of milk cows averaged 186 percent of pre-war prices, and the price of other cattle, 177 percent. The price of cattle was in a favorable position in our base period, 1910-1914, a circumstance tending to lower the indexes for other years. The period from 1921 to 1926 was in the low portion of the cattle cycle. When we compare the averages of 1921-1928 with 1910-1914, we are in fact comparing prices near the bottom of a cattle cycle with prices near the top. With the level of cattle prices so high during the base period, it is evident that the index figure of 177 for 1929 represents an extremely high price.

Beef Cattle

The chief product of the beef-cattle industry is meat. The relative production and consumption of various kinds of meat in the United States are shown in Table 3, page 542. These figures are based on the slaughter in federally inspected plants and estimates of slaughter on farms and elsewhere as compiled by the U. S. Department of Agriculture.

For the entire eight-year period 1921-1928, 11 percent more beef was available for consumption annually in the United States than for the five-year period 1910-1914. The increase as measured by output in inspected plants, was somewhat higher, averaging 24 percent larger than in the earlier period. Production did not keep pace, however, with the increase in population. The consumption of beef per person averaged 63.8 pounds in 1910-1914 and 59.5 pounds in 1921-1928, or about 7 percent below the pre-war figure. During the portion of this post-war period in which prices ruled low, namely, from 1921 to 1926, per capita consumption of beef averaged 61.0 pounds, or only 3 percent less than the pre-war average. The 51.7 pounds per capita available in 1928 corresponded to only 81 percent of the 1910-1914 average, being the lowest of any year since 1900.

Beef has to compete with other meats, and so a word about the meat situation as a whole may be in order at this point. During 1921-1928 production of all meats (beef, pork, veal, lamb, and mutton), averaged 123 percent of 1910-1914. This made possible a per capita consumption about 2 percent larger and total exports about 27 percent

larger than in the pre-war period. This indicates that during the period as a whole meats were more abundant than in 1910-1914, principally because of the increased output of pork. During 1921-1926 the meat output was such that the per capita consumption was 3 percent larger and exports were 46 percent larger than during 1910-1914. But dur-

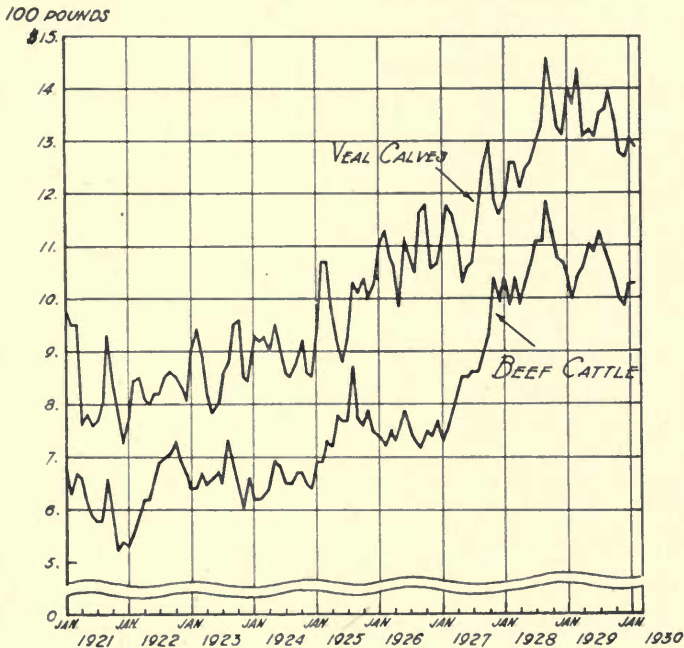


FIG. 8.—BEEF CATTLE AND VEAL CALVES 1921 TO 1929, MONTHLY ILLINOIS FARM PRICES

The trend in the price of beef cattle was distinctly upward thruout the above period, but the level was low until the sharp rise which occurred during 1927. Rather short cycles, which carried the price first up and then down, are to be noted. The trend in veal calf prices was even more steadily upward. This tendency to rise seems to have terminated for both commodities in 1928-29.

ing 1928 the output of meat was reduced so that the per capita consumption was about 1 percent below and exports 29 percent below pre-war. The decrease in 1928 chiefly reflected decline in the production of beef. Pork production continued at a high level.

Changes in Numbers of Cattle. During the entire period from 1921 to 1928 the number of cattle in this country was being reduced in response to the low cattle prices that prevailed down to the middle of

1927. The estimated number of cattle on farms in the United States on January 1, 1921, was 67.2 million. Seven years later, on January 1, 1928, the number had been reduced to 55.7 million, a decline of 11.5 million head. The animals that were marketed in order to accomplish this reduction tended to swell current market receipts and largely accounted for the increased output of beef during this period. The end of this liquidation caused such a shortage of beef that from the fall of 1927 into 1929 cattle prices averaged higher than during any previous peace-time period. It is such periods of liquidation followed by periods of expansion that cause the rather definite cycles that occur in the prices of cattle. A declining price causes farmers and ranchmen to cut down the size of their herds. These sales swell market receipts and force prices lower. Finally liquidation runs its course, prices react sharply, stockmen begin to increase their herds, market receipts are reduced, and prices rise to a higher level. The liquidation in the cattle industry which took place between 1921 and 1928 brought the number of cattle in the United States to slightly below the 1910-1914 average.

The nature of cattle production delayed the readjustment in cattle prices during the 1921-1928 period. With cattle the turnover is relatively slow, and several years are required to expand numbers very materially and a similar interval to reduce them. Furthermore a comparatively small amount of labor is involved in raising cattle, whether of beef or dairy type, because of the fact that the principal items in their production are pasture, roughages, and feed grains. These items have all been low in price and they have little alternative use. The production of cattle is distinctly different from the production of milk; milk requires a great deal of labor, cattle very little. This explains why cattle were cheaper than milk and its products during the 1921-1928 period. The small amount of labor involved and the large amount of land utilized in raising cattle will operate permanently to lower cattle prices so long as labor is the expensive item in farm production. This tendency was obscured during 1927, 1928, and 1929 by the shortage of cattle caused by excessive liquidation in earlier years.

Foreign Situation. For the world as a whole the estimated number of cattle averaged 558 million head during 1909-1913 and 643 million during 1921-1925, an increase of about 15 percent. The United States does not produce cattle or beef for export in significant quantities, our exports of beef averaging only 39 million pounds per year for the 1921-1928 period out of a total production of 6 billion, 790 million pounds.

The import duty on fresh beef was fixed in the Tariff Act of 1922 at 3 cents a pound, and on live cattle at 1½ cents a pound if the animal

weighed less than 1,050 pounds and 2 cents if it weighed 1,050 pounds or over.¹ It is very likely that our prices have been increased somewhat above the world level because of these import duties, particularly during 1927 and 1929 when supplies of beef in this country were so severely reduced and prices of cattle rose to a rather high level.

The quarantine on the importation of chilled or frozen fresh beef from Argentina in effect since January 1, 1927 has tended to reduce the supply of fresh beef in this country. The effect of the quarantine, however, on total importations may be easily exaggerated, for as a matter of fact there were large increases in the quantities of canned meat imported into this country from Argentina, particularly during the recent high-price period for cattle.

Low Hide Prices. Relatively low prices for hides from 1921 to 1927 tended to reduce cattle prices. The average price of packer, heavy steer hides at Chicago was 16.5 cents a pound in 1909-1913 and 15.5 cents in 1921-1926. There was no import duty on hides during the 1921-1929 period; hence the low price in this country reflected low world prices. The low level may be accounted for by increased numbers of cattle, large accumulated stocks of hides, and decreased consumption for certain uses, such as harness, belting, and shoes. In 1927 the price rose, because of reduced supplies, and during 1927 and 1928 averaged 21.6 cents, a figure which was about 30 percent above the pre-war average. In 1929 it declined again.

Summary. The relatively low level of cattle prices for 1921-1926 resulted, first, from an increase in the per capita production of all meats; second, from an increase in market receipts of cattle caused by liquidation; third, from the tendency for increased marketing costs to reduce the farm prices of those products of which surplus quantities are available. High prices in 1927 and 1928 resulted from reduced supplies of cattle as the liquidation ceased.

Milk Cows

Prices of milk cows follow the same general trends as prices of beef cattle in spite of the fact that milk cows produce veal calves and milk as well as beef. Much of the above discussion concerning prices applies to dairy cattle as well as to beef cattle.

The number of milk cows, however, during the period under consideration did not decline as did the number of all cattle. Between January 1, 1921, and January 1, 1928, cattle of all kinds decreased by

¹See footnote page 526.

11.5 million head, but the number of cows on farms increased from 21.4 million to 21.8 million, or by about half a million head. The average number of milk cows on farms on January 1, 1910-1914, was 20.7 million head compared with 22.0 million in 1921-1928. The number in the latter period was about 6 percent larger than in the earlier period. The most important reason for the low prices of milk cows from 1921 to 1926 was the low value of beef cattle. The increase in

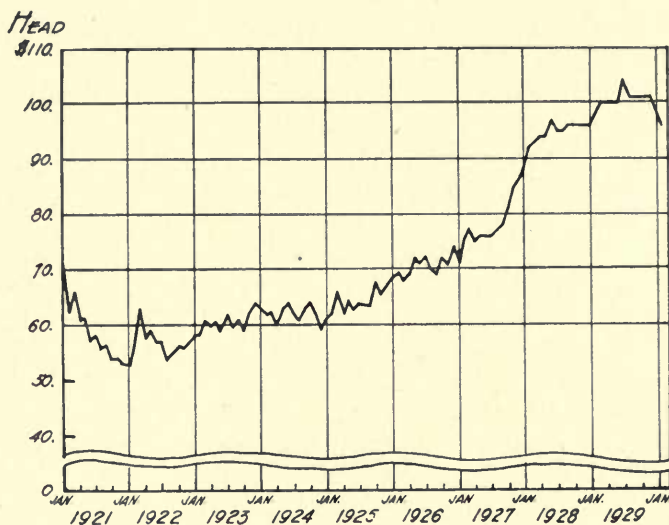


FIG. 9.—MILK COWS 1921 TO 1929, MONTHLY ILLINOIS FARM PRICE

From 1922 to 1927 the price of milk cows rose rather steadily, and from September, 1927, to May, 1928, it rose rapidly. Between 1923 and 1926 it rose from \$60 to an average of about \$70 and then in 1928 went to \$95. In 1928 and 1929 the price was quite stable at a fairly high level.

prices of milk cows in 1927, 1928, and 1929 was to a large extent a reflection of higher prices for beef cattle, altho favorable dairy product prices were also an influence. The close relationship between the general movement in the prices of the two classes of cattle is illustrated by Fig. 2.

Veal Calves

From 1921 to 1928 the price of veal calves averaged relatively higher than prices of either beef cattle or milk cows. The average Illinois farm price for this period was \$9.95 per 100 pounds, or 138 percent of the 1910-1914 price. Calves rose in price a year earlier than cattle, the price in 1921-1925 averaging 123 percent of 1910-1914, and in 1926-1928, 164 percent.

Production and, therefore, consumption of veal has increased in recent years. The average annual production of veal for 1921-1928 was 158 percent of 1910-1914. The annual consumption per person was only 5.8 pounds in 1910-1914 but increased to 7.7 pounds in 1921-1928.

The low level of veal prices in 1921-1925 was the result of the low level of beef prices and of increased marketings of calves caused by liquidation in the cattle industry and by the tendency for dairying to replace beef production. The higher prices after 1925 reflected higher cattle prices and a tendency for marketings of calves to decline because of the greater optimism in both the beef and dairy branches of the cattle industry.

Exports of veal are of no significance. Imports averaged about 5 million pounds annually from 1921 to 1928 and about 8 million pounds during 1927 and 1928. This latter figure amounts to about 1 percent of consumption in the United States. The import duty of 3 cents a pound probably increased the price to some extent after 1925.¹

Veal calves are largely a by-product of the dairy industry and may be expected to vary in price with changing interest in dairying. When numbers of cows are increasing, veal calves will tend to be higher in price and when numbers are decreasing, they will tend to be lower. In general veal calf prices may be expected to follow cattle prices, with a tendency to be relatively higher because of increased demand resulting from increased incomes of certain classes of city consumers.

WHEAT AND RYE

Since both of these crops are bread grains they have been grouped together for discussion, altho the price of rye was relatively much cheaper than the price of wheat during 1921-1928.

Wheat

During the period under consideration wheat averaged relatively higher in price than other grains. The average Illinois farm price was 92 cents a bushel in 1910-1914 and \$1.25 in 1921-1928. The 1921-1928 price was 136 percent of the 1910-1914 price. During the first four years of the later period, 1921 to 1924, the price averaged 123 percent of 1910-1914; during the next four years, 149 percent. In spite of the higher average in the second period, the trend during the four-year period was downward; in 1928 the price averaged 139 percent of pre-war and in 1929 only 123 percent.

¹See footnote page 526.

Both United States and world crops have averaged larger than before the war. In the United States 49 million acres of wheat were harvested annually during 1910-1914, and 58 million in 1921-1928, an increase of 18 percent. The 1910-1914 crops averaged about 730 million bushels; the 1921-1928 crops, about 830 million, an increase of 100 million bushels. In 1921-1928 annual exports of wheat, including flour, averaged about 120 million bushels larger than in 1910-1914 and imports about 15 million bushels larger. It is obvious that domestic consumption has not kept pace with increased population inasmuch as net exports have increased by about the same amount as production. The U. S. Department of Agriculture has calculated that the quantity of wheat used per person in the United States in 1909-1913 was 5.3 bushels. The population of the United States increased by approximately 20 million between the middle years of the two periods. If this increased population had used wheat at the pre-war rate, at least 100 million bushels would have been required to supply them. Since production increased only about 100 million bushels, it is apparent that exports from this country would have been reduced to below the pre-war level if per capita consumption had not declined. On the contrary exports increased by about 100 million bushels. A decline in the rate of domestic consumption is clearly indicated.

This reduction in the amount of wheat consumed per person is unquestionably related to increases in consumption of other foods, particularly milk and its products, sugar, and certain fruits and vegetables, and indicates a tendency to shift from cheap to higher priced foods. Increased incomes of large groups of people in this country, and perhaps greater discrimination as to the dietary values of different food materials, are factors in this shift. The growth in commercial baking, with its increased efficiency in the use of flour, may also be a factor.

The trend in wheat acreage in this country was downward from 1922 to 1925 as a result of low prices in 1922 and 1923. Better prices for the 1924-1926 crops led to increases in plantings, so that acreages during 1927 and 1928 equalled the average acreage for the 1921-1928 period, which was about one-fifth larger than in 1910-1914. The maintenance of the acreage of a crop as sensitive to price conditions as is wheat at a level which made increases in exports necessary indicates that the net returns from wheat must have compared favorably with those from substitute crops, considering the country as a whole. Conditions that favored the continued production of wheat at such a high level were (1) relatively high prices for wheat compared with other major crops except cotton; (2) comparatively low labor requirements;

(3) the large acreage which is grown under semiarid conditions where no alternative crop is available; (4) the introduction of new types of machinery, costs being thus reduced and larger acreages grown with the same number of men.

World wheat crops have averaged larger than before the war. Exclusive of Russia and China, the average estimated world production in 1909-1913 was 3,040 million bushels; in 1921-1928, 3,440; in 1921-1924, 3,270; and in 1925-1928, 3,560.

For the 1921-1928 period as a whole world crops averaged about 13 percent larger than in 1909-1913 and for the four years, 1925-1928, about 17 percent larger than for the pre-war period. This contrasts with the world rye production in 1921-1928 which, exclusive of Russia and China, was about 140 million bushels, or 13 percent below the 1909-1913 average.

It should be noted that wheat prices averaged higher in 1925-1928 than in 1921-1924 in spite of the fact that world wheat crops averaged nearly 300 million bushels larger during the second period. Obviously the demand was better in the second period.

