

SOME ECONOMIC FACTORS AFFECTING THE PRICE OF FED
LAMBS DURING THE WINTER AND SPRING MONTHS

by

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INTRODUCTION

Each year anyone interested in feeding lambs has the problem of deciding which month or months will afford the best time to market his lambs.

Since the highest monthly average price of fed lambs during the last ten years has not occurred regularly in any one month or period of the winter or spring, the question arises as to the cause of the shifting of the highest monthly average price in different years. During the last ten years each month of the period November to April inclusive, with the exception of February, has had the highest average price for that period one or more times. As a result of the shift of the high prices, in some years it is to a lamb feeder's advantage to market his fat lambs during the spring months and in other years during the winter months.

Most of the lambs marketed during the winter and spring months are lambs fed in regions other than where they were raised.

REVIEW OF LITERATURE

Some previous studies have been made in regard to the influence of production and supply of lambs upon prices. However, most of these studies pertain to the sheep industry as a whole and its relation to price.

In the charts relating to the 1929 Agricultural Outlook,¹ it was pointed out that generally lamb prices fluctuate according to the number of sheep and lambs coming on the market. High receipts depress the price and low receipts cause the price to rise.

The above study found that of the yearly receipts of "sheep and lambs" about 90 per cent were lambs. It also stated that the corn belt states market the greatest number of lambs in the fall and early winter months and the winter fed lambs from Colorado and Nebraska come onto the market in greatest number during the spring months.

It concluded that the greatest single factor determining the price of lamb is the quantity of lamb available for consumption. As a rule the greater the supply of lamb for consumption, the lower the price.

ImMasche² made a similar study of the marketing of sheep and lambs using data including the first part of 1930. He pointed out that the cycles in sheep production are caused by cycles of profits and losses in the industry. It was also shown in his study that in recent years the sheep industry has been primarily on a lamb production basis rather than on a mutton and wool basis. The evidence of

1. United States Department of Agriculture, Bureau of Agricultural Economics, Charts Relating to the 1929 Agricultural Outlook, Part II Live Stock and Products.

2. ImMasche, F. W., Monthly letter to animal husbandmen, Armour and Company, December, 1930

this was shown by the gradual decreasing percentage which sheep slaughter forms of the total sheep and lamb slaughter under federal inspection.

No studies were found dealing directly with the marketing of fed lambs or the economic factors that would tend to influence the price of these lambs during the winter and spring months.

PURPOSE OF STUDY

This study has been made with the purpose of determining some economic factors affecting the price of fed lambs during the winter and spring months. The factors studied were: 1. The slaughter of sheep and lambs under federal inspection; 2. the time of the movement of fed lambs during the winter and spring months; 3. the feeder lamb movement during the fall months; 4. the supply of fed lambs furnished by different regions; 5. the price changes of beef steers and hogs which furnish competitive meats.

Production of lamb is generally considered the most important factor affecting the price of lamb. In this study an analysis was made of the feeder lamb movement in the fall and the fat lamb movement during the winter and spring, together with the prices paid for lambs during that period of the year in an attempt to determine some of the important economic factors that tend to influence the price of fed

lambs during the period from November to April, inclusive.

This information should be of value in judging in advance the supply of fed lambs during the winter and spring months and possibly prevent an over supplied market in some months, which would probably result in a depressed market.

METHOD OF PROCEDURE

The majority of the lambs fed each year are marketed during the months, November, December, January, February, March and April. Consequently that was the period selected for this study. The ten year period, 1921 to 1931 inclusive, has been used since the sheep industry has been more on a lamb production basis during that time, instead of mutton and wool basis as it was previous to the World war. The most important lamb feeding states were selected and include Michigan, Wisconsin, Minnesota, North and South Dakota, Indiana, Illinois, Ohio, Iowa, Kansas, Colorado and Nebraska. The data of the sheep and lamb movement by months and state of origin were obtained from the Bureau of Agricultural Economics of the United States Department of Agriculture. Also the feeder lamb movement data were from this source.

The prices used are monthly top averages of fed lambs at Chicago as compiled from the United States Department of Agriculture Yearbook, 1931 and reports of the Bureau of Agricultural Economics. The data for the monthly slaughter

for sheep and lambs under federal inspection and the number of sheep in the United States were taken from the 1931 Yearbook of Agriculture and Crops and Markets Reports for the year 1931. The data for the number of sheep in Kansas were taken from the Twenty-Seventh Biennial Report of the State Board of Agriculture of Kansas, 1929-1930.

This study was made of some economic factors affecting the price of fed lambs during the winter and spring months because of the gaining importance of lambs fattened in the corn belt states and in Colorado and Nebraska in recent years, and because Kansas markets more of its lambs during the period from November to April than any other six months of the year.

THE SHEEP SUPPLY OF THE UNITED STATES

The number of sheep on farms on January 1, in the United States has increased steadily each year since 1922, showing an increase of 40 per cent of the total number during the eight year period, 1922-1930. The sheep production cycle usually extends over a period of from seven to ten years, with three to five years of increased production followed by three to five years of decreased production. However the period, 1922-1930, represents the longest period of continuous increase in the sheep population of the United States during the past 50 years. The number of sheep on

farms January 1, 1921, in the United States exceeds any previous number since 1884. (Table I.)

Monthly and yearly slaughter under federal inspection have also increased steadily as the increase in number of sheep and lambs on farms January 1, was taking place as shown by Table I. The per cent increase in the slaughter of sheep and lambs from 1922 to 1931 has been greater than the per cent increase in number of sheep and lambs.

The increase in number of sheep on farms and the slaughter of sheep and lambs would indicate that the consumption of lamb per capita has been gradually increased during the last eight years.

THE TREND OF THE KANSAS SHEEP SUPPLY

Although Kansas is one of the less important sheep producing states, the number of sheep on farms March 1, has almost been doubled in the last seven years. (Table II.) The number on farms in 1929 was the greatest on record, and records are available since 1889. This increase can probably be accounted for to quite an extent by the recent increase in the number of lambs fed each year in the Kansas wheat fields and feed lots. Kansas markets more of its lambs during the November to April period than in the other six months of the year, so it can be regarded as a more important lamb feeding state than a production state.

Table I.-- Number of sheep on farms in the United States, yearly slaughter of sheep and lambs (under federal inspection) and the yearly average price of lambs, Chicago.

Year	Number of sheep on farms Jan. 1 000 omitted	Yearly slaughter under federal inspection. 000 omitted	Yearly average price of lambs at Chicago
1907	44,518	10,252	7.05
1908	46,557	10,305	6.33
1909	48,382	11,343	7.43
1910	47,072	11,408	7.59
1911	47,349	14,020	5.92
1912	43,279	14,979	7.18
1913	40,700	14,406	7.69
1914	37,773	14,229	7.99
1915	36,287	12,212	9.05
1916	36,543	11,941	10.77
1917	36,700	9,345	15.68
1918	39,000	10,320	16.98
1919	41,000	12,691	16.31
1920	40,243	10,982	15.50
1921	38,690	13,005	9.86
1922	36,186	10,929	13.68
1923	36,212	11,529	13.89
1924	36,876	11,991	14.57
1925	38,112	12,001	15.66
1926	39,730	12,961	14.26
1927	41,881	12,883	14.12
1928	44,795	13,488	14.99
1929	47,704	14,023	14.62
1930	50,503	16,696	9.69
1931	51,911(a)	18,071(b)(d)	7.26(c)(d)

Data from Yearbook of Agriculture, 1931, United States Department of Agriculture.

- (a) Page 861
- (b) Page 871
- (c) Page 869
- (d) Preliminary report

Table II.-- Sheep in Kansas and the movement to market each year.

Year	Sheep on farms March 1	Market movement for the year	Market movement for 6 mos. Nov.-April	Per cent marketed Nov.-April
1921	266,055	510,525	279,390	55
1922	220,550	599,820	328,061	55
1923	178,660	433,592	244,541	56
1924	181,309	436,166	248,341	57
1925	231,756	491,693	296,874	60
1926	258,201	554,720	340,249	61
1927	270,613	572,939	350,885	61
1928	291,081	578,340	355,576	62
1929	350,581	665,781	409,065	61
1930	349,445 (a)	650,181 (b)	436,446 (b)	67

(a) Kansas State Board of Agriculture, 27th Biennial Report, 1929-1930.

(b) United States Department of Agriculture, Bureau of Agricultural Economics, Division of Crops and Live Stock Estimates.

REGIONAL MARKETING OF SHEEP AND LAMBS

The United States may be divided into eight distinctive regions according to the movement of sheep and lambs to market because of the variation in types of lambs produced and the seasonal movement in each respective region.

