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College of Agriculture

Livestock Prices

at the

Idaho Falls Auction Market

by

Glen R. Purnell and R. Wayne Robinson

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Summary and Conclusions

Seasonal livestock production leads to seasonal patterns of marketing and livestock prices. Knowledge of these seasonal price patterns should enable Idaho ranchers, feeders, and others engaged in the livestock business to adjust their buying and selling to take advantage of seasonally high prices and to increase their income.

Seasonal price patterns (indexes) can be used to estimate prices in the future. This is done by multiplying the present monthly price by the price index of the present month divided by the price index of the future month.

Briefly, a seasonal price index presents the price of a given month as a percentage of the average price for the year. Hence, if the seasonal price index for good fed steers is 104 for August, it can be assumed that the August price is 4 per cent above the average price of good fed steers for the entire year.

In this report we have presented a series of seasonal price indexes for the various species, classes, and grades of livestock at the Idaho Falls Auction based on the period 1951 to 1959. Members of the livestock industry may benefit from using these indexes as a guide to marketing and to increasing their dollar income.

We wish to emphasize price information used here represents the average seasonal pattern of prices which existed during the 1951-59 period. Actual prices may vary somewhat from these patterns during any one year. Nevertheless, Idaho livestock men should find the indexes useful as a general guide to production and marketing practices aimed at increasing their cash income. Livestock men can increase their net income by adjusting the time of marketing provided that their price gains more than offset their cost of making these adjustments.

Idaho livestock men can also take advantage of seasonal price patterns for certain production items such as hay, grain, and protein supplements. The alert stockman takes advantage of these price patterns to buy his supplies during the low price periods, thus reducing his production costs and increasing his margin of profit. For example, costs of most feed items are usually lowest during and immediately following harvest.

Idaho livestock men who take advantage of seasonal price trends in both livestock and production items should be in a better profit position than those who make no attempt to adjust their production and marketing in line with these trends. But successful use of livestock seasonal price patterns requires more than just a knowledge of these trends. Consideration must be given to where we are in the cattle cycle and other market information to determine if prices are following the usual seasonal pattern and what adjustments may be needed to meet the current situation.

Livestock Prices

at the

Idaho Falls Auction Market

An Analysis of Seasonal Price Trends

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Glen R. Purnell and R. Wayne Robinson¹

Introduction

Would you like to make more money from your livestock? You may be able to do so through better planning of your production and marketing. Many livestock men have been able to increase their income by planning their production and marketing so that their livestock reach market when prices are at or near the high for the season. They have also increased their income by buying feed and other supplies during the harvest season when prices are low. If you are not following these practices, the chances are that you can increase your income by doing a better job of planning your purchases and sales.

Idaho ranchers, farmers, feeders, and buyers are interested in the fluctuation of livestock prices and the effect these price variations have upon income from livestock. Prices change from year to year, month to month, and from day to day. The alert livestock man tries to increase his income from livestock by studying these various price movements. He bases his decisions upon past patterns of price variation and upon his estimates of prices in the future.

The Department of Agricultural Economics and the Agricultural Extension Service of the University of Idaho undertook a study to provide more complete information to Idaho livestock men for making these decisions. The Idaho Falls Livestock Auction was selected as the study market because of its size, years of existence in the market, and availability of records. The Idaho Falls Auction was established in 1936, and has operated almost continuously since that time. This auction has handled about 21 per cent of all livestock auction business in Idaho since 1950.

¹ Former Assistant Agricultural Economist and Extension Economist—Marketing Information, University of Idaho, respectively.

Types of Price Movements

Three major types of price movements prevail in the livestock industry. These are secular price movements, cyclical price movements, and seasonal price movements. Idaho livestock men, particularly cattlemen, are somewhat familiar with cyclical and seasonal price movements. However, they may not be as familiar with secular price changes.

The secular movement is that which shows the changes in prices over several years' time. Secular price movements are often obscured by other price movements. For example, the July average price of choice fed steers in Idaho Falls dropped from \$28.50 per hundredweight in 1950 to \$26.00 in 1960. For these reasons, secular price movements are not of great concern to Idaho livestock men in deciding when to buy or sell, but may become important in deciding whether or not to enter or leave the livestock business.