This country exported about 230 million bushels of wheat a year, on the average, during this period and imported about 15 million bushels a year in spite of import duties of 30 and 42 cents a bushel in effect during different parts of this period.¹ Wheat was imported at the same time that it was exported, chiefly because of certain quality or locational advantage of the imported wheat. Imports consist chiefly of high-protein wheat from Canada at points such as Buffalo and New York, where Canadian wheat can be delivered cheaper than much of our domestic crop. Our exports are usually lower in protein content than are the imports and therefore are poorer wheats for milling into our more common types of flour. The duty raises the prices of the better types of hard wheat whenever these are scarce, but it probably has little influence on prices received by Illinois farmers for wheat one year with another.

The future position of United States wheat prices depends on the trend in world production. It has been noted that the price averaged considerably better from 1925 to 1928 than from 1921 to 1924 in spite of a considerable increase in world wheat crops. During 1927 and 1928, however, it averaged lower than in 1925 and 1926 and it became still lower in 1929. Apparently this country will continue to produce wheat in quantities which will make either a large volume of exports or very heavy feeding to livestock necessary for some years to come.

¹See footnote page 526.

Hence the general level of wheat prices in this country will be based on the world level, altho the prices of those classes of wheat in particular demand for milling, such as the high-protein hard wheats and the better qualities of soft wheats, will at times sell at premiums as compared with the general level of wheat prices. The amount of these premiums will vary, as they have in the past, with variations in the supply of the particular class of wheat in question. The higher prices

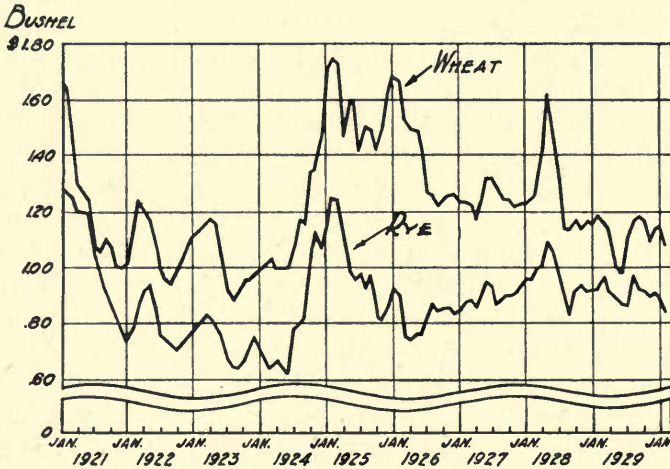


FIG. 10.—WHEAT AND RYE 1921 to 1929, MONTHLY ILLINOIS FARM PRICES

The low point in wheat prices came in 1923, or nearly two years later than for corn and oats. The post-war peak of wheat prices occurred in 1925, and since early in 1926 the general trend has been downward. Variations in rye prices have in general been similar to those in wheat prices.

from 1925 to 1928 indicate an improved level of demand which will probably continue. But if world production continues at the rate of recent years or expands further, the higher level of 1925-1928 (150 percent of 1910-1914) cannot be maintained.

Rye

Rye is a minor crop in Illinois, but its post-war price position is of considerable interest. The Illinois farm price of 89 cents for 1921-1928 was 122 percent of the average 1910-1914 price, while the price of 92 cents in 1929 was 126 percent of the pre-war average. Rye has therefore been relatively cheaper than wheat, the price of which during 1921-1928 averaged 136 percent of 1910-1914.

Before the war, exports of rye from this country were negligible. Out of a crop which averaged 2.3 million acres and 37.5 million bushels from 1910 to 1914, exports averaged only about 1 million bushels annually until an unusual demand was created in 1914 by the World War. Europe supplied its requirements of rye from sources which were willing to produce rye at prices which were too low to be attractive to farmers in this country. During the war United States production increased, and from 1921 to 1928 the acreage averaged about 90 percent larger than from 1910 to 1914. Production increased only about 60 percent, indicating that the expansion in acreage took place in areas having low acre-yields.

This increased production was largely exported. These large exports definitely tied our prices to the world market. The comparative world crops of wheat and rye indicate a tendency for wheat to replace rye. Exclusive of Russia and China, world wheat crops during 1921-1928 were 13 percent larger than during 1909-1913, while the rye crops averaged 13 percent smaller than for the pre-war period.

The low level of rye prices has led to a decline in acreage in this country from a point more than double pre-war in 1921 to a point which in 1928 was only about 50 percent above pre-war. The small amount of labor required for rye production and the low quality of much of the land on which it is grown tends to retard further reduction in acreage.

SHEEP, LAMBS, AND WOOL

Sheep have been relatively cheaper than either wool or lambs. Compared with 1910-1914, Illinois farm prices for the three commodities have averaged as follows:

<i>Illinois farm prices</i>	Sheep (Percentage of 1910-1914)	Wool	Lambs
1921-1928.....	139	163	186
1921.....	96	80	120
1922-1924.....	130	165	176
1925-1928.....	155	182	209
1929.....	156	175	212

The 1921 prices for these three items are shown separately because prices for all three commodities during that year of liquidation were so far below the average of the period. The averages for 1922-1924 were well above those for 1921 for all three items, and the averages in 1925-1928 were similarly above the average for the three previous years. Throughout the eight years the three have maintained the same relative position, with sheep relatively lowest and lambs highest in price.

The prices of both sheep and lambs were relatively low from 1910 to 1914, the period which is used as a basis of comparison in this study. This circumstance tends to make the indexes of the prices of sheep

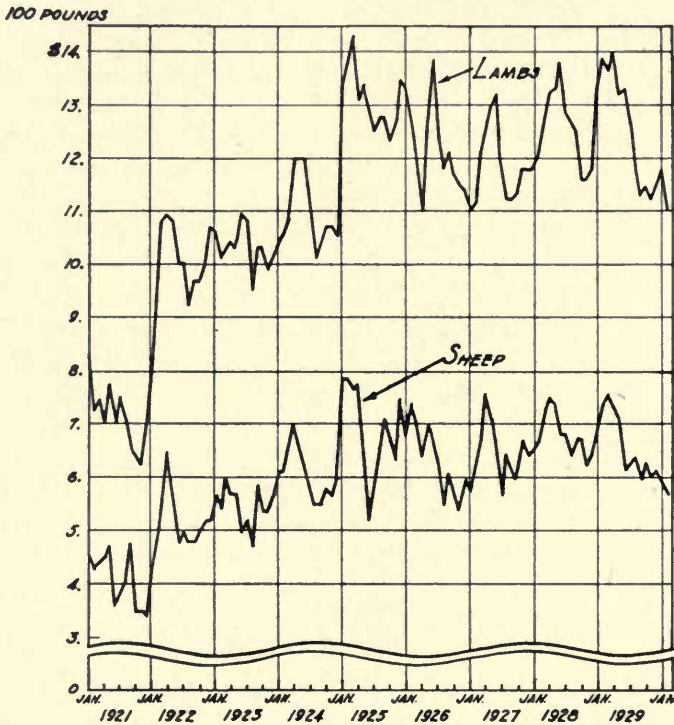


FIG. 11.—SHEEP AND LAMBS 1921 TO DECEMBER, 1929, MONTHLY ILLINOIS FARM PRICES

The general trend of both sheep and lamb prices was upward from the low level of 1921 to the winter of 1924-25. The greatest increase occurred between October, 1921 and April, 1922. From the early spring of 1925 to the middle of 1929 the direction of the trend has been horizontal or slightly downward, at a general level of about \$6.50 per 100 pounds for sheep and \$12.50 for lambs. A marked seasonal variation may be noted, particularly in the price of lambs.

and lambs appear more favorable from 1922 to 1928 than they would have if a longer period had been used as a base. But on any basis of calculation these products would appear relatively high-priced from 1922 to 1928.

It is probable that the demand for lambs is somewhat stronger than it was before the war. Increasing demand is indicated by an Illinois

farm price of lambs which during 1925-1928 was 109 percent higher than in 1910-1914, when the per capita consumption of lamb was only 27 percent less than in 1910-1914. Moreover, the increased incomes which have been enjoyed by large groups of urban consumers during recent years would naturally tend to increase the demand for a high-priced food such as lamb. In spite of the fact that the per capita consumption was larger in 1925-1928 than in 1922-1924, prices of lambs averaged about 20 percent higher in the more recent period.

The principal reasons for the high prices during this period were reduced market supplies, keen demand for breeding stock, which is characteristic of a period when expansion is taking place in any species of livestock, and probably an improved demand.

The number of sheep in the world has averaged less since 1921 than from 1909 to 1913; the latest estimates of the number of sheep in the world indicate an average of 687 million in 1909-1913 and 633 million in 1921-1925. The number has increased steadily since 1921, however, and is probably now well above the pre-war average.

There is no source from which fresh lamb or mutton may be imported in any large quantity into the United States, and consumers have indicated that they do not care for the frozen or chilled product. Exports of lamb and mutton for 1921-1928 averaged about 3 million pounds annually and imports about 6 million pounds. Beginning with 1924, imports have been smaller than this, averaging only about 2 million pounds. The rates of import duty provided by the Tariff Act of 1922 (\$2 a head for live sheep or lambs, 2½ cents a pound for mutton, and 4 cents for lamb) were higher than were the rates in the Act of 1909, and perhaps checked imports of lamb somewhat but probably had but little influence on the price.¹ The high prices reflected the keen demand for the relatively small supply in the domestic market.

Wool

International conditions have more to do with wool prices than with lamb prices. During 1921-1928 the estimated production of wool, both in the United States and in the world, averaged below the pre-war level. In the United States the estimated production was 298 million pounds, or 97 percent of the 1910-1914 average. Consumption in the United States was maintained by increased imports, which averaged about 55 percent above the pre-war period. Annual consumption of wool was apparently 20 percent larger in 1921-1928 than in 1910-1914. The ability of the United States to attract increased im-

¹See footnote page 526.

ports in spite of reduced production abroad was evidence of our strong economic position in world markets during this period.

World wool prices were at a high level during 1921-1928. From 1910 to 1914 Australian (New South Wales) scoured wool averaged 45 cents a pound on the London market; from 1922 to 1928 Australian (Queensland superior combing) scoured wool averaged \$1 a pound in the London market. The post-war price was 222 percent of the

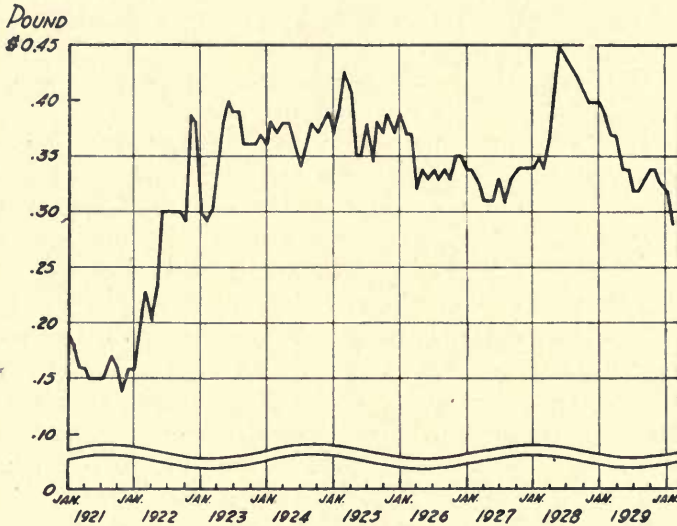


FIG. 12.—WOOL 1921 TO 1929, MONTHLY ILLINOIS FARM PRICE

Between October, 1921, and November, 1922, the farm price of wool increased nearly 200 percent. During 1923, 1924, and 1925 an approximate level of 37.5 cents a pound was maintained. During the next two years the price was lower, but during the early part of 1928 there was a sharp advance, which culminated in the highest point of the entire eight-year period in June, 1928. Since then the trend has been downward.

pre-war price. It is difficult to compare wool prices because of differences in grade, and a part of this difference likely reflects differences in the quality of the two grades. The post-war figures indicate that prices were rather high. Prices in trade centers in this country also averaged high. In 1910-1914 the price of a certain grade of wool (Ohio, 56's, $\frac{3}{8}$ blood, strictly combing) averaged 27.8 cents a pound, and in 1922-1928, 51 cents a pound, or 183 percent of the pre-war price. These price levels reflected reduced supplies of wool and an active demand.

The United States price is helped by an import duty. With such large imports in relation to domestic supply, no other conclusion is possible. The import duty on wool was fixed in the Tariff Act of 1922 at 31 cents a pound for scoured wool, compared with 33 or 36 cents in the Act of 1909 depending on the grade.¹

Summary of Sheep and Sheep Products

Prices for sheep, wool, and lambs in the United States are likely to continue at a relatively high average level, altho intermittent periods of liquidation will result in periods when lower prices prevail. Wool production is not likely to expand to a point where prices will not be aided by import duties.

The lamb output from our present flocks will probably be absorbed at relatively favorable prices, altho at somewhat lower levels than those which have prevailed from 1925 to 1928. The fact that prices have been attractive in relation to costs is indicated by the rapid increase in numbers. The rise in cattle prices will tend to reduce the relative advantage of sheep production and this will tend to check further expansion in number of sheep.²

The fundamental reason for these high prices was a reduction in numbers. The estimated number of sheep on farms in the United States on January 1 averaged as follows: 1910-1914, 43.2 million head; 1921-1928, 39.0 million; 1925-1928, 41.1 million; 1929, 47.5 million. Not until 1928 was the pre-war average reached.

Estimates of meat production also indicate that production of lamb and mutton has not kept pace with the growth of population. Production averaged 711 million pounds annually in 1910-1914 and 610 million pounds in 1921-1928. Apparent yearly consumption per capita in the country was 7.4 pounds for 1910-1914 and 5.4 pounds for 1921-1928.

The estimated number of sheep on farms on January 1 declined from 47.1 million in 1910 to 36.3 million in 1915. This decrease in numbers increased market receipts and partly explains the higher per capita consumption during the 1910-1914 period. During the post-war period the number increased; the estimates for January 1 were 36.2 million in 1922 and 48.9 million in 1930. The holding back of lambs necessary to make such increases in numbers possible reduced market

¹See footnote page 526.

²The relatively low level of lamb prices since the early winter of 1929-30 does not prove this statement incorrect. An increase in market supplies has had to be sold in a market which has been adversely influenced by the current business depression with respect to both meat and wool.

receipts and in part explained the lowered per capita production and higher price. For example, the average number of sheep increased by about 3 million head during 1928. If the 3 million lambs which made this increase possible had been marketed, the number slaughtered would have been increased about one-sixth. Altho this is equivalent to only about one pound of meat per capita, prices would have been somewhat lower if this extra amount had been marketed.

EGGS AND CHICKENS

During the period under consideration the relative price of eggs, among all the commodities considered, ranked next to sheep, while chickens held a higher position. In fact, lambs were the only product under consideration that were relatively higher in price than chickens. For the 1921-1928 period the price of eggs averaged 143 percent of the 1910-1914 price, and the price of chickens, 184 percent. Quotations for chickens apparently refer to prices paid for young birds and not for hens. Records of Illinois farm prices paid for hens are not available for this period.

No marked trend in the price either of eggs or of chickens was apparent during the period, altho both were slightly higher during the second four years than during the first four. Farm prices of eggs, of chickens, and of four grain crops for stated periods averaged as follows compared with 1910-1914 prices:

<i>Illinois farm prices</i>	1921- 1928	1921- 1924	1925- 1928	Percentage increase from 1921-1924 to 1925-1928
	<i>(Percentage of 1910-1914)</i>			
Eggs.....	143.4	141.7	145.2	2.5
Chickens.....	184.1	179.5	188.6	5.1
Barley.....	102.8	96.0	109.5	14.1
Corn.....	124.4	112.5	136.2	21.1
Oats.....	104.2	99.3	109.2	10.0
Wheat.....	136.0	122.6	149.4	21.9

The prices both of eggs and of chickens averaged higher than prices of the four grains during both four-year periods, but the difference was smaller in the second period than in the first.