The states included in each region with the average number marketed each month from each region during the five year period, 1926-1930, are shown in figure 1.

The first of the new crop of lambs which are the milk fat lambs, are marketed from California. These lambs arrive on the market at a time when the last of the fed lambs are being marketed. The bulk of the California lambs are marketed by June and they are followed by spring lambs from the southern section, Kentucky, Virginia, Tennessee, West Virginia, Arkansas, and Missouri. Soon after the movement from the southern region gets well under way, the spring lambs from Nevada, Idaho, Oregon and Washington are marketed. Following these lambs on the market are the spring lambs from the southern and northern corn belt. The lambs marketed from the new lamb crop, so far, are suitable for slaughter.

The movement of lambs from the western range begins in August and continues into November. Approximately one-half of the range lambs are purchased by feeders. The purchasers

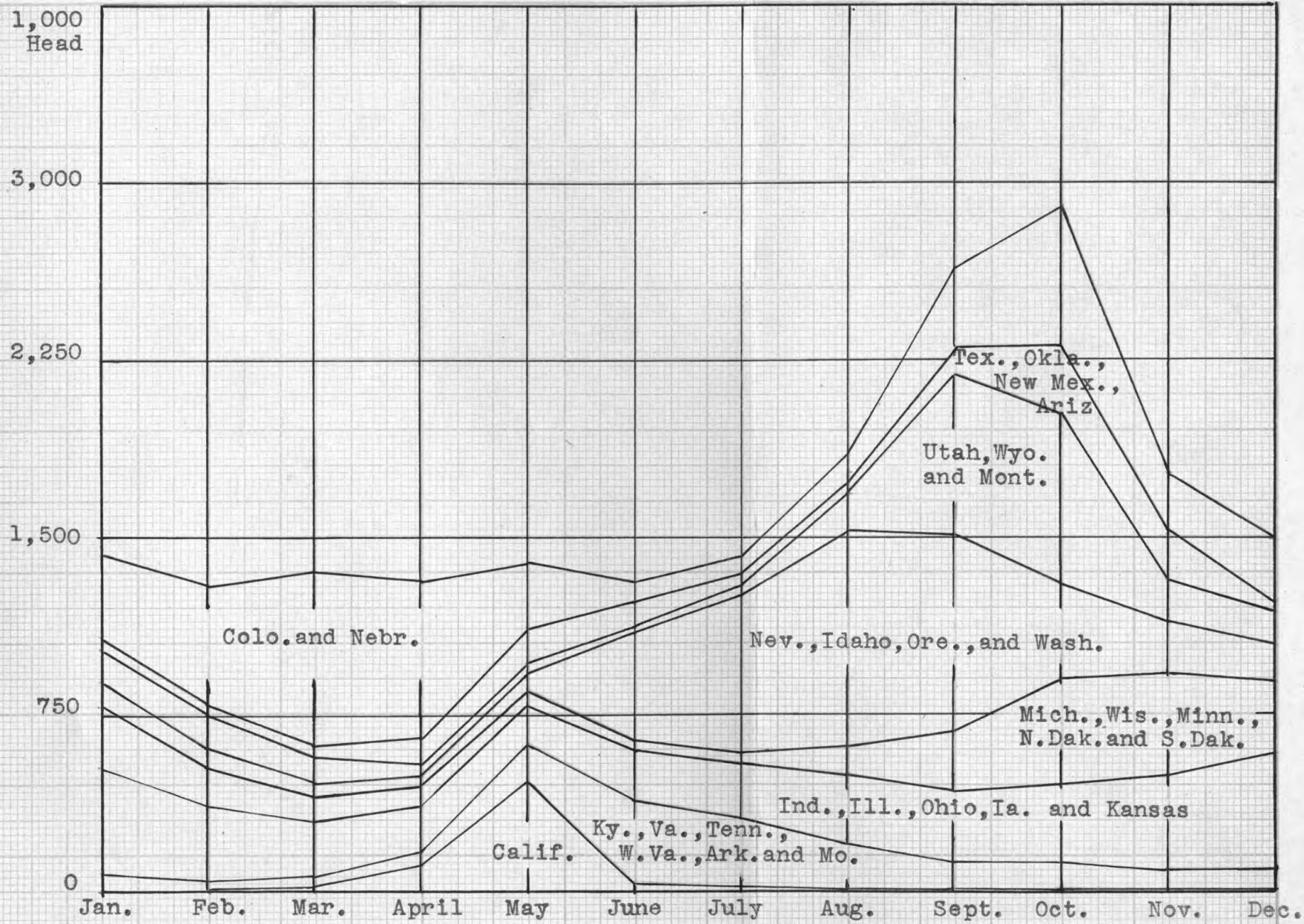


Fig. 1.-- Regional marketing of sheep and lambs, average 1926-1930. U. S. D. A., Bureau of Agricultural Economics, Crop and Live Stock Estimates.

of the greatest number of lambs that require additional feeding are the lamb feeders in the corn belt states and Colorado and Nebraska. The fed lambs, after being fattened, are marketed during the winter and spring months.

This study deals primarily with the latter movement in an effort to find some economic factors that influence the price of the lambs that are fattened in the corn belt states and in Colorado and Nebraska.

INFLUENCE OF SLAUGHTER ON PRICE

Since the slaughter of sheep and lambs under federal inspection has increased quite rapidly from 1922 to 1930, the question arises in regard to what influence this increase has had on the price of lambs. The data for the slaughter are for both sheep and lambs, but since the percent that sheep are of the total slaughter has been decreasing during this period and at present is comparatively small, it seems satisfactory to use the total slaughter of both sheep and lambs. (Table III.)

The monthly slaughter has an inverse relationship to the monthly average price of lambs at Chicago, as shown by figure 2. That is, as the number of lambs slaughtered increases to any marked degree, the price usually decreases and never has the peak price of lambs been in any month or months of the heaviest slaughter, but more often does the

Table III.-- Sheep and lamb slaughter (under federal inspection.)

Year	Total Slaughter of sheep and lambs	Per cent lambs are of total slaughter	Per cent sheep are of total slaughter
1923	11,529,000	86.84	13.16
1924	11,991,000	89.34	10.66
1925	12,001,000	89.70	10.30
1926	12,961,000	90.38	9.62
1927	12,883,000	91.09	8.91
1928	13,488,000	91.74	8.26
1929	14,023,000	91.23	8.77
1930	16,696,000	93.94	6.06
1931	18,071,000	94.86	5.14

Source of data: United States Department of Agriculture, Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