Cyclical price movements become important to Idaho livestock men in deciding when to expand or contract their herds, when to sell cull cattle, and in deciding what classes or types of cattle, hogs, and sheep offer the best prospects for profitable feeding operations. Livestock producers need time to significantly change the size of the breeding herd in response to price changes.

For example, about 24 months are required from the time a heifer calf is born until she drops her first calf. An additional six months are required for her calf to be ready for the feeder market. In the meantime, prices may have increased further until the increase in cattle numbers begins to be reflected in larger marketings, larger slaughter, and lower prices. In fact, slaughter usually continues to increase after prices have started to decline because of the time required to finish animals for market. By this time prices may have fallen to the point where ranchers again need time to reduce the size of their breeding herds in response to the lower prices. Thus, cycles in livestock numbers are accompanied by inverse cycles in livestock prices.

The third type of price change is the seasonal price pattern that occurs during the year. Heavy marketings during certain months of the year result in relatively low prices. This third type of price movement (seasonal prices) is discussed in this report.²

Seasonal Production and Marketing

Climatic and other natural factors result in seasonally-bunched births and tend to generate seasonally-bunched marketings. For example, the end of the grazing season tends to crowd marketings of stocker-feeder cattle and sheep into a single period. The heavy marketings of hogs in

² Some work was done previously and is published as "Monthly Price Changes of Selected Beef Cattle Classes in the Idaho Falls Auction Market 1948-57," Idaho Agricultural Experiment Station Progress Report No. 10, by Ray Barlow in November, 1957.

the late fall and early winter reflect large spring farrowings. The smaller fall farrowing is reflected by a minor marketing peak in early spring.

Heavy marketings of slaughter livestock follow the patterns of feeder livestock, lagging behind by the amount of time required for feeding out to finished weights. See Table No. 1 for the seasonal pattern of marketings of the major species of livestock at Idaho Falls. These figures are presented graphically in Chart 1.

TABLE 1—Seasonal Marketing Indexes* for Livestock at the Idaho Falls Livestock Auction 1951-1959 Inclusive.

Species of Livestock	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Cattle	108	77	78	87	69	65	66	85	119	150	165	132
Sheep	34	21	37	48	40	90	112	183	178	216	162	78
Hogs	142	116	100	87	93	78	76	64	76	111	129	129

^{*}The average monthly marketings for the period 1951-1959 is expressed as an index of 100. Index numbers above 100 indicate monthly marketing above the average monthly marketing and vice versa.

Seasonal Price Patterns

Idaho stockmen are aware that heavy marketings result in lower prices, and light marketings are usually accompanied by relatively high prices of livestock. Seasonal livestock price patterns, then, are generally the inverse of marketing patterns discussed in the last section.³ If a livestock producer or feeder can place his animals on the market during the period of seasonally high prices (and light marketings) he can usually boost his cash income.

In this report we attempt to outline the regularity of these seasonal price changes so that livestock people may adjust their production and marketing program to take advantage of seasonally high prices and light marketings. We have computed indexes of marketings and prices for the different livestock species and classes.⁴ These indexes of seasonality are a good starting point for anticipating the short-run future for prices of meat animals.

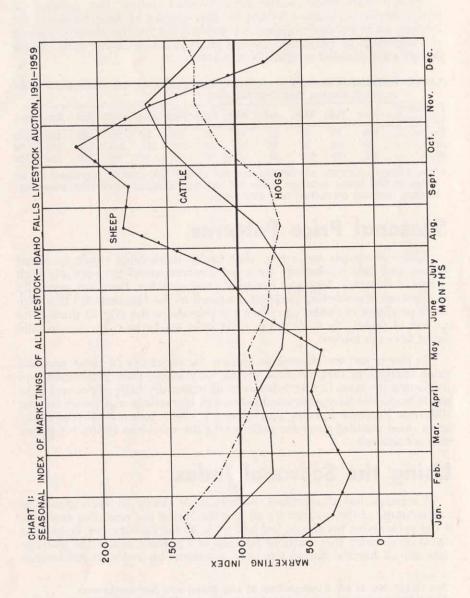
Using the Seasonal Index

A seasonal index⁵ expresses marketings or prices for each month as a percentage of the average for all months during the year. For example, if the price index for choice fed heifers is 95 for January, we know that the average price that exists in January is 5 percent below the average (100) for all months during the year. Similarly, an index of marketings