The fact that egg prices were not much higher during 1925-1928 than in 1921-1924 indicates that returns from the business were satisfactory enough to maintain production at a level which kept prices from rising. This was in spite of the fact that grain prices had increased more between these two periods than either egg or chicken prices.

It is probable that there has been considerable increase in efficiency

learning. Also, special buildings and equipment are needed to expand poultry production and this reduces the incentive to expand.

In 1921-1924 spring prices of eggs were relatively much lower than winter prices, but in 1925-1928 they were more nearly on the same basis when compared with pre-war relationships. This change was caused to a greater extent by an increase in the spring price than by a decrease in the winter price, altho the winter price declined somewhat.

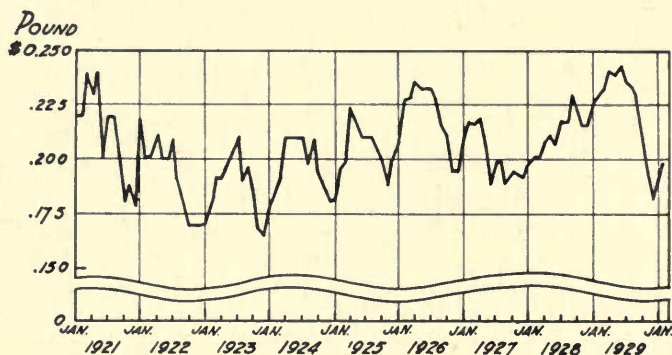


FIG. 14.—CHICKENS 1921 TO 1929, MONTHLY ILLINOIS FARM PRICE

The price of chickens declined during 1921 and 1922, but from then until the middle of 1929 the general trend was upward. Peak prices came in 1926, following a year of high corn prices, and again in 1929. The seasonal variation, altho fairly regular, is less marked than that of eggs.

Illinois farm prices during designated months in 1921-1928 were as follows compared with 1910-1914 prices for the same months:

<i>Illinois farm prices for eggs</i>	March to June	November to February
	<i>(Percentage of 1910-1914)</i>	
1921-1924.....	120	154
1925-1928.....	135	147

Foreign trade of the United States in poultry and eggs is small, altho exports are something over twice as large as before the World War. Exports go chiefly to Cuba and other countries in tropical America. The United States imports a few fresh eggs, chiefly from Canada and China, and considerable quantities of dried or otherwise processed eggs from the Orient, and also imports a small amount of poultry from Canada. Total imports are very small in relation to our total production.

In the Tariff Act of 1922 the rate of duty on fresh eggs was fixed at 8 cents a dozen, compared with 5 cents in the Act of 1909. Equiv-

alent rates were established in 1922 for other classes of eggs. The rate on live chickens was 3 cents a pound both in the Acts of 1909 and 1922, while on dressed chickens it was 5 cents in the earlier act and 6 cents in the later.¹

The relative stability of poultry and egg prices during the 1921-1929 period suggests that the levels which were established for these products during this period are likely to continue. Unless the specialized production of poultry for meat develops on a larger scale than in recent years, poultry prices should continue at a relatively higher level than egg prices, altho the margin may be somewhat reduced. The relatively better level of egg prices during the spring months as compared with the prices in the winter months which prevailed from 1925 to 1928 is also likely to be fairly permanent. The margin between spring and winter prices may narrow still more, but a permanent spread between the prices at these two seasons is likely because of the conditions under which eggs are produced on many farms.

BUTTER AND OTHER DAIRY PRODUCTS

The only dairy product for which Illinois farm prices for the State as a whole are available from 1910 to date is butter. Altho these figures refer to farm butter, which is declining in importance, changes in its price reflect changes in the prices of dairy products generally. The average price of farm butter for 1921-1928 was 40 cents a pound, or 160 percent of the pre-war average. Prices strengthened during this period and averaged about 4 cents higher for 1925-1928 than for 1921-1924.

The prices of butter and of milk cows present an interesting contrast. For the years 1921-1928 the Illinois farm price of milk cows averaged 126 percent of the 1910-1914 price, while butter prices, as stated above, averaged 160 percent. An important reason for the difference between the two items is that butter requires a good deal of labor in its production while cattle require comparatively little. Hence, with labor a relatively expensive item butter production was kept at a point which permitted a fairly high price level.

In view of the large amount of labor required in milk production, it does not follow that the relatively high prices for butter and milk necessarily reflected high profits. On the contrary, this high level of prices indicates that the costs of milk and butter production increased more than the costs of some of the other products because of the

¹See footnote page 526.

relatively large amount of labor involved in their production. The high prices for butter do indicate, however, that the gross income of a farm was increased relatively more during the 1921-1928 period by converting available feed crops into milk or butterfat than in 1910-1914.

Comparing relative prices one might conclude that milk production was more profitable than hog production during the period under consideration. The prices of hogs from 1921 to 1928 averaged only 124 percent of the 1910-1914 price, compared with an index of 160 for butter. This conclusion, however, does not necessarily follow. To answer this point we need to know what changes had taken place in the comparative production costs of these two products. Labor makes up a larger part of the cost of producing butter than it does of the cost of producing pork, and hence it may be assumed that during a period when wages were relatively high the costs of producing butter were relatively higher than the costs of producing pork. The persistence of a difference between the comparative prices of the two products is good evidence that this view is correct.

Changes in Consumption of Dairy Products. There are no adequate statistics regarding output of dairy products, including milk for fluid consumption, during this entire period 1921-1929, but all available figures indicate that production has increased more rapidly than population. The per capita consumption of three products in particular, fluid milk, ice cream, and butter, has apparently increased. Comparisons which are sometimes made with the war-time years are misleading because production of dairy products declined during this period, the estimated production of butter based on Census figures being 3 percent less in 1919 than in 1914. By 1926 estimated production had increased to 27 percent above the average for the two years 1909 and 1914.

As pointed out in the discussion of milk cows, the average number on farms January 1, 1910 to 1914, was 20.7 million head; the average number in 1921-1928 was 22.0 million, an increase of only about 6 percent. There undoubtedly has been an increase in the production of milk per animal.

Increased incomes of consumers have been a principal cause for this increased consumption of dairy products. Some of the other factors which have contributed to the increase are publicity regarding the value of milk as a food, a greater recognition of certain valuable qualities of milk, and improvements in the quality of milk and dairy products.

This increased demand of course tended to strengthen prices, but high costs were also an important factor in the price level, as noted above. Altho feed and cows were comparatively cheap, labor, a large element in milk production, was relatively expensive. Also, the expansion of dairying into new regions involved additional capital outlays for animals and equipment. Farmers who had not handled cows before had to acquire the necessary specialized skill in order to make a success of the business. And finally a good deal of dislike for the

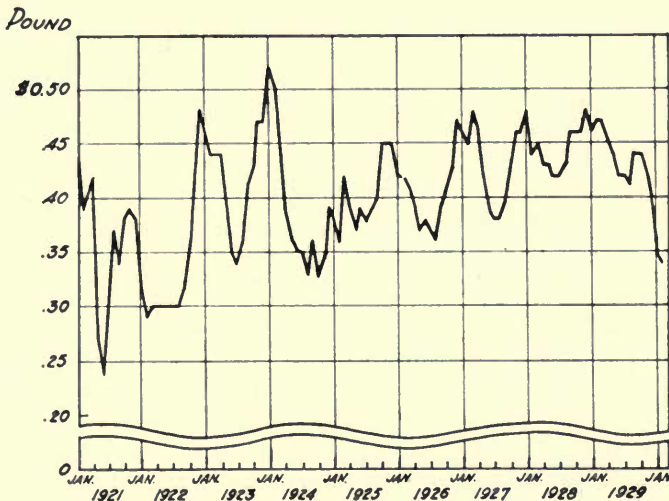


FIG. 15.—BUTTERFAT 1921 to 1929, MONTHLY ILLINOIS FARM PRICE

The general trend in the price of butterfat during this period was distinctly upward. In 1921 and 1922 the average price was below 35 cents a pound; in 1928 and 1929 it was nearly 45 cents. Since 1924 there has been less variation between summer and winter prices than in the early years of this period.

business had to be overcome. Large-scale milk production interferes more with crop work than do hogs, cattle, and sheep.

Exports and Imports. Exports of condensed and evaporated milk, which make up a large part of our foreign trade in dairy products, have averaged considerably larger in recent years than they did before the war, as shown by the following figures:

<i>Exports of dairy products</i>	1910-1914	1921-1928
	<i>(Millions of pounds annually)</i>	
Butter.....	4.3	6.6
Cheese.....	4.9	5.1
Condensed and evaporated milk.....	15.8	179.8

Altho exports of condensed and evaporated milk averaged about twelve times larger in 1921-1928 than in 1910-1914, the trend was downward during the post-war period. The average was 227.7 million pounds in 1921-1924 and 131.8 million pounds in 1925-1928. Exports of condensed milk, which go chiefly to tropical countries and to the Orient, have held up better than those of evaporated milk. Exports of evaporated milk to Europe have declined sharply, while exports to tropical countries, notably to the Philippine Islands, have maintained their old level or increased. Exports of butter and cheese during recent years have gone chiefly to Cuba and other Latin American countries with which the United States has close trade connections.

The average quantities of butter and cheese imported annually during 1910-1914 and 1921-1928 were as follows:

<i>Importations of butter and cheese</i>	1910-1914	1921-1924	1925-1928
	<i>(Millions of pounds annually)</i>		
Butter.....	2.5	22.3	7.3
Cheese.....	49.2	43.0	72.3

Imports of butter have averaged above the pre-war level thruout the entire period since 1921, but were only about one-third as large in 1925-1928 as in 1921-1924. This decrease may be explained in part by an increase in the import duty on butter from 8 to 12 cents a pound which became effective March 6, 1926, and in part by the fact that during a part of this period a rise in the foreign price of butter narrowed the margin between the price in this country and in foreign countries. On the other hand, imports of cheese averaged larger in 1925-1928 than in 1921-1924 for the reason that they consist chiefly of certain varieties of foreign cheese which are specially demanded by certain elements in our population. Among the imported dairy products cheese is the most important item.

Balancing imports against exports, the net imports have equalled about 1 percent of our total consumption of milk and dairy products in recent years. This does not mean that an increase of 1 percent in the volume of our dairy production would cause our imports to cease or our exports to increase. As noted above, the principal item in the imports consists of certain types of foreign cheese which would continue to come in even tho prices were greatly altered. Furthermore, consumption of butter and other dairy products would increase as prices declined. An increase in production much larger than 1 percent would be necessary to reduce prices to the point where the United States could export butter to countries other than those to which it has continued to export, because of established trade connection, dur-

ing recent years in spite of relatively high prices. Increased production would lower prices but not necessarily to the foreign level. Of course if production is expanded sufficiently, prices will go to an export basis, but the necessary decline in price would likely be followed by a decline in production.

Butter prices in this country have typically been above the prices in foreign countries, partly as the result of the import duties levied on butter. These duties during the period under consideration have been as follows:

<i>Duties on butter</i>	<i>Per pound</i>
August 6, 1909, to October 13, 1913.....	\$.06
October 13, 1913, to May 27, 1921.....	.025
May 27, 1921, to September 21, 1922.....	.06
September 21, 1922, to March 6, 1922.....	.08
March 6, 1926, thru 1929.....	.12 ¹

Average prices of butter per pound in a representative market in this country and abroad have been as follows:

<i>Butter prices</i>	New York (92 score, creamery)	Copenhagen, Denmark (export price)	Margin in favor of New York
1910-1914 average.....	\$.30	\$.26	\$.04
1921.....	.43	.38	.05
1922.....	.41	.37	.04
1923.....	.47	.37	.10
1924.....	.43	.40	.03
1925.....	.45	.42	.03
1926.....	.44	.37	.07
1927.....	.47	.37	.10
1928.....	.47	.38	.09
1929.....	.45	.37	.08
1921-1925 average.....	.44	.39	.05
1926-1929 average.....	.46	.37	.09

From 1921 to 1925 the New York prices exceeded the Danish prices by only a little more than the pre-war margin; from 1926 to 1929 the margin was more than double the pre-war figure. After 1926 the import duty had much more influence on the price than previous to that year. The duty, altho it increased the average price, tended to make butter prices more unstable than they would otherwise have been.

The principal causes for the relatively high prices for dairy products were first, the increased demand for them and second, the tendency of heavy labor costs in milk production to hold production down. Again it should be noted that it may have been more profitable for a farmer to produce something which averaged relatively much lower in

¹See footnote page 526.

price than dairy products than to expend the labor and make the capital investment necessary to produce milk.

During 1929 there was considerable expansion in the number of dairy cattle in this country. If this expansion continues, it will undoubtedly tend to reduce the prices of dairy products. The reaction of production to these lower prices may be expected to be much more rapid than it would be for many farm products because of the large amount of labor involved in milk production. The reduced production which is likely to follow lower prices will tend to hold up prices of dairy products.

RED CLOVER SEED

Red clover seed has been one of the highest priced of the products included in this discussion. The average Illinois farm prices were \$9.02 a bushel in 1910-1914, \$14.75 in 1921-1928, and \$15.90 in 1929. The 1921-1928 average was 161 percent of the 1910-1914 average. This relatively high price is in distinct contrast to timothy seed, which has been very low when compared with pre-war averages.

Red clover seed was distinctly higher in 1925-1928 than in 1921-1924. In the earlier period they were 130 percent of the 1910-1914 average, and in 1925-1928, 198 percent.

Because production figures for clover seed go back only to 1916, comparisons with pre-war years are impossible. There were four years of comparatively small crops from 1924 to 1928. Production of red, alsike, and white clover averaged about 1.6 million bushels annually in 1920-1923 and, partly because of weather conditions, only 1.1 million bushels in 1924-1927. This reduced output explains a large part of the increase in prices for clover seed from 1925 to 1928.

Increased acreages of legume hay have probably increased the demand for clover seed and helped to strengthen the price.

The price of native clover seeds has probably been strengthened by the regulations that require the staining of seed of foreign origin. But as these regulations did not go into effect until September, 1926, they did not operate as a factor tending to increase prices thruout all the period under consideration. Education of producers as to the superior qualities of native seed has probably also tended to increase the demand for the domestic crop. Clover seeds of all kinds were on the free list in 1909, but duties of 4 cents a pound on both red and alsike clover were imposed in the Tariff Act of 1922.¹ These duties have probably tended to raise the price. The full amount of the duty,

¹See footnote page 526.

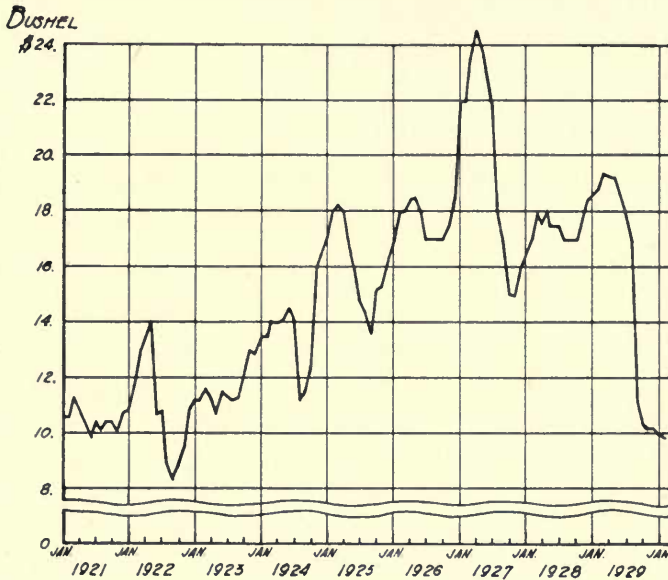


FIG. 16.—RED CLOVER SEED 1921 TO 1929, MONTHLY ILLINOIS FARM PRICE

The price paid for red clover seed rose steadily from 1921 to 1925. From 1926 to the latter part of 1929 it maintained a fairly high level and for a brief period in the early part of 1927 it went very high. In the latter part of 1929 the price declined sharply in response to a large crop.

however, is only about 25 percent of the pre-war price, while the average price in 1925-1928 averaged about 100 percent higher.