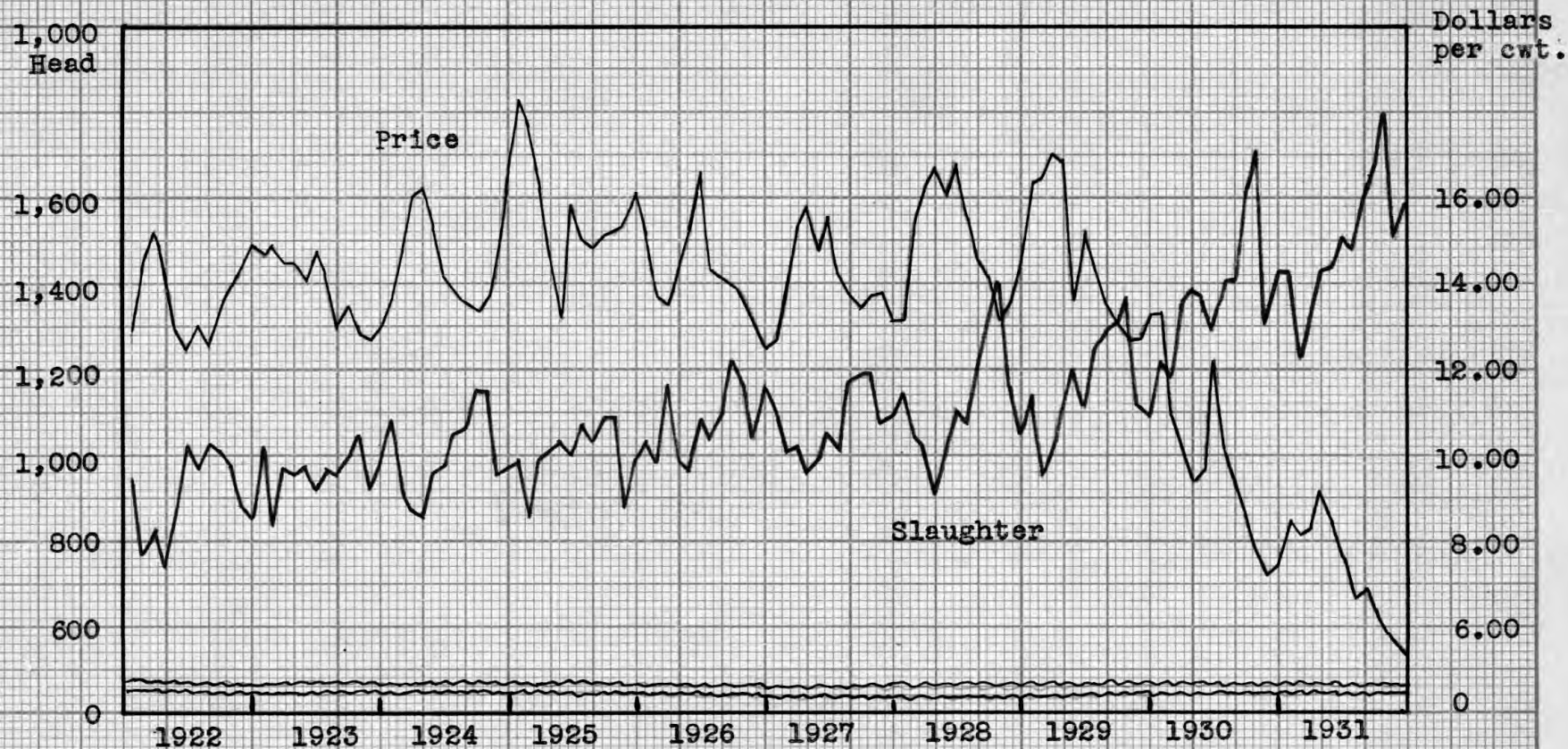


Figure 2.-- Monthly slaughter of sheep and lambs (under federal inspection) and the Chicago monthly average price of lambs.

U. S. D. A. Yearbook of Agriculture, 1931, and Reports of Crops and Markets.

highest monthly average price come in the months of lightest slaughter, as was shown in previous studies.

As the trend of the slaughter of sheep and lambs has been steadily increasing since 1922, the price trend of lambs has been gradually declining since 1924. This downward price trend has been brought about largely by the increase in slaughter of sheep and lambs and also by the character of lamb meat. Lamb meat is more perishable than beef or pork and for that reason it must be moved into consumption channels soon after slaughter. With the increase of production and slaughter of lamb, the price consequently was lowered to move the expanded supply into channels of consumption.

SUPPLY OF LAMBS DURING WINTER AND SPRING MONTHS

Since the supply factor seems to have a direct bearing on the price of lambs, the following material will deal with the supply of lambs during the winter and spring months. The number of lambs marketed from Michigan, Minnesota, Wisconsin, North and South Dakota, Indiana, Ohio, Iowa, Kansas, Colorado, and Nebraska constitute about 75 per cent of the total lambs marketed during November, December, January, February, March, and April. (Table IV.)

From an analysis of the marketing practices of these different states it was found that one group, Michigan,

Table IV. Sheep and lamb movement from the corn belt and Colorado and Nebraska from November to April.

Year	United States	No. from corn belt, Colo., and Neb.	Per cent corn belt, Colorado, and Neb. is of total
1921-22	6,467,278	4,812,079	74
1922-23	6,997,105	5,381,076	77
1923-24	6,959,071	5,272,166	76
1924-25	7,305,890	5,403,785	74
1925-26	7,680,022	5,647,682	74
1926-27	7,798,463	5,520,218	71
1927-28	7,932,911	5,817,555	73
1928-29	8,727,986	6,049,173	70
1929-30	9,642,826	6,842,462	71
1930-31	11,253,000	6,575,000	59

Source of data: U. S. D. A. Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

Wisconsin, Minnesota, North and South Dakota, Indiana, Illinois, Ohio, Iowa and Kansas, follows a general practice of marketing their feed lambs in a similar manner and Colorado and Nebraska are more nearly alike, but differ greatly from the first group of states. In the following discussion the first group of states will be referred to as the corn belt states and the other two by their respective names.

CORN BELT MOVEMENT OF FED LAMBS

The states that have been designated as the corn belt in this study show they have a similar practice of marketing the majority of their lambs during the months of November, December and January. (Figure 3.) This can probably be explained because of the type of feeding, characteristic of the corn belt, which is usually a concentrated feeding period lasting approximately from 90 to 100 days. The number of lambs marketed from the corn belt during November, December, and January, in per cent of their total movement of the six month period, November to April, is shown in Table V. An average of the ten year period shows that of the total number of lambs marketed from the corn belt states during the months November to April, 68 per cent of them are marketed during November, December and January. In one year the corn belt marketed as high as 72 per cent of

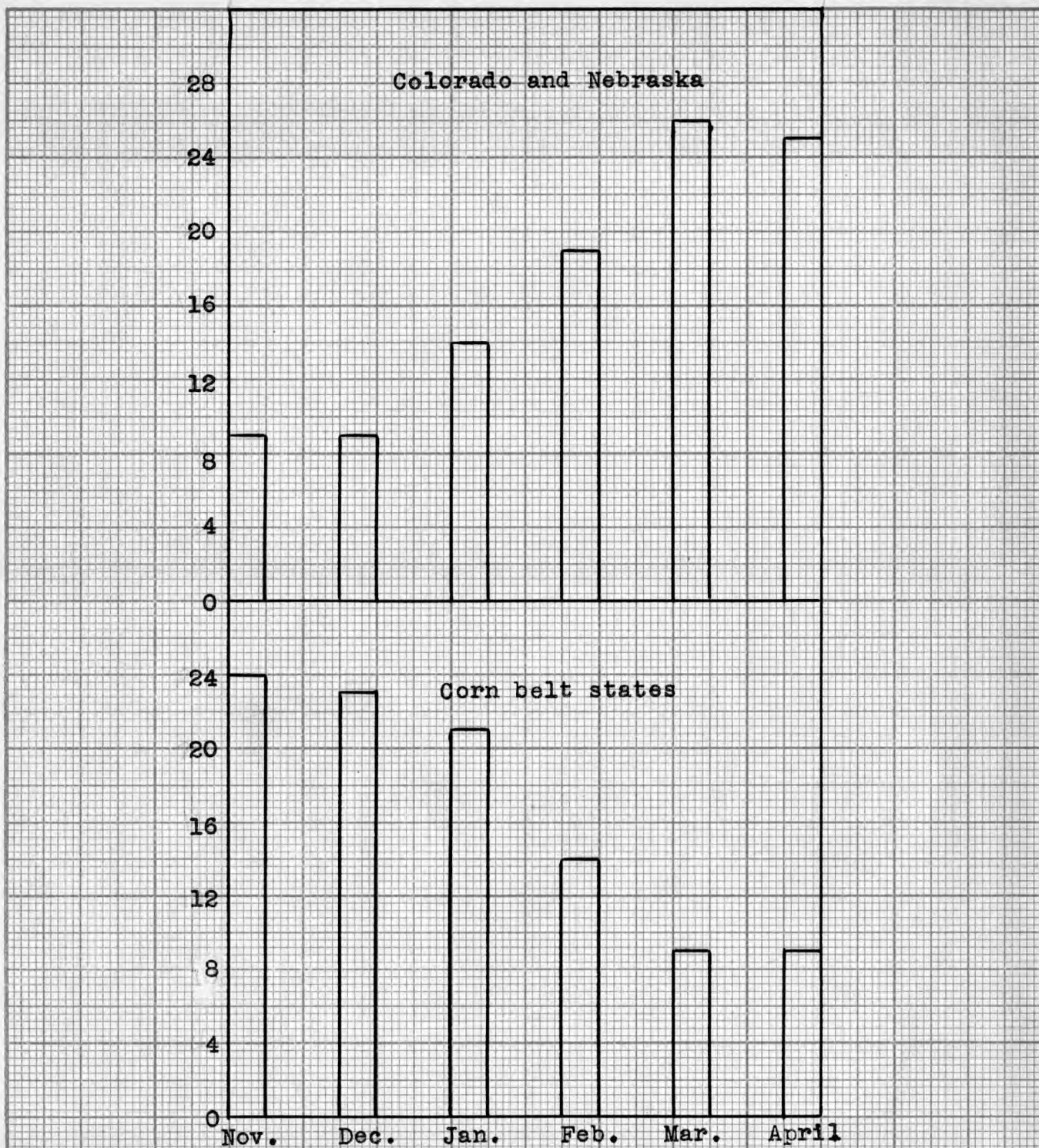


Fig. 3.-- Proportion of the six-months' total movement of sheep and lambs from corn belt and Colorado and Nebraska that is moved each month. (10 year average, 1921-1931)

U.S.D.A., Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

Table V.-- Proportion of the six months' total movement of the corn belt that is moved each month.