It seems unlikely that these extremely high prices for red clover seed will be permanent. It is reasonable to expect that production will expand to a point that will make for a lower level of prices. A large crop in 1929 brought the price for that crop down close to the pre-war level.

APPLES

Average yearly prices of apples mean little because of differences in varieties and because sales are generally made during a rather brief season. The farm-price data indicate that for the period 1921-1928 the general level of apple prices ranked high among the commodities under consideration. This average was materially influenced, however, by the high prices during the first two years of the period. The average price in 1921-1928 averaged 164 percent of the 1910-1914 price, but in 1923-1928 it was only 149 percent of 1910-1914. The six-year period 1923-1928 will be used as the basis for this discussion.

No particular trend was evident during this period, the average for the first three years, 1923 to 1925, being 147 percent of 1910-1914 and the average for the next three, 1926 to 1928, being 150 percent. Harvest-time averages did not differ greatly from these yearly prices when reduced to a relative basis.

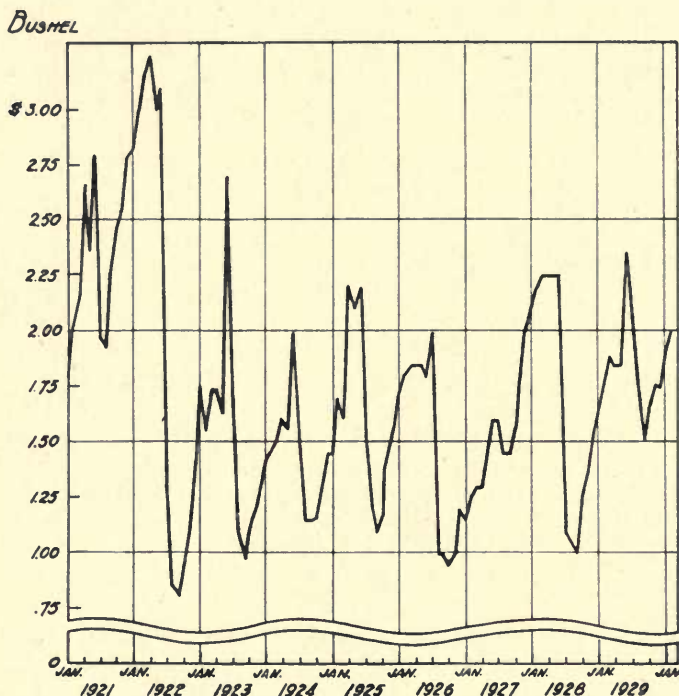


FIG. 17.—APPLES 1921 TO 1929, MONTHLY ILLINOIS FARM PRICE

The seasonal variation in apple prices is very marked. The general trend in the harvest-time prices, which are of most significance to growers, has been upward since 1922, altho prices were very low in 1926 and 1928.

Because of the wide variations in the production of apples from one year to the next it is difficult to compare the average production during different periods. On the whole, however, production of apples in the United States has been no larger during recent years than it was in 1910-1914. Production for selected periods has averaged as follows:

<i>Apple production in the United States</i>	<i>Millions of bushels annually</i>
1909-1913	176
1910-1914	198
1922-1928	186

While total production has tended to increase but slightly, commercial production has been gradually increasing.

The number of trees, both of bearing and nonbearing age, in the country as a whole has declined between each of the last three Census dates, as shown by the following figures:

<i>Apple trees in United States</i>	Bearing	Nonbearing
	<i>(Millions)</i>	
1910.....	151.3	65.8
1920.....	115.3	36.2
1925.....	103.7	34.3

The decline in number of bearing trees took place chiefly in general farming sections, where small farm orchards are being gradually eliminated.

The large cash outlays and the heavy labor requirements needed to produce and harvest a crop of apples have probably tended to hold apple prices up. It is another case where relatively high prices have been associated with relatively high costs.

The demand for apples has probably been reduced by increases in the consumption of other fruits, notably oranges and bananas. Per capita consumption of apples in 1923-1928 was obviously below the pre-war level, for production then averaged no larger than for the years just before the war, while our population averaged about 20 percent larger in 1923-1928 than in 1910-1914.

Imports of apples are negligible but exports from 1923 to 1928 averaged about 14 million bushels, or about two and one-half times the pre-war average. These exports, however, amount to only about 7 percent of the total crop. The import duty of 25 cents a bushel imposed in the Act of 1922 had little or no influence on prices.¹

POTATOES

Potatoes have been a very minor crop for the state of Illinois as a whole. Their price has been very erratic during the period under consideration, a situation which is typical of potato prices generally. The average price, however, has been relatively high. In 1921-1928 it was \$1.35 a bushel, or 165 percent of the 1910-1914 price. The range was from 98 cents in 1924 to \$2.23 in 1926.

The acreage of potatoes in the United States in 1920-1927 averaged about 2.5 percent less than in 1909-1913 while production was about 10 percent larger. Increased production on a decreased acreage indicates an increase in the acre yields caused by better methods of cul-

¹See footnote page 526.

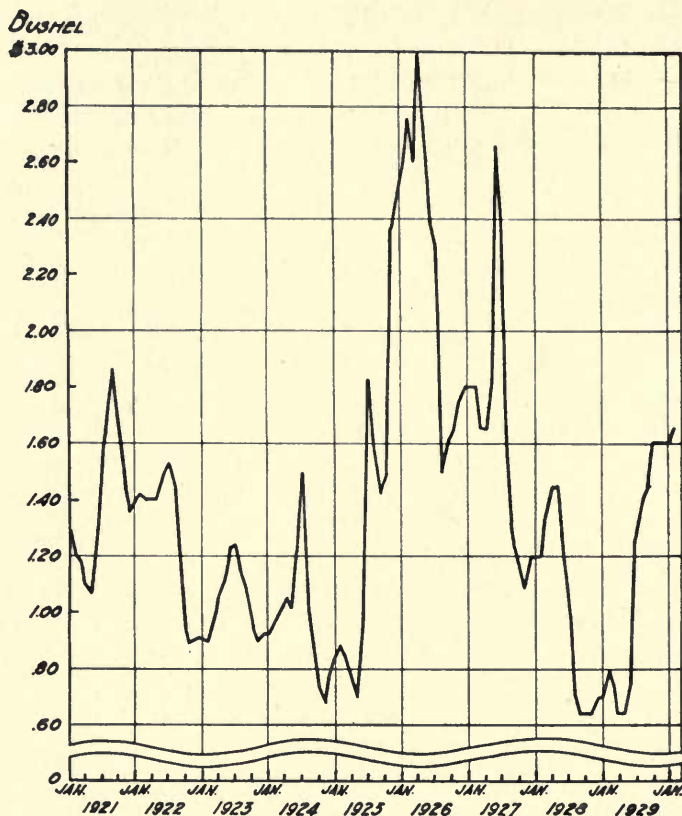


FIG. 18.—POTATOES 1921 TO 1929, MONTHLY ILLINOIS FARM PRICE

Changes in potato prices have been very erratic during this period. The trend was downward from 1921 to 1924, but a short crop in 1925 resulted in a very high level during 1926. From 1926 to 1929 the trend was downward as crops increased from year to year. A smaller crop in 1929 resulted in higher prices.

ture and concentration of the acreage in sections better adapted to potato production.

Considering the comparatively large amount of labor required to raise potatoes, it would be expected that production would be restricted unless the price was fairly high. The sharp decline in acreage which occurred between 1922 and 1925 reflected an adjustment to this situation. But the small total acreage involved in potato production permits production to be expanded rapidly. Under stimulus of the high prices received for the 1925 and 1926 crops, acreage was increased

sharply and prices declined in consequence of the increased production; but acreage of potatoes is not likely to be maintained at a point which will keep prices low because of the high costs involved in their production.

It is obvious from the above figures that production has not kept pace with population and that consumption per capita has declined. The increased incomes enjoyed by large groups of our population have apparently led to the substitution of other foods for potatoes.

From 1921-1922 to 1927-1928 this country exported an average of about 3 million bushels of potatoes annually. These exports, which went chiefly to Cuba, Canada, and Mexico, did not vary much from year to year. During the same period the United States imported annually about the same quantity, on the average, principally from Canada, altho the imports were chiefly confined to the high-price years 1925 and 1926. This import duty of 30 cents a bushel¹ and the restrictions on imports of potatoes from certain foreign countries because of diseases probably tended to increase prices during years of small crops, but had little or no influence on prices during other years.

High costs, which have tended to restrict production, were the cause of the relatively high average price for potatoes during the 1921-1929 period. As in the case of several other products previously mentioned, a relatively high price does not necessarily mean a particularly profitable price. High costs of production may absorb the larger returns.

PRICES OF FARM PRODUCTS COMPARED WITH PRICES OF THINGS BOUGHT BY FARMERS

The relative positions of the prices of various farm products in Illinois from 1921 to 1928 have been discussed and some reasons for their position have been pointed out. It is generally recognized that the majority of these commodities have been cheaper than the prices of the items which enter into farm costs. The U. S. Department of Agriculture has constructed a series of index numbers which measures changes in the prices of things commonly purchased by farmers. These indexes refer to the prices actually paid by farmers and not to wholesale prices in central markets. They measure the average change in the cost of stated quantities of a selected list of different kinds of materials typical of the commodities which farmers have bought in recent years and do not allow for any changes in the quantities of goods

¹See footnote page 526.

purchased. Averages for different groups of items for different series of years are shown in Table 4.

For the eight years 1921-1928 the prices of the commodities used in farm production averaged 144 percent of 1910-1914 prices; the prices of commodities bought for family use averaged 162 percent; combined, the two were 155 percent of 1910-1914. There was but little difference in the averages for the first and second halves of this period, indicating a rather stable situation for the prices of these cost items. There were, however, some changes in the prices of the different groups into which these commodities are divided. The items of agricultural origin, feed and seed, were relatively higher during the second half of the period than during the first.

TABLE 4.—INDEX NUMBERS OF PRICES OF ITEMS PURCHASED
BY FARMERS, 1921-1929
(1910-1914 = 100)¹

Class or group of commodities purchased	1921-1928	Two four-year periods		1929
		1921-1924	1925-1928	
Feed.....	124	118	130	131
Machinery.....	158	159	157	162
Fertilizer.....	132	135	129	132
Building materials.....	161	159	163	162
Equipment and supplies.....	138	140	136	128
Seed.....	160	137	183	188
All commodities used in production....	144	142	146	146
Commodities bought for family use....	162	162	163	160
Average of commodities used for production and family use.....	155	154	156	155

¹Average of indexes computed by Bureau of Agricultural Economics, U. S. Department of Agriculture.

Wage payments are important items in farm costs. Wages have also been relatively higher than the prices of the majority of farm products. From 1921 to 1924 farm wages in the United States averaged 157 percent of 1910-1914; from 1925 to 1928 they averaged 170 percent. Farm wages have been low in comparison with wages in most other lines of employment but relatively higher than the prices of the more important farm products.

Taxes have been much higher than farm products; from 1921 to 1924 taxes on farm property in the United States averaged 236 percent of 1910-1914; during 1925-1928, 256 percent.

In Table 5 the Illinois farm prices of representative farm products are compared with the indexes of the commodities bought for farm and family use for the 1921-1928, 1921-1924, and 1925-1928 periods.

The prices of such important items as oats, corn, hogs, cattle, wheat, and eggs all averaged lower than 155, the index of the average of the expense items during both four-year periods, altho in the second period the margin was somewhat less than in the first. During at least one year of the eight-year period the index number of the price of all six of these products, except oats, was higher than 155. The index of the price of butter, which is typical of the dairy products, was the only one of these six items which averaged higher than 155 for the eight-year period and it failed to do so during only two of the eight years.

TABLE 5.—RELATIVE PRICES OF SELECTED ILLINOIS FARM PRODUCTS COMPARED WITH INDEX NUMBERS OF PRICES OF GOODS BOUGHT BY FARMERS, 1921-1928

Commodity	Index numbers (1910-1914 = 100)			Number of years price of designated commodity was relatively higher than prices of commodities used for pro- duction and family use		
	1921-1928	Two four-year periods		1921-1928	Two four-year periods	
		1921-1924	1925-1928		1921-1924	1925-1928
Commodities bought for farm and fam- ily uses.....	155	154	156
Illinois farm prices						
Horses.....	57	58	56	0	0	0
Hay.....	99	102	95	0	0	0
Oats.....	104	99	109	0	0	0
Corn.....	124	113	136	1	0	1
Hogs.....	124	106	143	1	0	1
Beef cattle.....	126	108	145	1	0	1
Wheat.....	136	123	149	1	0	1
Eggs.....	143	142	145	1	0	1
Butter.....	160	152	169	6	2	4
Wool.....	163	144	182	6	2	4
Apples.....	164	177	151	3	2	1
Potatoes.....	165	142	189	4	1	3
Chickens.....	184	180	189	8	4	4
Lambs.....	186	162	209	7	3	4

Other commodities, the farm price of which averaged higher than 155 for the eight-year period were as follows: wool, higher in six years; apples, higher in only three years; potatoes, higher in only four years; chickens, higher in all eight years; and lambs, higher in seven years.

These figures have the following significance: if the price of any product averaged lower than the prices of items which were bought for farm and family use, it required more of the product to buy a given quantity of supplies than in the earlier period, 1910-1914, which is taken as a standard. At Illinois farm prices the following quantities of corn were required to buy the same quantities of material, hire the same amount of labor, or pay the taxes which 100 bushels of corn would have paid for with prices as they were from 1910-1914:

	1921-1928 <i>bushels</i>	1921-1924 <i>bushels</i>	1925-1928 <i>bushels</i>
Commodities for farm use.....	115	126	107
Commodities for family use.....	131	143	120
Wages of hired man.....	131	139	125
Taxes on farm property.....	198	209	188

Unless the quantity of corn produced per farm family has been increased in the proportions indicated in the above table, the amount of goods bought or labor hired has had to be reduced or income diverted from other uses. The simple fact that it has taken larger quantities of corn and of most of the other important farm products to buy the necessary materials and pay the wages of the hired man and the taxes than it formerly did, is responsible for much of the difficulty which Illinois farmers and landowners have experienced from 1921 to 1928. Ratios similar to those worked out for corn may be worked out for other products if one cares to do so.

GENERAL CAUSES FOR LOW PURCHASING POWER OF ILLINOIS FARM PRODUCTS

Some of the reasons for the differences between the prices of individual farm products during the period 1921-1929 have been discussed, and it has been pointed out that in general the more important of these have been relatively lower in price than the cost of items used by farmers either for farm or family use. Some of the reasons that have been assigned for the position of individual products are of rather general application. The substitution of mechanical for horse power, for example, has not only directly influenced the demand for a variety of products but has also increased the supply of feed to be disposed of thru various meat- and milk-producing animals and hence influenced the prices of such products.

Various people have advanced some particular explanation for the relatively low prices of agricultural products in comparison with the prices of things which farmers buy. Some of these general reasons why prices of farm products have been relatively cheap will be discussed at this point. Because of the wide variations which have developed between the prices of the different farm products, it is obvious that the particular circumstances relating to each individual commodity must never be lost sight of.

During the period 1921-1929 the general level of prices was comparatively stable in this country. The revised index number for wholesale prices calculated by the U. S. Bureau of Labor Statistics rose from 141 as a yearly average in 1922 to 151 in 1925 and declined to 139

in 1927, the average for the period 1910-1914 being taken as 100. The period as a whole lay between the very severe decline in prices that began in 1920 and the severe decline which began late in 1929.¹

During this period the following general factors operated to cause prices of farm products to be relatively low in comparison with the prices of the items entering into farm costs. The order in which they are put does not indicate their relative importance.

1. Slow adjustment of farm output to unfavorable conditions.
2. Increased demands for nonagricultural products.
3. Reduced foreign demand for our farm products.
4. Ability of other economic groups to establish and maintain higher scales of remuneration.
5. Increased expense for marketing, including transportation and conversion.

This list does not include the influence of various governmental policies that have been much discussed in this connection. The actual significance of such factors cannot be measured with any degree of accuracy. Neither does it include changes in production, either domestic or foreign, or in demand in this country as these factors have been dealt with in the discussion under individual products.

1. Slow Adjustment of Farm Output to Unfavorable Conditions. The output of the typical manufactured product reacts more quickly to unfavorable conditions than farm output. There are a number of reasons for this, but the three most basic are (1) the comparative length and nature of the processes involved; (2) the proportion of the costs which must be paid in cash; and (3) the number of enterprises involved.

The first difference is so obvious that discussion is unnecessary. With regard to the second, if a factory cannot pay its expenses out of its income, it is compelled to cease operations because the larger part of its expenses must be paid in cash. It therefore closes rather quickly whenever prices fall to the point where they do not cover costs. In the case of a farm a smaller part of production costs is in cash, and hence production continues even when returns are unfavorable.

With regard to the third point—the number of enterprises involved—a comparatively small number of concerns make a large proportion of most industrial products. Keeping the output at a level which permits it to be sold at a given price is easier under such circumstances

¹This index number is published on the 1926 base. The figures quoted are those published monthly in *Farm Economics*, Cornell University, Ithaca, N. Y.

than where there are many producers, as is the case with most farm products.

Wage levels in many lines have been maintained only by those engaged in them refraining from work unless certain wage rates were paid. The technic for successfully doing this has been developed to only a limited degree in the case of farm products. Generally speaking, farmers attempt to operate as close to capacity all the time as their financial resources permit. Such a policy of course means that during periods of heavy production and weak demand, sharp reductions in prices are inevitable.

2. Increased Demands for Nonagricultural Products. An increase in the demands for nonagricultural products tends to hold up the prices of goods which farmers buy because it increases the demands for labor and industrial materials. The demand for a number of non-agricultural products has increased during the last few years. Some entirely new industries have developed, the automobile and radio industries being examples. There has been a great deal of building of various kinds; houses, factories, and roads are examples. The development of these industries has of course helped the prices of farm products by providing employment for many workers and by providing an outlet for surplus farm labor, but this factor has also tended to keep high the prices of nonagricultural goods which farmers have had to buy.

3. Reduced Foreign Demand for Our Farm Products. The World War reduced the ability of European nations to buy our farm products. Their productive capacity was reduced and large investments of various kinds that their citizens held in this country were greatly diminished. Before the war this country paid the interest or the returns on the investments which foreigners held, largely in goods. This situation facilitated the export of farm products. Another factor tending to reduce Europe's ability to buy our farm products is the circumstance that a number of foreign governments contracted debts in this country to pay for war supplies. The payments which they have made on these have tended to restrict their ability to buy.

During the 1921-1929 period the adverse effect on our markets for farm products of this change in the economic status of Europe was offset in part by large loans made by various interests of this country to various interests abroad. This policy can only maintain demands for a brief period, and in the future the interest as well as the principal payments which must be made on these debts will reduce the ability of the foreign nations to buy.

Wheat and hogs are the Illinois products that have been most directly influenced by these developments, altho all products have been influenced indirectly.

4. Ability of Other Economic Groups to Establish and Maintain Higher Scales of Remuneration. Two reasons why a higher scale of remuneration could, at least temporarily, have been established among nonagricultural groups rather than among farmers have previously been noted: the slowness with which farm output adjusts to low levels of return, and the increase in demand for certain nonagricultural products. It is much easier to limit production of an industrial product to a point where a given price can be obtained than to similarly limit an agricultural product. It is also reasonably easy to limit the time which a given body of wage earners work. The strong markets for certain nonagricultural products and services that prevailed during much of the 1921-1929 period made it easy to pursue such a policy.

One of the most striking changes, from an economic point of view, between pre-war and post-war conditions is the higher level of wages which has prevailed in the latter period. A number of causes have contributed to this rise. Space permits that only a few of these be listed and briefly discussed. Among them are the rise of a number of new industries and adoption of new methods which have increased the effectiveness of labor in certain lines and drawn it out of lines where it could not be used effectively. Restriction of immigration has reduced the supply of labor and this has tended to raise its value. Wages were adjusted to a rather high level during the war-time period and normally changes in wages lag. The ability and willingness of industry and labor to limit their output so as to be able to dispose of it at certain comparatively fixed prices also helped to hold wages up.

The effect of this higher wage-level has been to increase production costs in all lines except those in which improved methods have reduced the amount of labor needed per unit of product. Wages make up a considerable part of the direct or indirect costs of producing most industrial goods and this higher wage level has been a factor in creating higher prices for industrial products.

The increased remuneration to the labor factor is more obvious than is the increased return to certain other factors of production. It should be recognized, however, that profits have been rather high in many important lines of production. The strong demands and the existence of a degree of production control that permitted regulation of output to a point where prices could be maintained at profitable levels were important causes for these higher profits.

5. Increased Expense for Marketing, Including Transportation and Conversion. Generally speaking, costs of marketing have been relatively higher during the period under consideration than the prices of the more important Illinois farm products. One of the principal reasons is the higher wage level noted above. This has widened the spread between the farm and consumers' prices. Whether the higher level of cost has reduced the prices paid farmers is a much discussed question.

The price that is received by a producer for an item of a given stock of any product is the price at which the stock will be used up by consumers less the costs of marketing, assuming that the entire stock is to be sold. To use a wheat crop of 700 million bushels it may be necessary to export a part of it to some foreign country. The price to the producer tends to be the price which this foreign buyer will pay less the cost of getting it to him. The price which any other consumer pays will be this farm price plus the cost of getting the goods from the farm to this particular consumer.

If the cost of reaching the marginal consumer is increased, the farm price will be reduced unless there is some change in the supply. If farmers reduce their output because of this lower price, then the consumer's price will rise and a part of the increased cost will be shifted to consumers generally.

It seems likely that the supplies of many of our farm products were sufficiently large during the 1921-1929 period so that the increased marketing costs operated to reduce prices received by producers. The situation may change from one year to the next or from one season to the next as a result of variations in production in the amounts offered for sale.

VARIATIONS IN PRICES WITHIN THE PERIOD

The discussion so far has dealt with differences between the average prices of the different commodities over periods of several years. Within these periods there have been of course wide fluctuations in the prices of each commodity. The nature of these variations is shown by the charts scattered thruout the bulletin which graphically show the changes from January, 1921 to January, 1930, in the prices of each commodity that has been discussed. No attempt has been made to analyze or explain these short-time fluctuations as the purpose of the bulletin has been to point out differences between the general positions of the different commodities.

**COMPARATIVE VARIABILITY OF PRICES OF
DIFFERENT COMMODITIES**

The average variations in the index numbers for individual years from their respective averages for the entire period are shown for the twenty commodities included in this study in Table 6. This is of course a crude measure of variability but it does suggest differences between the different commodities in respect to variations in their average yearly prices.

TABLE 6.—VARIABILITY IN YEARLY INDEX NUMBERS OF ILLINOIS FARM PRICES OF DESIGNATED COMMODITIES, 1921-1928

Commodity	Average index number 1921-1928 (1910-1914 = 100)	Average variation of yearly index numbers from average for period	Percentage which average variation was of index number for period
Horses.....	56.8	1.8	3.2
Hay.....	98.6	8.9	9.0
Barley.....	102.8	10.7	10.4
Oats.....	104.2	11.1	10.6
Rye.....	121.8	13.2	10.8
Hogs.....	124.1	19.2	15.5
Corn.....	124.4	22.1	17.8
Milk cows.....	126.4	17.7	14.0
Cattle.....	126.4	18.5	14.6
Wheat.....	136.0	14.7	10.8
Veal calves.....	138.4	19.0	13.7
Sheep.....	138.6	17.6	12.7
Eggs.....	143.4	6.6	4.6
Butter.....	160.5	8.6	5.4
Clover seed.....	161.0	34.0	21.1
Wool.....	163.1	27.8	17.0
Apples.....	164.0	23.2	14.1
Potatoes.....	165.2	37.0	22.4
Chickens.....	184.1	7.7	4.2
Lambs.....	185.7	25.0	13.5

The average farm prices of horses, chickens, eggs, and butter were less variable than those of any of the other twenty commodities, the average variations in their yearly index numbers being 3.2, 4.2, 4.6, and 5.4 percent, respectively, of the index numbers for the entire period. At the other extreme were potatoes, with an average variation of 22.4 percent from the average index number for the period.

Meat animals were in an intermediate position, with average variations as follows: sheep, 12.7 percent; lambs, 13.5 percent; veal calves, 13.7 percent; cattle, 14.6 percent; hogs, 15.5 percent. Wool was rather variable, the average variation being 17.0 percent.

Corn was slightly more variable than hogs, comparable figures being 17.8 percent and 15.5 percent. Milk cows and butter present an interesting contrast, comparable figures being 14.0 and 5.4 percent.

The use of the calendar-year figures reduces the apparent variability of the crops harvested in midsummer; the averages for such

crops were rye, 10.8 percent; hay, 9.0 percent; oats, 10.6 percent; barley, 10.4 percent; and wheat, 10.8 percent.

PRICE VARIATIONS AMONG DISTRICTS WITHIN THE STATE

The prices analyzed in this bulletin refer to averages for the state as a whole and not to any particular locality. It would be expected

that there would be considerable variation among the prices prevailing in different parts of the state because of differences in costs of transportation to central markets, differences in local demand, and differences in local competition. Figures are not available to show all these variations. The farm prices with which this publication deals were compiled by crop-reporting districts, however, and averages have been worked out for these different districts for a variety of products for the five-year period 1925-1929.¹ The counties included in the different districts are shown in Fig. 19.

Averaging prices for a period of five years eliminates a part of the actual variations that occurred in prices among these districts, since a relatively high price in a given district at one time may be offset by relatively low prices in the same district at a later time. As a matter of fact,

rather wide differences developed during particular months, as shown by Figs. 28 to 33. The average differences are shown in Figs. 20 to 27.

¹These were computed by the Agricultural Experiment Station from data collected and made available by the Bureau of Agricultural Economics, U. S. Department of Agriculture.



FIG. 19.—LOCATION OF ILLINOIS CROP-REPORTING DISTRICTS

These are the districts for which price averages are given in the following graphs.

Grains. Prices of grains were generally lowest in the central and eastern parts of the state, which ship out large quantities of grain (Fig. 20).

Barley was indicated to be slightly cheaper in the western part of the state than in the eastern.

Corn. Variations of corn prices in different parts of the state were less than one would expect. In central and eastern Illinois, where large quantities of corn are shipped out, the price averaged from 2 to 6 cents less than in the other districts. The prices were highest in the southern part of the state and intermediate in the northern and western. In these areas of higher price there is more livestock produced in proportion to corn than in the eastern and central parts of the state. During individual months, however, wide differences develop; during 1925-1929 the price in the southeastern district fluctuated from 9 cents below to 26 cents above the price in the eastern district (see Fig. 28).

Oats also were cheapest in the central and eastern districts, the average for these two districts being 4.5 cents less than in the northeastern district, from which large quantities of oats are also shipped. Lower transportation costs to Chicago from the latter district partly explain this situation. The price in the two southern districts, which ship oats in, averaged 10 cents higher than in the eastern district, from which oats are marketed in quantity.

Wheat was cheapest in the northern, central, and eastern districts. In the two latter the price averaged 7 cents less than in the western and west-southwestern districts and 13 cents less than in the two southern districts. These differences reflect differences in the classes of wheat produced; the soft wheat grown in parts of the western district and exclusively in southern Illinois has averaged higher in price during this period than the hard wheats grown in central and eastern Illinois.

Soybean prices were lowest in the eastern district and highest in the two southern districts. These quotations apparently refer to prices of beans for seed rather than for shipment to mills.

Hay. Hay is a very bulky product and costs of transportation and marketing are high in proportion to its value. Hence there were wide variations in the prices among the different districts (Fig. 21).

All Hay. The exact type of hay referred to by this designation probably varies in different parts of the state because of variations in the kinds of hay grown. The price was highest in the central and eastern districts, where corn and the other grains were cheapest, and

lowest in the western, east-southeastern, and southeastern districts. The price averaged a little over \$5 a ton, or nearly 50 percent, higher

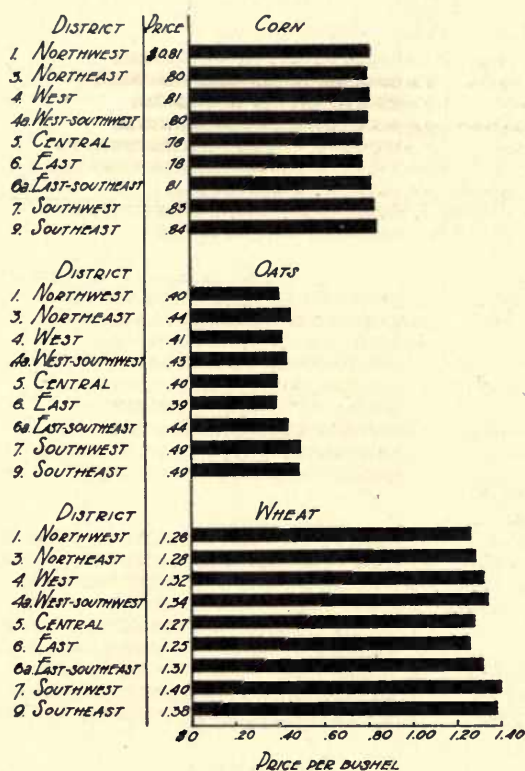


FIG. 20.—CORN, OATS, AND WHEAT 1925 TO 1929, AVERAGE FARM PRICES BY CROP-REPORTING DISTRICTS

Prices of all three grains were cheapest in Districts 5 and 6, the heavy grain-producing districts of central and eastern Illinois. On the average, there were surprisingly small differences between districts in the price of corn, altho there were large differences during particular months.

in the eastern district than in the adjoining east-southeastern district.

Alfalfa hay was rather uniform in price in the different districts, tho it was highest in the northeastern, central, and eastern districts and lowest in the western and east-southeastern districts.

Clover hay was cheapest in the northwestern and western districts and highest in the northeastern, central, and southwestern districts.