Year	Nov.	Dec.	Jan.	Per cent moved first 3 months	Feb.	Mar.	Apr.	Per cent moved last 3 months
1921-22	27	23	20	70	11	9	10	30
1922-23	25	21	21	67	13	9	11	33
1923-24	22	23	22	67	15	9	9	33
1924-25	25	27	19	71	12	8	9	29
1925-26	22	22	21	65	15	11	9	35
1926-27	21	22	22	65	16	11	8	35
1927-28	28	22	22	72	13	7	8	28
1928-29	25	22	23	70	13	8	9	30
1929-30	22	22	20	64	14	12	10	36
1930-31	24	25	22	71	14	9	6	29
10-yr. av.	24	23	22	68	14	9	9	32

Source of data: United States Department of Agriculture, Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

the lambs during the first three months of the period and in another, only 64 per cent. However, the variance is small and shows that the usual practice of marketing their fed lambs early in the winter is followed closely.

MOVEMENT OF FED LAMBS FROM COLORADO AND NEBRASKA

A comparison of the movement of sheep and lambs from Colorado and Nebraska with that of the corn belt during the winter and spring months, shows that Colorado and Nebraska follow quite a different plan of marketing than do the corn belt states.

While the heaviest movement of lambs from the corn belt occurs during November, December, and January, comparatively few lambs are sent to market from the feed lots of Colorado and Nebraska during these months. Their usual practice is to market the larger portion of their fed lambs during February, March, and April. (Figure 3.) This perhaps is due to the different type of feeding in Colorado and Nebraska than is used in the corn belt. The feeding period in the two states is usually longer and not as concentrated as is the latter.

The movement of sheep and lambs from Colorado and Nebraska during February, March, and April, in per cent of their total movement during the period, November to April, varies from 62 per cent to 72 per cent during the ten years,

(1921-1931) and shows an average of 68 per cent (Table VI) for the ten years period, which is the same figure as the corn belt markets during November, December, and January.

It is quite evident that while the corn belt furnishes the greatest proportion of the supply of lambs during November, December, and January, few lambs are marketed from Colorado and Nebraska during those months and as the movement from the corn belt drops in February, March, and April, the markets are supplied chiefly by the lambs fattened in Colorado and Nebraska.

TOTAL MOVEMENT OF FED LAMBS DURING WINTER AND SPRING MONTHS

The movement of fed lambs from Colorado and Nebraska and the corn belt states has been fairly uniform during the last ten years. However, there has been a gradual increase each year with the exception of three years, 1923-24, 1926-27, and 1930-31, over the preceeding years.

Practically all of the lambs marketed from Colorado and Nebraska and the corn belt states during the period from November to April, inclusive, are suitable for slaughter and constitute about 75 per cent of the total movement of lambs from all states for that period.

There are several factors that determine the total movement of fed lambs during the winter and spring months,

Table VI.-- Proportion of the six months' total movement of Colorado and Nebraska that is moved each month.

Year	Nov.	Dec.	Jan.	Per cent moved first 3 months	Feb.	Mar.	Apr.	Per cent moved last 3 months
1921-22	12	8	17	37	19	26	18	63
1922-23	11	8	16	35	18	24	23	65
1923-24	9	11	18	38	18	23	21	62
1924-25	6	9	14	29	20	28	23	71
1925-26	7	9	12	28	18	30	24	72
1926-27	11	11	10	32	13	30	25	68
1927-28	9	10	12	31	23	26	20	69
1928-29	9	9	15	33	19	23	25	67
1929-30	7	7	14	28	18	28	26	72
1930-31	8	9	13	30	18	26	26	70
10 yr. av.	9	9	14	32	19	26	23	68

Source of Data: United States Department of Agriculture, Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

including size of lamb crop, range conditions and supply of feed in regions where the lambs are fed, but the total movement of fed lambs does not have so direct a bearing on the price as does the fluctuation of the supply from month to month during the time when the fed lambs are moved to market. (Table VII.)

It appears from Table VII that the total movement of lambs from the corn belt states and Colorado and Nebraska does not necessarily influence the average price for the six month period, November to April, that is, an increase or decrease in the total number of lambs marketed during that period does not cause an increase or decrease in the average price for the same period. Perhaps a study of the regional movement of fed lambs to market during the winter and spring months will furnish an explanation of the above.

THE FEEDER LAMB MOVEMENT

Since the number of lambs fed in the two principal lamb feeding regions, the corn belt states and Colorado and Nebraska, appears to be the most important factor influencing the lamb supply on the market during November to April, an attempt was made to determine the relation of the feeder lamb movement into the feed lots during the late summer and early fall to the movement of fat lambs during the following winter and spring months.

Table VII.-- Relation between the total movement (Nov.-April) from corn belt, Colorado and Nebraska and the average price at Chicago.

Year	Movement corn belt, Colorado, and Nebraska	Average price November to April
1921-22	4,812,079	12.79
1922-23	5,381,076	14.60
1923-24	5,272,166	14.41
1924-25	5,403,785	16.25
1925-26	5,647,682	14.75
1926-27	5,520,218	13.81
1927-28	5,817,555	14.76
1928-29	6,049,173	15.57
1929-30	6,842,462	10.65
1930-31	6,575,000	8.13

Source of data: United States Department of Agriculture, Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

The data for the feeder lamb movement were not recorded prior to 1923. These data include the lambs that are moved through the 12 leading markets/3 which do not take in the lambs that are contracted and moved directly from the range to the feed lots. In analyzing the feeder lamb movement, it was found that the feeders in the corn belt states buy most of their thin lambs during August, September, October, and November, and feeders in Colorado buy during the period from August to December, inclusive. The number of thin lambs moved from the 12 leading markets into the two chief lamb feeding regions is less than one-half of the total market movement of lambs from the same regions during the winter and spring months. However, the latter includes the number raised and fed in the same region and the lambs moved directly from the range to feed lots.

A study was made to determine the proportion of the total number of feeder lambs that was shipped into the corn belt states and Colorado and Nebraska and this movement was compared with the out movement of lambs from the corn belt during the following winter and spring.

(Table VIII.) If the available data for the feeder lamb movement are representative of the total number of lambs

3. Chicago, Denver, East St. Louis, Fort Worth, Kansas City, Louisville, Ogden, Omaha, Salt Lake City, Sioux City, South St. Joseph, South St. Paul.

Table VIII.-- Feeder and market lamb movement of the corn belt states.

Year	Total feeder movement into corn belt Colo. & Neb.	Feeder movement into the corn belt	Per cent movement into corn belt is of total	Total market movement corn belt, Colo. & Neb. (Nov. to April.)	Corn belt movement November to April	Per cent corn belt is of total
1923	2,356,499	1,138,388	48	5,272,166	2,718,756	52
1924	2,459,946	1,229,694	50	5,403,785	2,676,486	50
1925	2,014,350	937,944	46	5,647,682	2,957,495	52
1926	2,204,748	1,348,920	61	5,520,218	3,697,509	67
1927	2,253,694	937,964	42	5,817,555	2,955,286	51
1928	2,436,636	1,069,602	44	6,049,173	3,247,885	54
1929	2,675,352	1,149,603	43	6,842,462	3,525,268	52
1930	2,079,650	1,077,198	52	6,575,000	3,756,000	57

Source of data: United States Department of Agriculture, Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

moved into the feed lots, it would be expected that an increase in the number of feeder lambs going into the corn belt states would tend to result in an increase in the market movement of fat lambs during the succeeding months.

The relation of the feeder lamb movement into the corn belt to the market movement during the winter and spring months shows that in the fall of 1926, 1928, and 1930, the corn belt took a greater per cent of the total feeder lambs than they did in the fall of 1925, 1927, and 1929. (Fig. 4.)

As a result of this increase in feeder lamb movement there was a corresponding increase in the market movement of lambs from the corn belt the following seasons. The feeder lamb movement into the corn belt decreased in the falls of 1927 and 1929 in comparison to the preceeding years which resulted in a decrease in the market movement of lambs. (Fig. 4.)

In all probability the feeder lamb movement into the feed lots of the corn belt will directly influence the out movement of fat lambs. However, as pointed out before, the available records of the in movement of feeder lambs include only the lambs that are purchased through the leading markets and in that respect cannot be considered entirely accurate.