Timothy hay was cheapest in the east-southeastern district and highest in the northeastern, central, eastern, and the two southern dis-

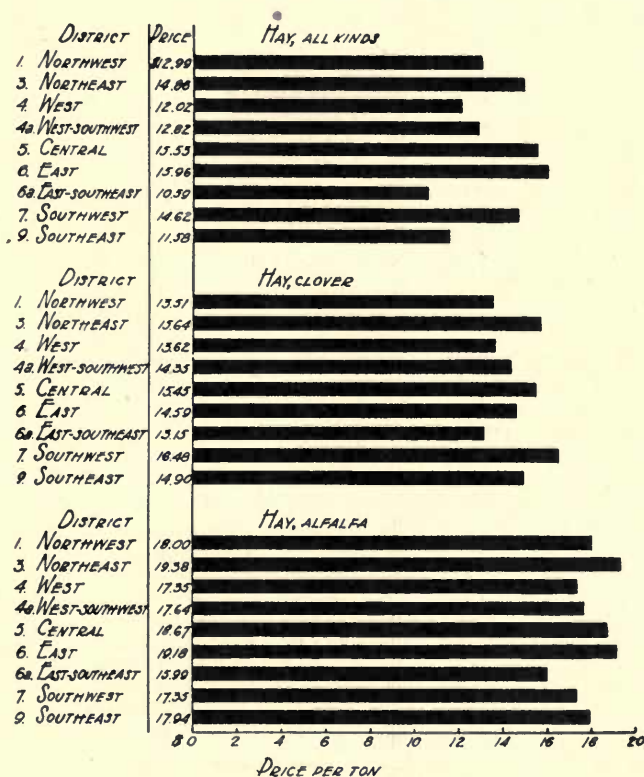


FIG. 21.—HAY 1925 TO 1929, AVERAGE FARM PRICE BY CROP-REPORTING DISTRICTS

Because of the bulky nature of the product, high transportation costs, and local variations in production and demand, the prices of hay were extremely variable between districts. Prices were lowest in the western and southeastern parts of the state.

districts. The price averaged about \$5 a ton higher in the eastern district than in the district to the south of it, the east-southeastern.

Livestock. More definite differences are to be noted between the prices of livestock in different parts of the state (Figs. 22 to 25) than in the prices of crops.

Beef cattle were higher in price in the northern and western districts than in the eastern and southern. The averages for the two

northern districts was \$9.80; for the central and eastern, \$9.10; and for the two southern districts, \$7.60. Difference in quality probably accounts for a considerable part of these price differences.

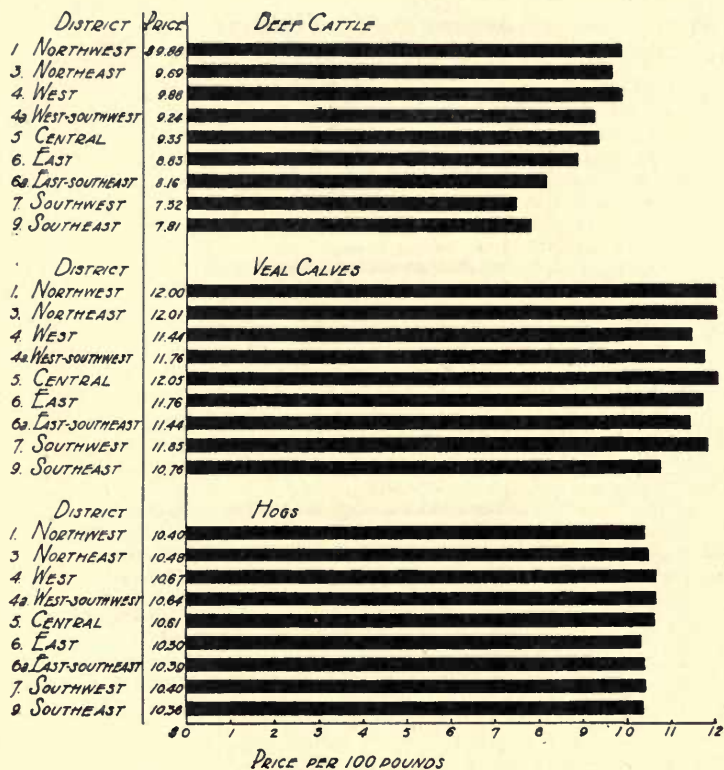


FIG. 22.—BEEF CATTLE, VEAL CALVES, AND HOGS 1925 TO 1929, AVERAGE FARM PRICES BY CROP-REPORTING DISTRICTS

Beef cattle were lower in price in central Illinois than in the northern or western counties, and lower in the southern than in the central counties. The differences were not large for veal calves, which were cheapest in the western and southeastern districts. Hog prices averaged practically the same in all districts.

Veal calves varied less in price between districts than beef cattle and there was less tendency for the price to decline from north to south.

Hogs averaged practically the same in price in all districts during this period; the largest difference between districts was between the western and eastern and amounted to only about 40 cents, or less than

4 percent of the average price in either of these districts. Prices were slightly higher in the western, west-southwestern, and central districts than in the other parts of the state.

Lamb prices, like prices of beef cattle, were progressively lower from north to south, altho differences between districts were not so large with lambs as with beef cattle. The average price of lambs for the two northern districts was \$13.00; for the central and eastern, \$12.50; and for the two southern districts, \$11.70.

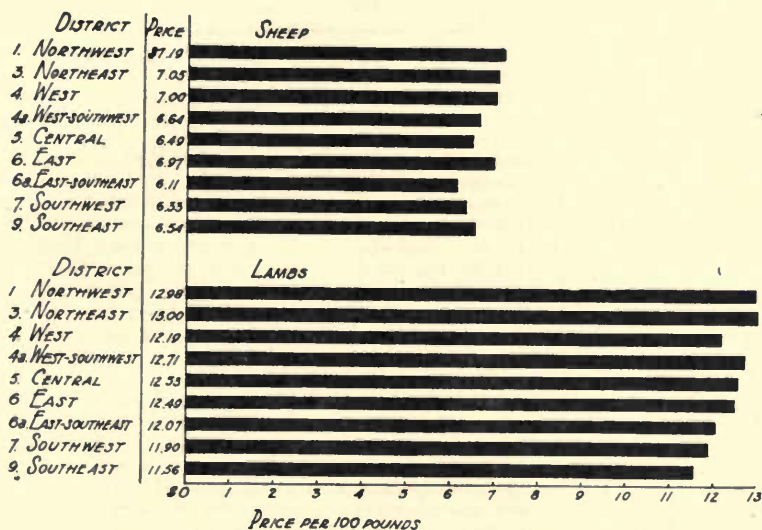


FIG. 23.—SHEEP AND LAMBS 1925 TO 1929, AVERAGE FARM PRICES BY CROP-REPORTING DISTRICTS

Both sheep and lambs were lower in the southern than in the northern districts, tho the differences were not so great as for cattle.

Sheep were a little lower in price in the southern part of the state than in the northern, altho the differences were not large.

Milk cows were much cheaper in western and southern Illinois than in northern. The highest averages were in the northeastern district, which includes the Chicago dairy district. From north to south on the eastern side of the state the averages by districts were \$107, \$81, \$72, and \$64. These differences probably reflect in part variations in the quality of the cattle in the various districts.

Horse prices were highest in the two northern, the central, and the eastern districts and lowest in the two southern districts, the other districts being intermediate.

Butterfat, Eggs, and Chickens. Average prices for 1925-1929 by districts for butterfat are shown in Fig. 24 and for chickens and eggs in Fig. 26.

Butterfat prices averaged lower from north to south. The average for the two northern districts was 44 cents a pound; for the eastern and central districts, 43 cents; and for the two southern, 40. The average was also quite low in the western and west-southwestern areas,

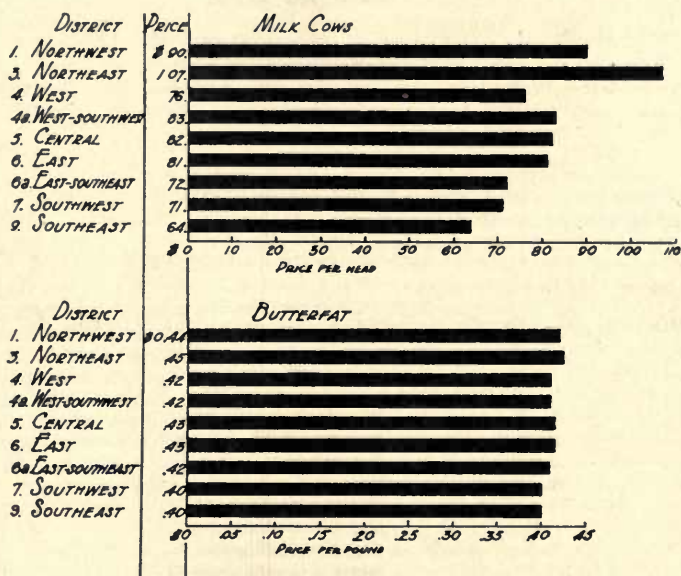


FIG. 24.—MILK COWS AND BUTTERFAT 1925 TO 1929, AVERAGE FARM PRICES BY CROP-REPORTING DISTRICTS

Milk cows were lower in southern Illinois than in northern; the average for the southeastern district was only 60 percent of that in the northeastern. Butterfat was cheaper in the western part of the state than in the eastern and cheaper in the southern and northern. There was a difference of 4 cents a pound between the two northern districts and the two southern.

being 42 cents in each. The difference of 4 cents a pound between the price in the northern and southern parts of the state, amounting to 10 percent of the price in southern Illinois, may be due in part at least to differences in quality.

Chickens were highest in the northeastern district, which lies adjacent to Chicago. Averages for some of the other districts fell below the average for this northeastern district by the following amounts: western, 3 cents; eastern and central, 1 cent; and the two southern, 2

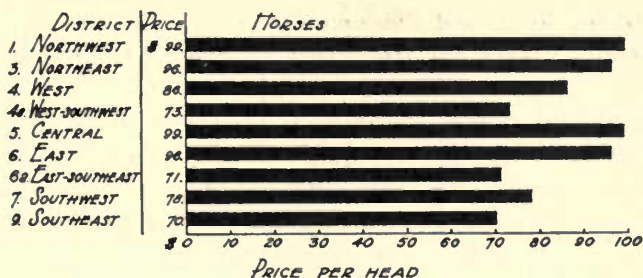


FIG. 25.—HORSES 1925 TO 1929, AVERAGE FARM PRICE BY CROP-REPORTING DISTRICTS

Horses were highest in price in the two northern districts and in the central and eastern districts.

cents. The price advantages which result from being close to a large consuming center are noticeable.

Eggs were also highest in price in the northeastern district, adjacent to Chicago. Other districts fell below this district by the following amounts: the northwestern, 4 cents; the western, 5 cents; the eastern,

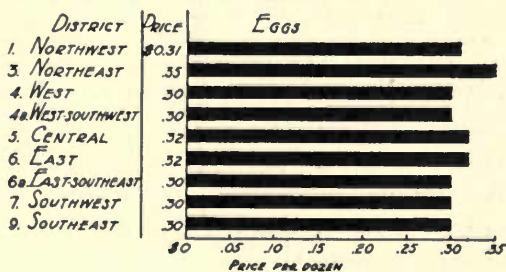
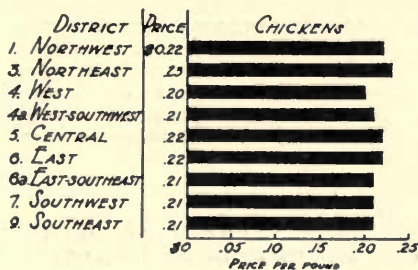


FIG. 26.—CHICKENS AND EGGS 1925 TO 1929, AVERAGE FARM PRICES BY CROP-REPORTING DISTRICTS

Both chickens and eggs were highest in price in the northeastern district, in which Chicago is located. They were lowest in the western and southern parts of the state.

3 cents; and the two southern, 5 cents. Differences in quality may explain a portion of these variations but the influence of location is clearly marked.

Apples. Apple prices were lowest in the four southern districts, which include the chief centers of production in the state (Fig. 27).

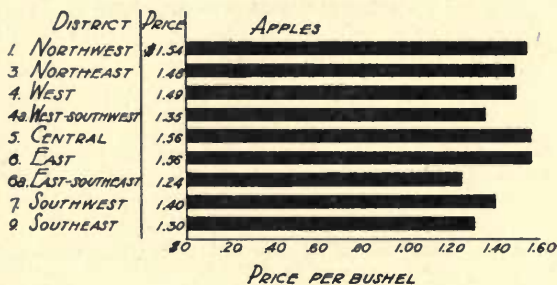


FIG. 27.—APPLES 1925 TO 1929, AVERAGE FARM PRICE BY CROP-REPORTING DISTRICTS

Apple prices varied greatly between districts. They were lowest in the centers of production in western and southern Illinois.

MONTH-TO-MONTH VARIATIONS BETWEEN DIFFERENT PARTS OF THE STATE

The discussion of local price differences among Illinois farm products has thus far been based on averages extending over a period of years. Month-to-month variations are shown by Figs. 28 to 33.

Corn. The average price of corn over the period 1925-1929, it was pointed out above, was not very different in the different parts of the state. During short periods, however, rather wide differences between districts developed, as is shown by an analysis of average monthly prices (Fig. 28). The price in eastern Illinois (District 6) is taken as a standard because it is an area from which large quantities of corn are constantly being shipped and in which prices are closely adjusted to prices in the terminal market.

There was a tendency for prices in all the other districts to sink at times to the level of District 6 but rarely to fall below it. During a year of short crops in a section, prices typically rose above prices in eastern Illinois. In central Illinois (District 5) the monthly price did not differ significantly from the price in District 6.¹ This is to be expected since both districts ship out corn to the same markets.

¹A portion of the differences between the prices in different districts is due to the fluctuations in the prices making up the samples. A statistical analysis

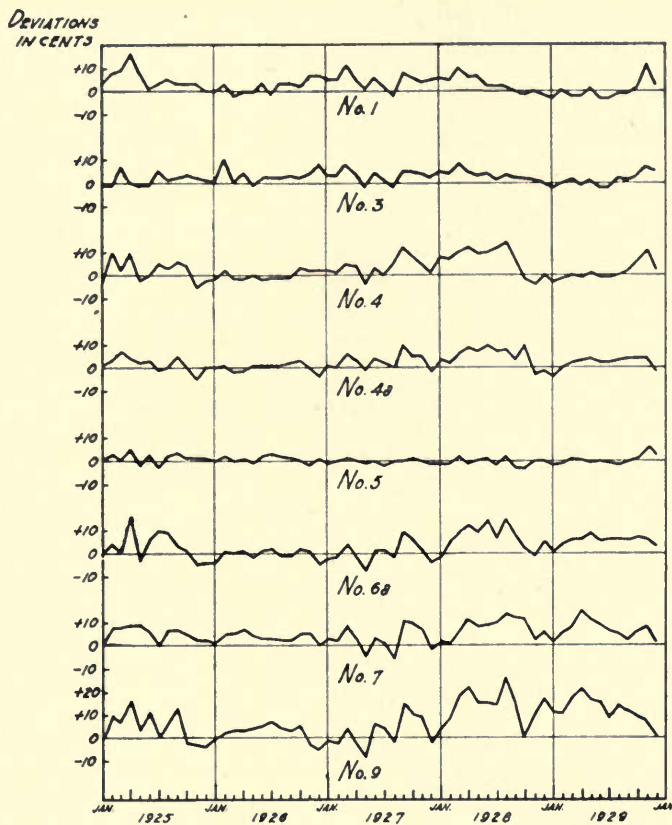


FIG. 28.—CORN: AMOUNTS BY WHICH MONTHLY FARM PRICE IN VARIOUS DISTRICTS VARIED FROM PRICE IN EAST-CENTRAL ILLINOIS (DISTRICT 6), 1925 TO 1929

The variation between prices in the southern, western, and northern parts of the state and the price in east-central Illinois was considerable. During years of large local crops prices in these parts of the state fall to the level of or slightly below the price in the east-central part. During years of small local crops, however, the prices go to a considerable margin above those in the central and eastern counties.

The balance of the state may be divided into two parts: northern and western, embracing Districts 1, 3, 4, and 4a; and southern and eastern, embracing Districts 6a, 7, and 9.

was made of these data for two months—December, 1928, and April, 1929—and it was found that differences of less than 2 to 3 cents a bushel between the price in a given district and the price in District 6 were not significant. When the differences were over 2 to 3 cents, their standard deviations were in all cases at least twice the differences.