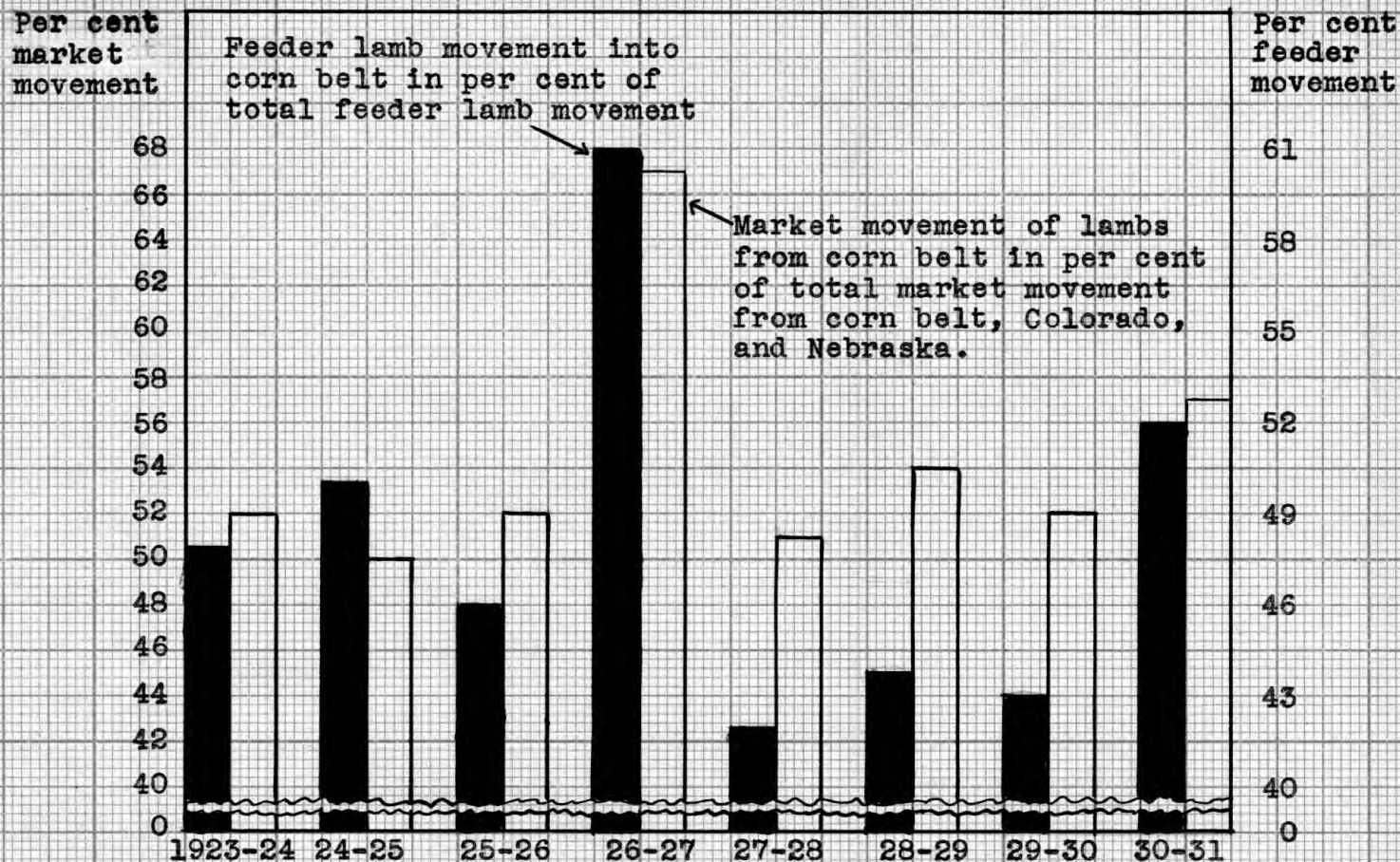


Fig. 4.-- Relation of feeder lamb movement into corn belt to market movement out of corn belt during the winter and spring months.

U.S.D.A. Yearbook of Agriculture, 1931, and Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

INFLUENCE OF THE CORN BELT MOVEMENT ON SUPPLY OF
LAMBS

In the preceding discussion it was pointed out that the corn belt states follow a program of usually marketing the majority of their lambs during the months November, December, and January. With that assumption, a study was made of the supply furnished by the corn belt states or what per cent of the total movement during the period November to April is supplied by lambs fed in the corn belt.

There is considerable fluctuation of the number of lambs marketed by the corn belt from year to year and also the per cent they form of the total movement from the corn belt and Colorado and Nebraska fluctuates in a similar manner. (Table IX.)

In one year, shown in Table IX, the corn belt furnished only 44 per cent of the lambs marketed from the corn belt and Colorado and Nebraska, and in another 67 per cent. It is reasonable to assume that the per cent of lambs moved from the corn belt should have an influence on the supply during November, December, and January, since the practice followed is to market most of the corn belt lambs during those three months.

Table IX.-- Sheep and lamb market movement during the period November to April and the per cent moved from the corn belt.

Year	Total corn belt, Neb. and Colo.	Total from corn belt	Per cent from corn belt
1921-22	4,812,079	2,691,234	56
1922-23	5,381,076	2,366,478	44
1923-24	5,272,166	2,718,756	52
1924-25	5,403,785	2,676,486	50
1925-26	5,647,682	2,957,495	52
1926-27	5,520,218	3,697,509	67
1927-28	5,817,555	2,955,286	51
1928-29	6,049,173	3,247,885	54
1929-30	6,842,462	3,525,268	52
1930-31	6,575,000	3,756,000	57

Source of data: United States Department of Agriculture, Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

INFLUENCE OF CORN BELT SUPPLY OF LAMBS ON PRICE

Since the supply or the number of lambs slaughtered seems to have a direct influence on the price of lambs, as shown previously in this study, and the corn belt feeders market most of their fed lambs during November, December, and January, the next logical step to consider is what influence does the market movement of the corn belt lambs have on the price of lambs during the winter months?

Table IX shows that during the winter and spring of 1922-23, the corn belt furnished only 44 per cent of the fed lambs marketed from the corn belt and Colorado and Nebraska, and in 1926-27, 67 per cent, and during the years 1921-31 furnished on the average from 50 to 56 per cent.

In a year when the supply of fed lambs from the corn belt drops below 50 per cent of the total movement from the corn belt and Colorado and Nebraska, it is expected that the supply of fed lambs during November, December and January will be much lighter than in February, March and April, because of the usual marketing practices of the two lamb feeding regions. Furthermore, in a year when the number of fed lambs marketed from the corn belt constitutes a good deal more than 50 per cent of the lambs moved from the two different lamb feeding regions as in 1926-27, it is expected that the markets during November, December and January will

be over supplied.

In dealing with the influence that the movement of fed lambs from the corn belt has upon the supply and indirectly the price of lambs during the winter and spring months, the prices of lambs used were for the average price in November and December, and the average in March and April. These averages were used instead of the averages of November, December and January and that of February, March, and April, because some of the lambs from Colorado and Nebraska are marketed in January and some of the lambs fed in the corn belt are held for the February market. Because of this, the influence of the supply of fed lambs from the corn belt would not show up in January as it would in November and December.

During a year when the corn belt furnished a large per cent of the supply of fed lambs during the winter and spring months, the market movement should be heavier in the winter months, November, December, and January, than during the spring months, and therefore the spring market should be more favorable than the winter market and vice versa.

(Table X.)

A graphic presentation of the relation of the corn belt movement to the price of fed lambs is shown in Figure 5. The years 1921-22, 1923-24, 1926-27, 1928-29, and 1930-31 when the per cent of lambs marketed from the corn belt states was more than 50 per cent of the total, the average price of

Table X.-- Relation of the proportion of all winter fed lambs that are in the corn belt to the price change from winter to spring.

Year	Nov.-Dec. av. price of lambs Chicago	Mar.-Apr. av. price of lambs Chicago	Per cent Mar.-Apr. av. is of Nov.-Dec.	Corn belt movement (a)
1921-22	10.05	14.75	147	56
1922-23	14.55	14.49	99	44
1923-24	12.85	16.14	126	52
1924-25	15.25	15.56	102	50
1925-26	15.80	13.93	88	52
1926-27	12.91	15.57	121	67
1927-28	13.47	16.53	123	51
1928-29	13.81	16.95	123	54
1929-30	12.92	9.83	76	52
1930-31	7.38	8.68	118	57

(a) Per cent corn belt movement during November-April was of total corn belt, Colorado, and Nebraska market movement during November-April.

Source of data: United States Department of Agriculture Yearbook, 1931, Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

lambs during March and April was above the average price of lambs during November and December. During the winter and spring months of 1922-23, the number of lambs marketed from the corn belt was only 44 per cent of the total movement of lambs from the corn belt states and Colorado and Nebraska. This had a tendency to cause a light supply of lambs during the early winter months and as a result the average price of lambs during November and December of 1923 was more favorable to the lamb feeders than the average price in March and April.

Figure 5 shows, with the exception of two years of the period 1921-31, the proportion of the total movement of fed lambs from the corn belt and Colorado and Nebraska that is marketed by the corn belt feeders has a direct influence on the behavior of the lamb prices during the winter and spring months. That is, the supply of lambs for slaughter during November and December will depend largely on the number of lambs in the corn belt feed lots. If the number of lambs in the corn belt feed lots is large in comparison to the number on feed in Colorado and Nebraska, then in all probability there will be more lambs marketed during November and December and thereby depress the price of lambs in those months, causing March and April to have a lighter supply of lambs and higher prices as in the spring of 1922, 1924, 1927, and 1931.

Location of the lambs in the feed lots seems to have a

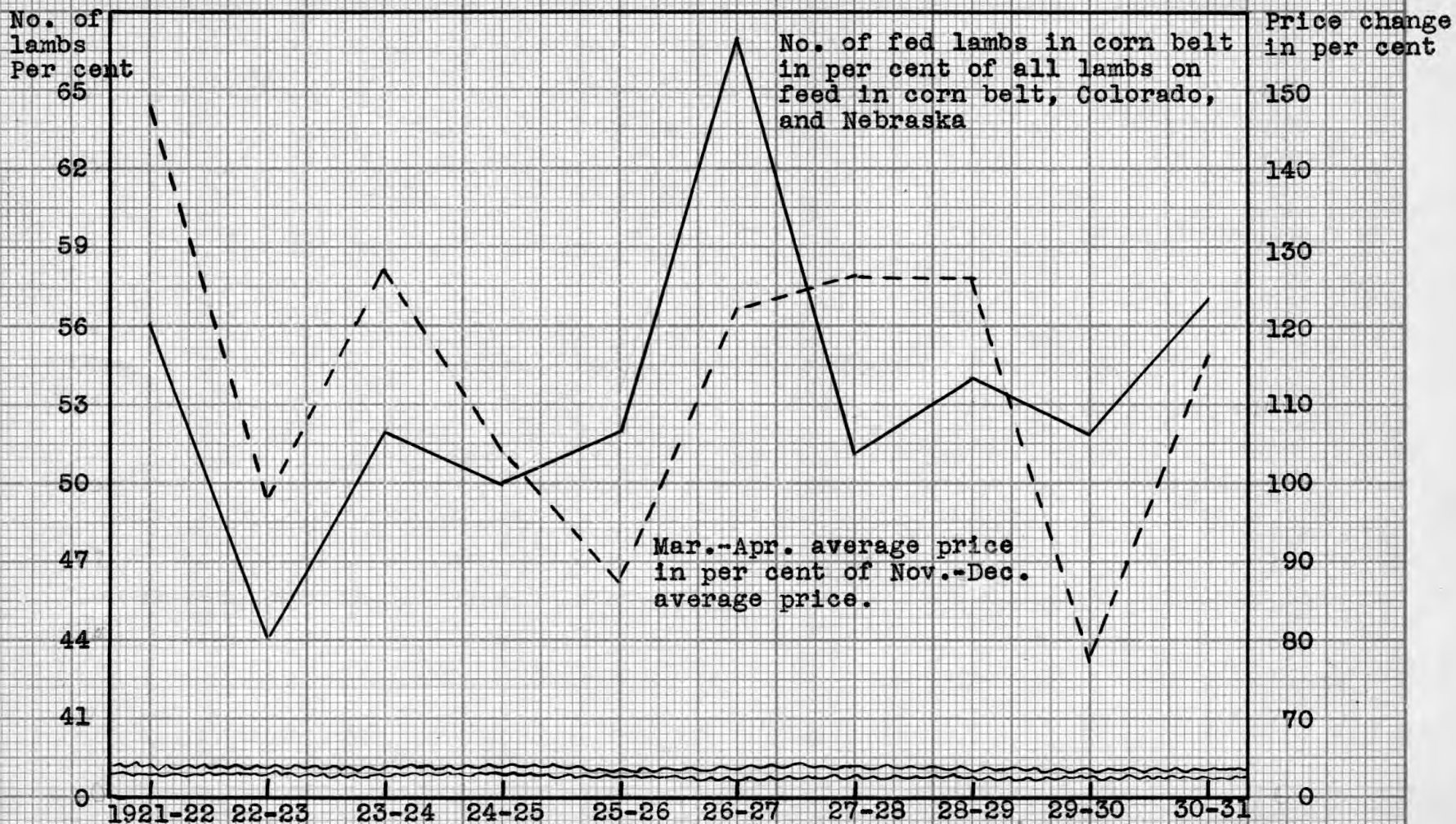


Fig. 5.-- Relation of the proportion of all winter fed lambs that are in the corn belt to the price change from winter to spring.

U. S. D. A., Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

direct influence on the supply of lambs during the winter and spring months and it has been pointed out that lambs prices tend to fluctuate inversely with the supply of lambs for slaughter. It is to be expected then, in years when the corn belt feeders buy a larger proportion of the feeder lambs than do the feeders in Colorado and Nebraska, that the price of lambs will be lower in the early winter months than in the spring months or if the majority of the feeder lambs are bought by the Colorado and Nebraska feeders, the reverse may occur.

INFLUENCE OF THE PRICE OF BEEF STEERS AND HOGS ON THE PRICE OF LAMBS

An attempt was made here to determine what effect the price of beef steers and hogs has had upon the price of lambs. That is, do lamb prices show a tendency to rise or fall as the prices of beef steers and hogs go up or down? The monthly average price during the winter and spring months of lambs, beef steers and hogs at Chicago are shown in Table XI.

A study was made of the usual change in price of these three kinds of live stock from November to April and this average change was compared with the actual change each year during the ten year period 1921-1931. (Figure 6.) The April price of beef steers during that ten year period

Table XI.-- Prices of lambs, hogs, beef steers, at Chicago for the six-month period, November to April.

	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31
Lambs										
November	9.25	14.17	12.75	14.03	15.44	13.25	13.80	13.31	12.72	7.34
December	10.86	14.93	12.96	16.47	16.15	12.57	13.14	14.31	13.22	7.43
January	12.67	14.69	13.53	18.28	15.28	12.64	13.16	16.37	13.28	8.43
February	14.49	14.85	14.95	17.59	13.78	13.28	15.39	16.53	11.03	8.19
March	15.39	14.56	16.06	16.28	13.48	15.27	16.26	17.07	10.28	8.31
April	14.10	14.42	16.22	14.85	14.38	15.87	16.81	16.82	9.38	9.06
6 mo. av.	12.79	14.60	14.41	16.25	14.75	13.81	14.76	15.57	10.65	8.13
Hogs										
November	7.01	8.07	6.85	8.97	11.28	11.80	8.92	8.83	9.06	8.55
December	6.92	8.18	6.87	9.38	10.97	11.57	8.32	8.61	9.34	7.95
January	8.02	8.29	7.10	10.38	12.02	11.96	8.25	9.22	9.78	7.65
February	9.90	8.02	7.06	11.06	12.45	11.73	8.08	10.19	10.67	7.10
March	10.43	8.18	7.35	13.55	12.20	11.28	8.08	11.44	10.17	7.45
April	10.31	8.08	7.36	12.55	12.33	10.69	9.28	11.41	10.00	7.35
6 mo. av.	8.76	8.14	7.10	10.98	11.87	10.51	8.49	9.95	9.83	7.67
Beef steers										
November	7.40	9.16	9.46	8.90	10.16	9.48	13.57	13.84	13.00	10.55
December	7.00	8.76	8.96	8.71	9.72	9.43	13.08	12.86	12.74	10.50
January	7.23	8.88	8.99	8.97	9.48	9.70	13.67	12.51	12.62	9.60
February	7.62	8.62	8.81	9.15	9.42	9.81	13.15	11.92	12.46	8.35
March	7.87	8.70	9.17	9.93	9.42	10.20	12.83	12.68	12.33	8.35
April	7.90	8.81	9.52	9.99	9.11	10.51	13.01	13.52	11.88	7.90
6 mo. av.	7.50	8.82	9.15	9.27	9.55	9.85	13.22	12.89	12.61	9.21

Source of data: United States Department of Agriculture, Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