In the northern-and-western area the price was higher than in No. 6 during the early part of 1925. It was at about the same level from the late summer of 1925 until the spring of 1927; then it was irregularly higher (than in District 6) until the fall of 1928. It was about the same level or slightly lower than in No. 6 during the winter of 1928-1929. It was about the same level as in No. 6 during the summer of 1929, and widened again, except in District 4a, in the fall of 1929. These differences were caused by short crops of corn in these sections in 1924 and 1927, fairly good crops in 1926 and 1928, and by a short crop in 1929. The price in District 4a fell below the price in No. 6 in December, 1929, because of the low quality of the corn in that area. The margin was most variable in the case of District 4, the heavy livestock-producing district of western Illinois, and least in the case of District 3 (northeastern Illinois).

In the southern-and-eastern area the variations were somewhat similar to those in the northern-and-western area except that the variations were more marked and prices did not go down to the level of District 6 after the crop of 1928 was harvested because southern Illinois had a poor crop of corn in 1928.

One practical conclusion to be drawn from this analysis is that the opportunities to profit from storing corn in years of large crops for marketing in years of short crops are greater in northern, southern, and western Illinois than they are in the heavy grain-marketing districts in the central and eastern parts of the state. This conclusion is based on the greater variability in price in the first mentioned areas. The greater variability in these sections reflects, in part at least, the fact that they are livestock sections which, during years of short crops or overexpanded livestock production, find it necessary to import corn, while the eastern and central districts, which market a large part of their grain, do not need to bring grain in, even when crops are short.

Another conclusion that may be drawn is that the relationships between the price of corn (and other feed grain) and prices of livestock or livestock products may vary considerably in different parts of the state.

Wheat. The price of wheat in central Illinois (District 5) was taken as the standard for comparison.¹ The differences that occurred between prices in this district and in the other districts are shown in Fig. 29. In the northern districts (Nos. 1 and 3) and particularly in the eastern (No. 6) the price varied but little from the price in No. 5.

¹Analysis indicated that a difference of 4 to 6 cents between the price of wheat in the other districts and in No. 6 was significant. See footnote page 588.

In the other five districts, which include all of western and southern Illinois, the price was typically above the price in No. 5, altho the amounts were rather variable. The explanation for this higher level



FIG. 29.—WHEAT: AMOUNTS BY WHICH MONTHLY FARM PRICE IN VARIOUS DISTRICTS VARIED FROM PRICE IN CENTRAL ILLINOIS (DISTRICT 5), 1925 TO 1929

Prices in the northern and eastern parts of the state varied relatively little from those in the central part, but in the soft-wheat producing districts in western and southern Illinois the variations were considerable.

is that the wheat produced in these sections is largely soft and tends to bring a higher price than the hard wheat which predominates in the central part of the state. These premiums, however, are quite variable; they were particularly large in the early part of 1925 and again in 1928.

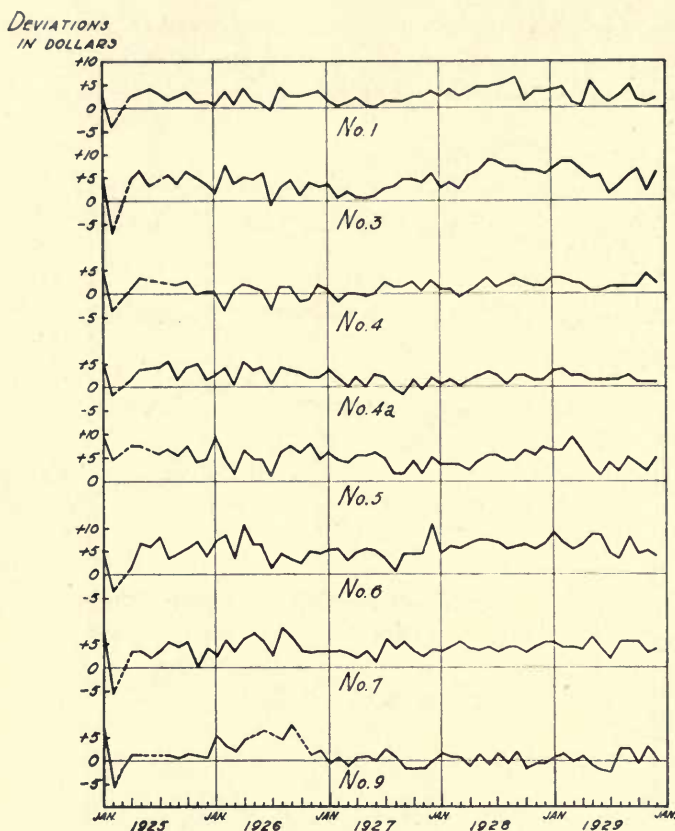


FIG. 30.—HAY: AMOUNTS BY WHICH MONTHLY FARM PRICE IN VARIOUS DISTRICTS VARIED FROM PRICE IN SOUTHEASTERN ILLINOIS (DISTRICT 6A), 1925 TO 1929

The prices in all of the other parts of the state were higher than in southeastern Illinois by irregular amounts.

Hay. The price of hay in all districts has been compared with the price in District 6a in the southeastern part of the state, where hay prices average lower than elsewhere in the state (Fig. 30).¹ Hay prices are, of course, particularly subject to the influence of local conditions. The differences between the price in the base district and in the central, eastern, and southwestern districts were particularly marked. An illustration of a local influence was the relatively large margin which prevailed in the northeastern district from the spring of 1928 until midsummer 1929 as the result of a short hay crop in 1928.

¹Differences of \$3 a ton or larger were found to be significant.

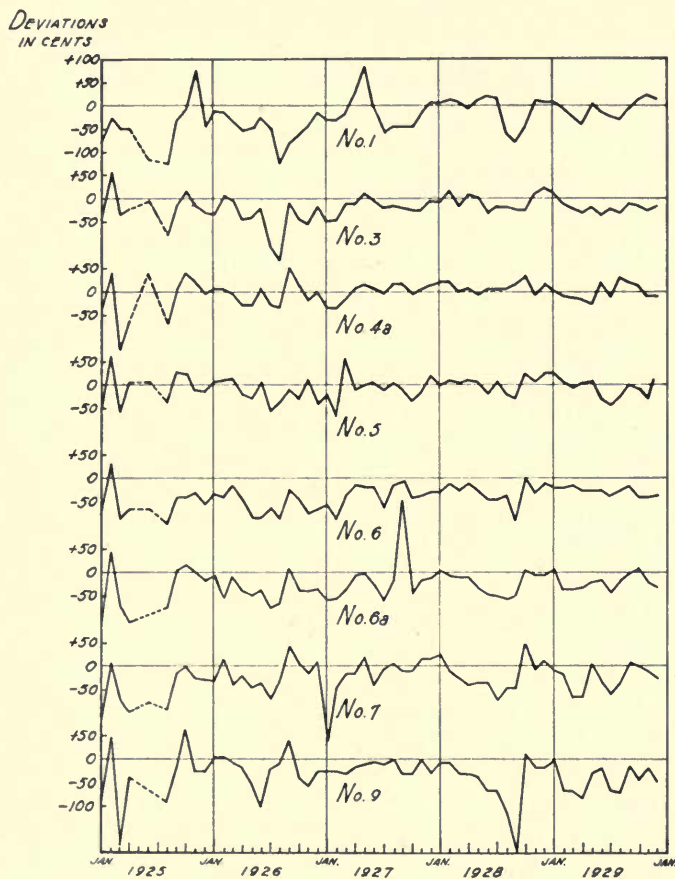


FIG. 31.—HOGS: AMOUNTS BY WHICH MONTHLY FARM PRICE IN VARIOUS DISTRICTS VARIED FROM PRICE IN WESTERN ILLINOIS (DISTRICT 4), 1925 TO 1929

There was a general tendency for the price in the other parts of the state to rise in relation to the price in western Illinois.

Hogs. The price in the western part of the state, the principal hog-producing district, was taken as the standard for comparison.¹ Although differences between districts were not large on the average, considerable month-to-month variation occurred, particularly in Districts 1, 3, 6a, 7, and 9. In all the northern part of the state the price of hogs

¹Differences of less than 25 cents per 100 pounds between the district averages were not significant.

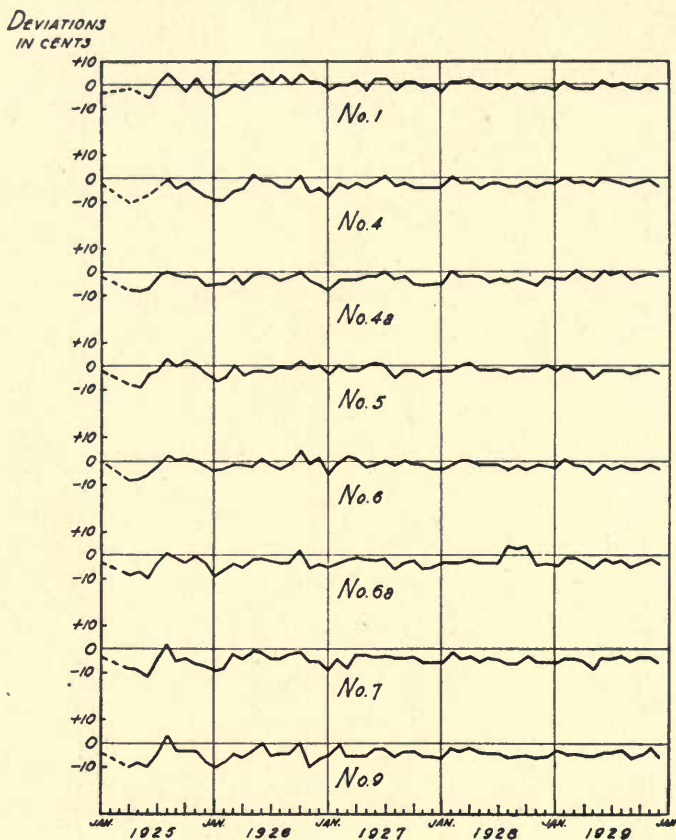


FIG. 32.—BUTTERFAT: AMOUNTS BY WHICH MONTHLY FARM PRICE IN VARIOUS DISTRICTS VARIED FROM PRICE IN NORTHEASTERN ILLINOIS (DISTRICT 3), 1925 TO 1929

A slight tendency for the price in the other parts of the state to rise in relation to the price in northeastern Illinois is evident.

showed a tendency thruout this period to rise in comparison with the price in District 4. This tendency was least noticeable in District 4a, where the price corresponded most closely with that in No. 4. Part of the irregularity probably reflects differences in the type of hog which the reporters have in mind when making their reports. As stated above, the price in the two southern districts (Nos. 7 and 9) varied considerably. This was especially true during the first nine months of 1928 (Fig. 31).

Butterfat. District 3 (the northeastern), where butterfat prices

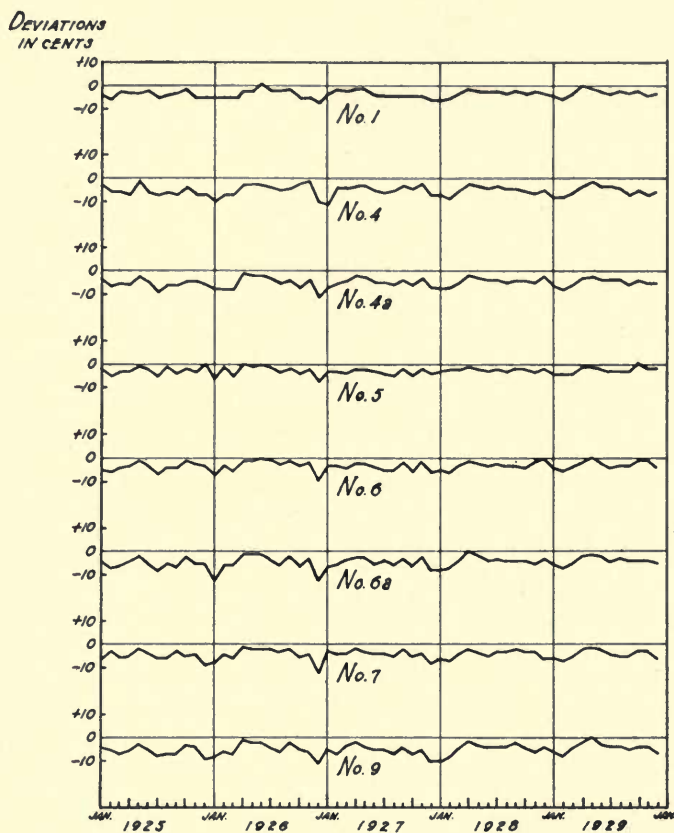


FIG. 33.—EGGS: AMOUNTS BY WHICH MONTHLY FARM PRICE IN VARIOUS DISTRICTS VARIED FROM PRICE IN NORTHEASTERN ILLINOIS (DISTRICT 3), 1925 TO 1929

The margins were not very variable and tended to maintain about the same level during this period.

were highest, was taken as the standard. In all the other districts prices tended to rise in comparison with prices in No. 3, and the margin between the various districts therefore tended to diminish. There were no very large month-to-month variations in these differences (Fig. 32).¹ This diminishing margin raises an interesting question. Does it reflect improved quality or does it indicate a tendency for marketing agencies to buy on narrower margins? A considerable margin con-

¹Differences of less than 2 cents per pound between districts were not significant.

tinues to exist between the prices in the two southern districts and those obtaining in the northern part of the state.

Eggs. Prices in District 3, where they averaged highest, were again taken as the standard (Fig. 33).¹ Prices in the other districts showed no tendency during this period to rise in relation to prices in District 6. The month-to-month variations in the margin were considerable and there was no tendency toward a very definite and regular seasonal variation in the margins between the prices in the different districts. If anything, the margin tended to diminish in the spring and increase in the fall months, that is, the price was relatively higher in the outlying districts in the spring than in the winter when compared with the price in the counties close to Chicago.

SUMMARY

Wide differences have developed among the relative prices of important Illinois farm products in recent years. On the average, prices of these products during the years from 1921 to 1928 were lower than the prices of the items which enter into farm costs. Listed in the order of their comparative cheapness, Illinois farm prices of important items for the eight-year period 1921-1928 were the following percentages of 1910-1914 prices: horses, 57; hay, 99; barley, 103; oats, 104; hogs, 124; corn, 124; cattle and milk cows, 126; wheat, 136; eggs, 143; butter, 160; wool, 163; apples, 164; chickens, 184; lambs, 186 percent.

The cheapest products were those which had been adversely influenced by the reduction in use of horses as a source of power. Crops were in general cheaper than livestock and livestock products, and feed crops were cheaper than wheat. Meat animals, except lambs, were in an intermediate position. Butter, wool, lambs, and chickens were relatively high in price.

It is readily apparent that no single cause explains this wide variety of change. In the body of this publication facts relating to each commodity are presented. Space does not permit a complete review of them here.

A question of practical importance is: How permanent will these differences prove to be? The following principles may be useful as a guide in answering this question:

(1) Products for which the demand has been reduced may be expected to continue to be relatively cheap; horses, oats, hay, and barley are examples. (2) Products for which the demand has increased may

¹Differences of less than 2 cents per dozen were not significant.

be expected to continue relatively high in price. Examples are dairy products, chickens, and perhaps lambs. (3) Products involving much labor or new capital investments will tend to remain relatively higher than those requiring but little labor or small outlays of capital. This would tend to cause milk and its products to be higher than hogs or wheat. (4) Products, the cost of which are being cheapened by improved methods of production, are likely to be relatively cheap. This does not mean that they will be less profitable at the lower price-level to those farmers who use the new methods. This factor is probably operating at the present time to reduce the price of wheat, eggs, and hogs. (5) The more bulky products which have a low value per pound are likely to remain relatively cheap because increased costs of marketing, including transportation, make up a large proportion of their total value. Hay and oats in surplus regions are examples.

In general, the conditions which have tended to establish a given level of prices during the last several years may be expected to continue to have the same influence during the next few years. There is one important exception to this rule—any commodity which during this period has been in the low or high portion of a regular cycle may be expected to change its position. This is illustrated by the change in the price of cattle during 1927. It should be noted that differences in prices do not necessarily represent differences in profits; they may simply represent differences in costs.

A number of factors have tended to make the prices of the goods that farmers buy relatively higher than the prices of farm products. Among these are the tendency for industrial output to react more quickly to unfavorable prices than farm output, the increased demands for certain nonagricultural products, reduced foreign demand for farm products, ability of certain other economic groups to establish and maintain higher scales of remuneration, and increased expenses for marketing, including transportation and conversion.

In this study the relative variability of the prices of these different commodities has been compared by computing for each commodity the average variations in the yearly averages from the average price for the entire period. In percentages these figures ranged from 3.2 for horses to 22.4 for potatoes. For other important items they were as follows: eggs, 4.6; butter, 5.4; oats, 10.6; wheat, 10.8; lambs, 13.5; apples, 14.1; cattle, 14.6; hogs, 15.5; wool, 17.0; corn, 17.8.

Variations in farm prices within the state have been studied for the years 1925 to 1929. The differences can be most quickly grasped by reference to Figs. 20 to 27. The grains in general were cheapest in

the central and east-central parts of the state. Prices of oats and wheat showed greater variations among the different districts than did corn prices. Hay was highest in price in the eastern and central parts of the state and cheapest in the western and southern. Beef cattle, milk cows, lambs, sheep, and wool were lower in price in the southern part of the state than in the northern. Prices of veal calves and hogs varied but little among districts. Butterfat, eggs, and chickens were highest in the northeastern part of the state and averaged lower in districts to the south and west.

TABLE 7.—AVERAGE ILLINOIS FARM PRICES OF SELECTED FARM PRODUCTS 1910-1929 AND INDEX NUMBERS OF PRICES¹
(1910-1914 = 100)

Year	Apples		Barley		Beef cattle		Butter		Chickens	
	Price	Index No.	Price	Index No.	Price	Index No.	Price	Index No.	Price	Index No.
1910.....	\$1.11	106.7	\$.57	90.5	\$5.11	86.0	\$.25	100.0	\$.12	109.1
1911.....	1.22	117.3	.73	115.9	4.96	83.5	.23	92.0	.10	90.9
1912.....	.87	83.6	.77	122.2	5.92	99.7	.26	104.0	.10	90.9
1913.....	.92	88.5	.53	84.1	6.61	111.3	.27	108.0	.12	109.1
1914.....	1.10	105.8	.56	88.9	7.08	119.2	.26	104.0	.12	109.1
1915.....	.83	79.8	.63	100.0	6.73	113.3	.26	104.0	.12	109.1
1916.....	.89	85.6	.74	117.5	7.39	124.4	.28	112.0	.14	127.3
1917.....	1.43	137.5	1.18	187.3	9.38	157.9	.35	140.0	.17	154.5
1918.....	1.63	156.7	1.27	201.6	11.02	185.5	.43	172.0	.21	190.9
1919.....	2.35	226.0	1.07	169.8	11.33	190.7	.50	200.0	.24	218.2
1920.....	2.39	229.8	1.20	190.5	9.67	162.8	.54	216.0	.26	236.4
1921.....	2.31	222.1	.58	92.1	6.11	102.9	.37	148.0	.21	190.9
1922.....	2.06	198.1	.55	87.3	6.48	109.1	.35	140.0	.19	172.7
1923.....	1.55	149.0	.59	93.6	6.60	111.1	.40	160.0	.19	172.7
1924.....	1.44	138.5	.70	111.1	6.51	109.6	.40	160.0	.20	181.8
1925.....	1.60	153.8	.74	117.5	7.58	127.6	.40	160.0	.20	181.8
1926.....	1.50	144.2	.60	95.2	7.46	125.6	.42	168.0	.22	200.0
1927.....	1.48	142.3	.68	107.9	8.64	145.4	.43	172.0	.20	181.8
1928.....	1.71	164.4	.74	117.5	10.71	180.3	.44	176.0	.21	190.9
1929.....	1.83	176.0	.53	84.1	10.54	177.4	.44	176.0	.22	200.0

Year	Clover seed (red)		Corn		Eggs		Hay		Hogs	
	Price	Index No.	Price	Index No.	Price	Index No.	Price	Index No.	Price	Index No.
1910.....	\$ 7.27	80.6	\$.53	91.4	\$.22	104.8	\$11.77	84.4	\$8.41	113.0
1911.....	9.05	100.3	.50	86.2	.18	85.7	14.53	104.2	6.23	83.7
1912.....	10.78	119.5	.63	108.6	.22	104.8	16.45	117.9	6.97	93.7
1913.....	9.30	103.1	.57	98.3	.21	100.0	12.65	90.7	7.81	105.0
1914.....	8.69	96.3	.67	115.5	.22	104.8	14.36	102.9	7.80	104.8
1915.....	8.93	99.0	.68	117.2	.21	100.0	12.94	92.8	6.69	89.9
1916.....	9.70	107.5	.73	125.9	.25	119.0	11.38	81.6	8.74	117.5
1917.....	10.84	120.2	1.39	239.6	.34	161.9	15.34	110.0	14.60	196.2
1918.....	16.70	185.1	1.31	225.9	.39	185.7	20.67	148.2	16.53	222.2
1919.....	23.90	265.0	1.49	256.9	.43	204.8	21.20	152.0	16.85	226.5
1920.....	23.22	257.4	1.35	232.8	.46	219.0	24.35	174.6	13.33	179.2
1921.....	10.47	116.1	.49	84.5	.32	152.4	15.32	109.8	7.92	106.4
1922.....	10.94	121.3	.53	91.4	.28	133.3	12.58	90.2	8.72	117.2
1923.....	11.59	128.5	.73	125.9	.29	138.1	13.45	96.4	7.17	96.4
1924.....	13.75	152.4	.86	148.3	.30	142.8	15.56	111.5	7.62	102.4
1925.....	16.10	178.5	.93	160.3	.33	157.1	15.33	94.1	11.38	153.0
1926.....	17.65	195.7	.63	108.6	.31	147.6	15.35	110.0	12.15	163.3
1927.....	20.10	222.8	.74	127.6	.28	133.3	13.18	94.5	9.88	132.8
1928.....	17.42	193.1	.86	148.3	.30	142.8	11.41	81.8	9.02	121.2
1929.....	15.90	176.3	.84	144.8	.31	147.6	11.67	83.6	9.78	131.4

(Table 7 concluded on page 599)

Month-to-month variations between prices in different parts of the state from 1925 to 1929 are shown in Figs. 28 to 33. These variations were rather marked in the cases of corn, wheat, hay, and hogs and rather small in the case of butterfat and eggs. Corn prices were more variable in northern, western, and southern Illinois than in central and east-central Illinois. Margins between the prices of hogs and butterfat in the various parts of the state apparently decreased during this period.

TABLE 7.—AVERAGE ILLINOIS FARM PRICES OF SELECTED FARM PRODUCTS 1910-1929 AND INDEX NUMBERS OF PRICES¹—*Concluded*
(1910-1914 = 100)

Year	Horses		Lambs		Milk cows		Oats		Potatoes	
	Price	Index No.	Price	Index No.	Price	Index No.	Price	Index No.	Price	Index No.
1910.....	\$156.83	103.5	\$6.31	106.4	\$48.15	89.3	\$.37	97.4	\$.58	69.9
1911.....	151.92	100.2	5.05	85.2	48.27	89.5	.35	92.1	.91	109.6
1912.....	152.92	100.9	5.67	95.6	49.87	92.4	.41	107.9	.98	118.1
1913.....	152.17	100.4	6.18	104.2	59.32	110.0	.35	92.1	.75	90.4
1914.....	144.08	95.0	6.43	108.4	64.09	118.8	.39	102.6	.91	109.6
1915.....	138.74	91.5	7.29	122.9	63.74	118.2	.44	115.8	.60	72.3
1916.....	141.42	93.3	8.71	146.9	68.06	126.2	.42	110.5	1.22	147.0
1917.....	141.42	93.3	12.82	216.2	81.30	150.7	.60	157.9	2.18	262.6
1918.....	138.33	91.3	14.43	243.3	91.16	169.0	.73	192.1	1.37	165.1
1919.....	127.75	84.3	13.51	227.8	100.47	186.3	.65	171.0	1.74	209.6
1920.....	125.58	82.8	12.33	207.9	94.26	174.7	.74	194.7	3.10	373.5
1921.....	93.58	61.7	7.14	120.4	59.28	109.9	.33	86.8	1.40	168.6
1922.....	89.17	58.8	9.97	168.1	56.75	105.2	.33	86.8	1.29	155.4
1923.....	86.50	57.1	10.31	173.9	60.47	112.1	.40	105.3	1.04	125.3
1924.....	79.83	52.7	11.05	186.3	62.12	115.2	.45	118.4	.98	118.1
1925.....	84.99	56.1	13.13	221.4	64.26	119.1	.42	110.5	1.34	161.4
1926.....	85.75	56.6	12.17	205.2	70.53	130.8	.36	94.7	2.23	268.7
1927.....	83.17	54.9	11.86	200.0	77.83	144.3	.42	110.5	1.67	201.2
1928.....	85.83	56.6	12.49	210.6	94.33	174.9	.46	121.0	1.02	122.9
1929.....	86.33	57.0	12.59	212.3	100.25	185.8	.42	110.5	1.10	132.5

Year	Rye		Sheep		Veal calves		Wheat		Wool	
	Price	Index No.	Price	Index No.	Price	Index No.	Price	Index No.	Price	Index No.
1910.....	\$.74	101.4	\$4.73	111.0	\$6.71	93.3	\$.99	107.6	\$.23	115.0
1911.....	.76	104.1	3.66	85.9	6.21	86.4	.86	93.5	.18	90.0
1912.....	.79	108.2	3.97	93.2	6.81	94.7	.95	103.3	.19	95.0
1913.....	.66	90.4	4.35	102.1	7.92	110.2	.88	95.6	.18	90.0
1914.....	.70	95.9	4.58	107.5	8.32	115.7	.90	97.8	.19	95.0
1915.....	.92	126.0	5.23	122.8	8.22	114.3	1.15	125.0	.25	125.0
1916.....	.96	131.5	6.21	145.8	9.00	125.2	1.25	135.9	.30	150.0
1917.....	1.61	220.5	8.98	210.8	11.44	159.1	2.05	222.8	.48	240.0
1918.....	1.79	245.2	11.55	271.1	12.81	178.2	2.07	225.0	.61	305.0
1919.....	1.42	194.2	8.96	210.3	13.68	190.3	2.17	235.9	.54	270.0
1920.....	1.62	221.9	7.75	181.9	12.66	176.1	2.26	245.6	.37	185.0
1921.....	1.07	146.6	4.09	96.0	8.44	117.4	1.25	135.9	.16	80.0
1922.....	.80	109.6	5.14	120.6	8.25	114.7	1.08	117.4	.27	135.0
1923.....	.74	101.4	5.48	128.6	8.72	121.3	1.04	113.0	.35	175.0
1924.....	.80	109.6	6.04	141.8	8.96	124.6	1.14	123.9	.37	185.0
1925.....	1.01	138.4	6.91	162.2	9.92	138.0	1.57	170.6	.38	190.0
1926.....	.83	113.7	6.37	149.5	10.86	151.0	1.40	152.2	.35	175.0
1927.....	.90	123.3	6.42	150.7	11.48	159.7	1.25	135.9	.33	165.0
1928.....	.96	131.5	6.78	159.2	12.95	180.1	1.28	139.1	.40	200.0
1929.....	.92	126.0	6.63	155.6	13.46	187.2	1.13	122.8	.35	175.0

¹Monthly prices for these years are available in "Illinois Crop and Live Stock Statistics," Circular 396, Illinois Department of Agriculture.

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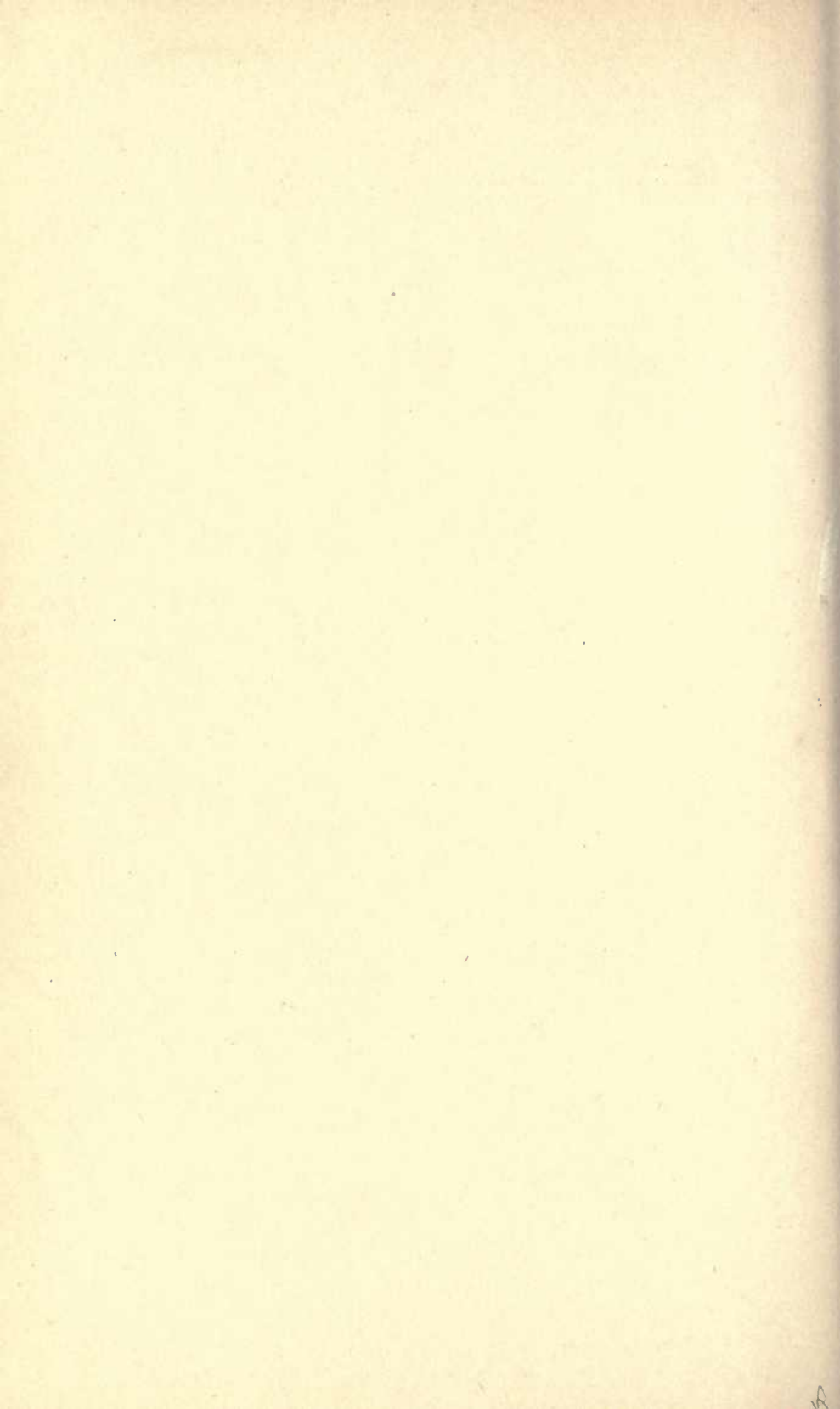
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