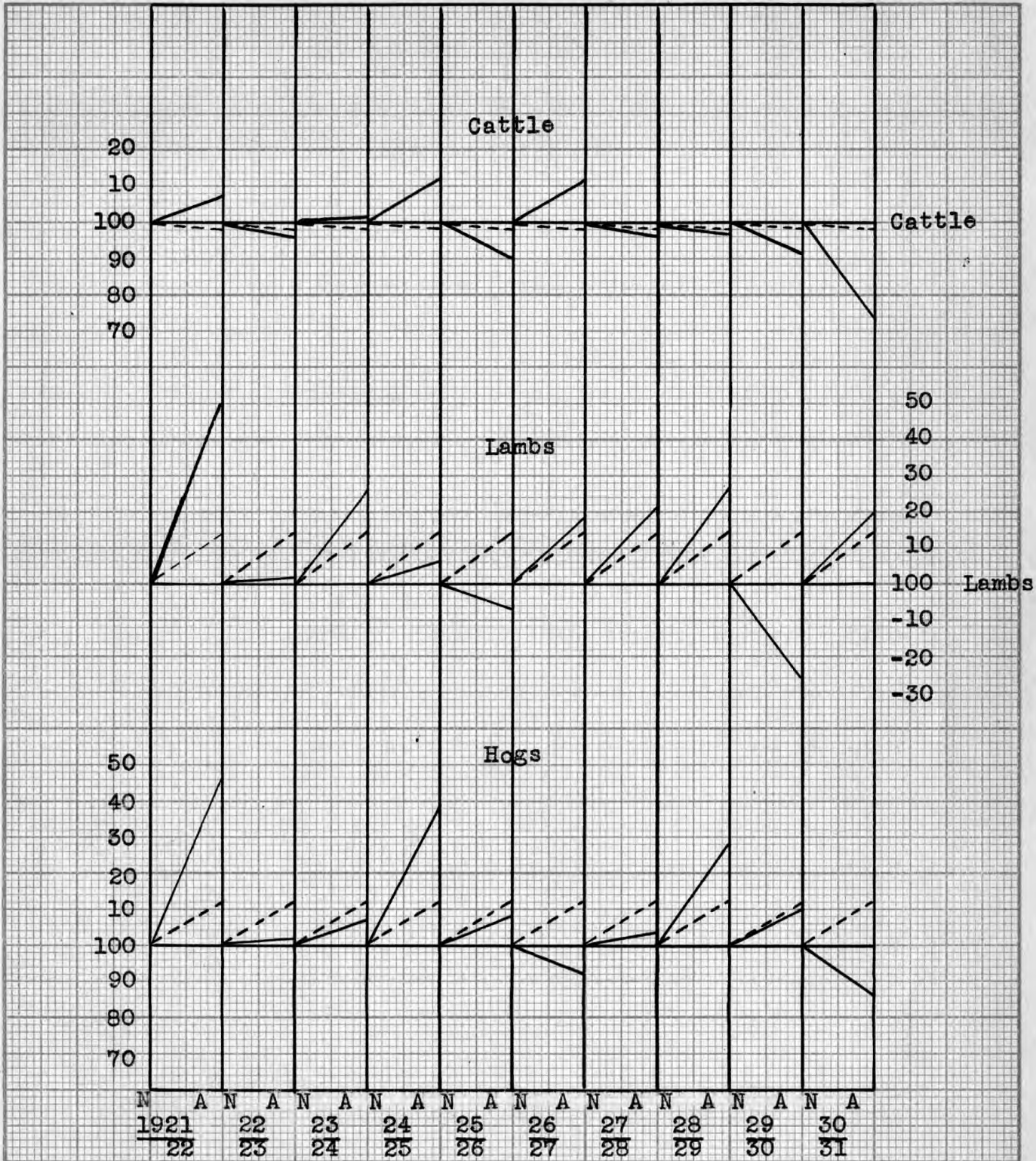


Fig. 6.-- Graphic presentation of the price changes of cattle, sheep, and hogs from November to April shown in per cent.

----- Normal Change ——— Actual change

was two per cent less than the November price. Lamb prices on the average of the same period advanced in April to 14 per cent above the November price, and the price of hogs advanced 12 per cent in April of the November price.

Lamb prices, in some years 1921-22, 1922-23, 1926-27, 1928-29, and 1929-30, tend to change from November to April in a similar manner to one or both of the other kinds of live stock. However, in the other years there was no apparent relation of the change of the price of beef steers and hogs to the price of lambs.

A study was also made of the monthly price changes during the period November, December, January, February, March and April for the ten year period (1921-1931) and a summary is shown in Table XII.

This table shows that in eight of the 50 months the prices of beef steers, hogs and lambs went up and that in nine of the 50 months all three prices went lower in a similar manner. However, there were 11 months in which the price of lambs advanced regardless of the decrease in the price of both beef steers and hogs. It is concluded from a study of the prices and price changes of beef steers, hogs and lambs that there is not a very close connection of the three, but rather the supply and seasonal fluctuations of the demand of each kind of live stock has more influence on the price change than does the price change of the other

Table XII.-- Monthly price changes of lambs, beef steers, and hogs, Chicago price, during November, December, January, February, March, and April (1922-31).

Lambs	Hogs	Beef Steers	No. of times occurring
up	up	up	8
up	up	down	8
up	down	up	4
up	down	down	11
down	up	up	3
down	down	up	2
down	up	down	5
down	down	down	9

Source of data: United States Department of Agriculture, Bureau of Agricultural Economics, Yearbook of Agriculture, 1931, and Division of Crop and Live Stock Estimates.

kinds of live stock.

GENERAL CONCLUSIONS

1. A change in the slaughter of sheep and lambs has a general tendency to cause the price of lambs to change.

2. The supply of lambs available for slaughter during the period November to April will depend upon the geographical location of the lambs in the United States.

3. The corn belt states and Colorado and Nebraska furnish approximately 75 per cent of the lambs slaughtered during November to April.

4. The corn belt states follow a practice of marketing approximately two-thirds of their fed lambs during November, December, and January. Colorado and Nebraska usually market about two-thirds of their fed lambs during February, March, and April.

5. When a greater proportion of the fed lambs is furnished by the corn belt states, the early winter markets will be over-supplied, which will tend to make the prices of fed lambs in the spring months more favorable when compared to fall prices. When Colorado and Nebraska furnish the majority of the fed lambs, the reverse is to be expected.

6. During the eight year period, 1923-1931, when there has been a marked change in the proportion of the total number of feeder lambs, taken by the corn belt states, there

was a corresponding change in the proportion of the total supply of fed lambs furnished by the corn belt states.

7. The price changes of beef steers and hogs during the November to April period do not show a direct influence on the price changes of lambs.

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APPENDIX

Table I.-- Movement of sheep and lambs during winter and spring months.

	1921-1922	1922-1923	1923-1924	1924-1925	1925-1926	1926-1927	1927-1928	1928-1929	1929-1930	1930-1931	
(a)	Nov.	725,747	586,051	598,808	655,838	645,899	786,755	818,150	806,703	786,634	913,000
	Dec.	622,344	498,773	638,350	712,923	653,533	830,742	659,754	727,397	771,145	953,000
	Jan.	534,076	493,697	591,664	496,673	614,415	807,336	659,669	738,598	703,464	850,000
	Feb.	308,450	300,431	395,536	334,376	452,579	607,683	372,012	434,219	507,249	536,000
	Mar.	245,031	222,336	254,540	213,149	327,524	400,317	212,653	268,826	426,694	356,000
	Apr.	255,586	265,190	240,458	263,527	263,545	264,676	233,048	272,142	330,082	248,000
(b)	Nov.	260,775	325,447	221,680	167,211	197,608	206,427	257,265	251,122	223,865	225,000
	Dec.	163,504	252,311	272,857	253,235	254,730	195,490	273,933	247,878	240,518	260,000
	Jan.	371,063	472,736	448,563	385,165	318,921	187,947	345,631	415,354	450,080	356,000
	Feb.	400,618	550,250	463,758	558,252	467,853	229,231	654,739	535,311	603,737	495,000
	Mar.	552,666	723,070	598,454	758,227	815,455	540,165	737,074	658,210	919,977	735,000
	Apr.	372,219	690,784	548,098	632,209	635,620	463,449	593,627	693,463	879,017	748,000
(c)	Nov.	1,411,444	1,523,763	1,304,089	1,354,664	1,381,596	1,513,297	1,617,843	1,748,228	1,744,464	2,253,000
	Dec.	1,034,011	1,010,723	1,145,165	1,250,651	1,317,933	1,416,275	1,296,024	1,360,734	1,483,381	1,901,000
	Jan.	1,237,590	1,200,143	1,333,035	1,197,663	1,260,778	1,433,873	1,393,005	1,573,378	1,583,080	1,833,000
	Feb.	972,107	1,046,544	1,112,214	1,162,500	1,196,705	1,205,180	1,342,101	1,255,529	1,484,479	1,561,000
	Mar.	1,029,747	1,103,660	1,029,911	1,193,956	1,375,240	1,194,343	1,162,445	1,228,651	1,701,735	1,655,000
	Apr.	782,379	1,112,272	1,034,657	1,146,456	1,147,770	1,035,495	1,121,493	1,561,466	1,645,687	2,045,000

(a) Corn belt.

(b) Colorado and Nebraska

(c) United States

Source of data: United States Department of Agriculture, Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates

Table II.-- Average of five year movement by months and regions, 1926-1930.

Region	January	February	March	April	May	June	July	August	September	October	November	December	Yearly average
I	343,587	498,174	734,176	653,025	276,186	78,406	72,238	100,508	355,696	593,472	232,689	243,704	4,187,290
II	42,955	43,719	53,449	116,920	136,953	92,156	45,243	39,554	105,102	270,573	196,459	46,760	1,525,647
III	154,870	130,759	92,041	61,622	51,437	27,137	37,753	167,531	684,145	713,623	164,554	137,959	2,423,927
IV	102,541	83,211	53,640	24,261	61,093	453,620	667,076	902,383	833,990	400,474	219,722	148,441	3,424,799
V	251,896	176,090	113,784	90,444	65,714	39,846	51,940	114,748	254,667	471,202	433,192	306,943	2,371,454
VI	452,800	298,638	213,419	182,248	163,767	218,060	227,752	291,608	299,821	321,744	389,298	481,339	3,560,865
VII	77,444	51,578	45,920	51,488	153,665	338,723	300,902	217,326	120,244	101,412	90,623	89,251	1,628,426
VIII	1,722	1,429	11,022	115,588	484,014	49,483	20,313	19,293	6,902	6,135	4,791	4,271	725,109

I Colorado and Nebraska.

II Texas, Oklahoma, New Mexico and Arizona.

III Utah, Wyoming and Montana.

IV Nevada, Idaho, Oregon, and Washington.

V Michigan, Wisconsin, Minnesota, North Dakota and South Dakota.

VI Indiana, Illinois, Ohio, Iowa, and Kansas.

VII Kentucky, Virginia, Tennessee, West Virginia, Arkansas and Missouri.

VIII California.

Source of data: United States Department of Agriculture, Bureau of Agricultural Economics, Division of Crop and Live Stock Estimates.

Table III.-- Price of lambs (average per hundredweight at Chicago by months, 1907-1931.)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly average
1907	7.30	7.30	7.55	8.05	7.80	7.20	7.05	6.90	6.90	6.80	6.05	5.70	7.05
1908	6.80	6.70	7.20	7.25	6.65	5.75	6.20	6.05	5.35	5.50	5.85	6.70	6.33
1909	7.35	7.50	7.65	7.85	8.25	7.60	7.70	7.35	6.80	6.50	7.10	7.50	7.43
1910	8.30	8.65	9.40	9.10	8.40	7.60	7.10	6.70	6.80	6.65	6.25	6.10	7.59
1911	6.20	6.05	6.10	5.50	5.85	6.10	6.30	6.35	5.70	5.75	5.45	5.75	5.92
1912	6.50	6.15	7.30	7.95	8.30	6.90	7.25	7.10	7.00	6.75	7.15	7.75	7.18
1913	8.55	8.50	8.60	8.40	7.40	6.85	7.55	7.40	7.15	7.05	7.25	7.60	7.69
1914	7.90	7.60	7.65	7.60	8.10	7.95	8.45	8.15	7.80	7.60	8.75	8.30	7.99
1915	8.40	8.75	9.55	9.65	10.10	9.20	8.75	8.90	8.75	8.75	8.80	9.00	9.05
1916	10.30	10.90	11.10	10.45	10.75	9.55	10.55	10.75	10.60	10.15	11.40	12.70	10.77
1917	13.85	14.30	14.25	14.40	16.90	15.25	15.65	15.50	17.50	17.40	16.75	16.45	15.68
1918	17.20	16.60	17.55	19.20	18.00	16.85	18.50	17.50	17.25	15.35	15.10	14.60	16.98
1919	16.25	17.40	19.05	18.15	16.25	14.05	17.10	16.75	14.85	15.00	14.50	16.40	16.31
1920	19.50	19.95	18.80	18.80	17.40	14.25	15.55	13.20	13.30	12.35	11.70	11.20	15.50
1921	10.72	9.07	9.91	9.69	11.07	10.67	10.09	9.46	8.86	8.66	9.25	10.86	9.86
1922	12.67	14.49	15.39	14.10	12.95	12.42	13.04	12.51	13.53	13.94	14.17	14.93	13.86
1923	14.69	14.85	14.56	14.42	14.12	14.81	14.22	12.89	13.52	12.93	12.75	12.96	13.89
1924	13.53	14.95	16.06	16.22	15.23	14.12	13.79	13.57	13.38	13.52	14.03	16.47	14.57
1925	18.28	17.59	16.28	14.85	13.06	15.86	15.11	14.88	15.19	15.20	15.44	16.15	15.66
1926	15.28	13.78	13.48	14.38	15.30	16.66	14.31	14.20	14.05	13.88	13.25	12.57	14.26
1927	12.64	13.28	15.27	15.87	14.75	15.66	14.25	13.68	13.46	13.70	13.80	13.14	14.12
1928	13.16	15.39	16.26	16.81	16.10	16.84	15.61	14.72	14.29	13.12	13.31	14.31	14.99
1929	16.37	16.53	17.07	16.82	13.62	15.35	14.38	13.50	13.19	12.72	12.72	13.22	14.62
1930	13.28	11.03	10.28	9.38	9.73	12.28	10.18	9.39	8.24	7.72	7.34	7.43	9.69
1931	8.43	8.19	8.31	9.06	8.55	7.72	6.62	6.88	6.49	5.88	5.64	5.32	7.26

United States Department of Agriculture Yearbook of Agriculture, 1927 and 1931.

Table IV.-- Monthly slaughter of sheep and lambs under federal inspection. (a)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1907	1,017	837	842	861	769	735	865	900	892	973	793	769	10,252
1908	872	725	677	664	732	842	891	932	1,064	1,048	928	930	10,305
1909	906	806	903	839	712	843	964	1,019	1,153	1,169	1,029	1,000	11,343
1910	903	771	727	693	796	927	967	1,095	1,154	1,206	1,125	1,044	11,408
1911	1,130	1,019	1,059	974	1,085	1,146	1,150	1,268	1,257	1,428	1,304	1,200	14,020
1912	1,383	1,151	1,106	971	963	1,028	1,181	1,390	1,440	1,723	1,424	1,220	14,979
1913	1,192	961	883	1,049	1,127	1,135	1,273	1,243	1,486	1,514	1,258	1,284	14,406
1914	1,297	1,113	1,143	1,150	1,085	1,113	1,171	1,169	1,379	1,131	1,112	1,167	14,229
1915	1,196	946	986	830	739	883	984	1,139	1,220	1,116	1,132	1,041	12,212
1916	976	904	861	769	854	990	930	1,173	1,158	1,172	1,121	1,033	11,941
1917	956	819	861	777	632	710	688	766	740	822	764	809	9,345
1918	780	655	736	614	659	737	869	937	1,029	1,194	1,139	971	10,320
1919	1,004	754	738	808	894	931	1,160	1,234	1,292	1,414	1,227	1,235	12,691
1920	955	828	788	714	671	818	1,048	1,042	1,151	1,068	968	932	10,982
1921	1,068	958	1,075	1,041	985	1,116	1,060	1,237	1,249	1,285	1,040	890	13,005
1922	954	776	837	739	872	1,028	964	1,024	1,013	981	882	858	10,929
1923	1,021	836	977	960	972	914	962	957	990	1,046	915	978	11,529
1924	1,083	912	868	860	959	975	1,051	1,063	1,150	1,148	950	972	11,991
1925	990	854	984	1,012	1,030	999	1,071	1,031	1,086	1,083	879	981	12,001
1926	1,039	988	1,163	994	959	1,081	1,042	1,093	1,224	1,167	1,039	1,172	12,961
1927	1,115	1,006	1,027	960	992	1,058	1,014	1,168	1,185	1,194	1,071	1,094	12,883
1928	1,151	1,048	1,016	918	1,016	1,109	1,076	1,196	1,307	1,409	1,189	1,053	13,488
1929	1,150	953	1,006	1,119	1,202	1,108	1,255	1,298	1,317	1,365	1,159	1,091	14,023
1930	1,225	1,187	1,358	1,387	1,370	1,295	1,411	1,413	1,591	1,727	1,306	1,427	16,696
1931	1,425	1,223	1,323	1,433	1,444	1,516	1,490	1,597	1,666	1,804	1,505	1,581	18,071

a. 000 omitted.

Data from United States Department of Agriculture Yearbook, 1931, and Crops and Markets Reports.