³ See Graph No. 16 for a comparison of hog prices and hog marketings.

These indexes reflect true seasonal patterns since they are adjusted for secular (long run) changes in price.

Procedure follows that described in Foote, R. J., and Fox, Karl A., "Seasonal Variation: Methods of Measurement and Tests for Significance," U.S.D.A. Handbook, 48, September 1952.



of sheep of 216 in October indicates that sheep marketings for the month exceeds average marketings for the year by 116 per cent. In the set of graphs at the end of this report, the scale on the left indicates the index (percentage) of prices which have prevailed on the average since 1951 for each of the months listed on the horizontal axis at the bottom.

Any month during which the index line rises above the heavy horizontal line (representing the average price for the year) would be a good target as a marketing date for the individual producer to shoot at. The optimum or best selling month is indicated by the highest point of the curve or index line.⁶ For example, on Chart No. 2 for choice fed steers, target dates would fall between May 1 and September 30, representing the period in which the index line rises above 100. The best selling period in this case would be during July and August.

The seasonal price index can also be used as a means of estimating prices in some future month. This assumes that the price in the future month will follow the usual seasonal pattern.

To estimate future prices multiply the current monthly price by the price index of the future month divided by the price index of the present month.

Present Average Price x Future Monthly Index for this Month Present Monthly Index

= Estimated Future Monthly Average Price

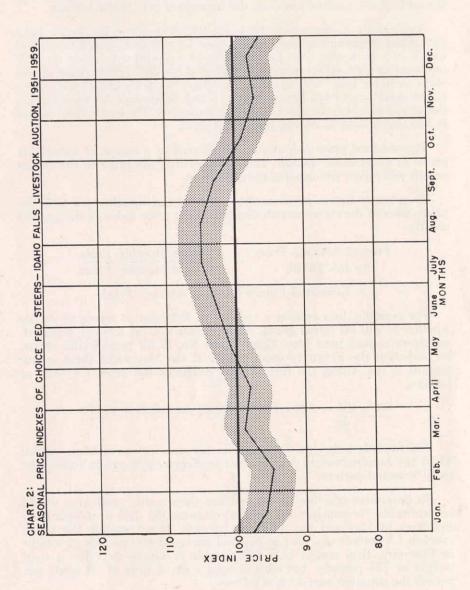
For example, let's assume a rancher in February is trying to decide whether to sell his (good grade) feeder steers now at \$20 per hundred-weight or to wait until May. Using Chart No. 12 for good feeder steers, he finds that the February index is 98 and the May index (best selling month) is 104. Using the formula, he estimates the price for May as follows:

$$\frac{$20 \times 104}{98}$$
 = \$20 x 1.06 = \$21.20 per hundredweight

The formula indicates that good feeder steer prices in May will be \$1.20 per hundredweight higher than in February if prices follow the usual seasonal pattern.

To determine whether or not holding these cattle until May would be profitable, the rancher will need to estimate the gain in weight from February to May and the total cost of gain. If we assume the steers average 1.5 pounds of gain per day and averaged 600 pounds in weight in February, they would gain 135 pounds in ninety days for a total weight of 735 pounds. Assuming a total cost of gain of 20 cents per pound, the situation would be as follows:

[&]quot;Best" is here defined as the maximum price available during a calendar year.



Sale value per head—May—\$21.20 per cwt. x 7.35 cwt. = \$155.82 Sale value per head—Feb.—\$20.00 per cwt. x 6.00 cwt. - \$120.00

Total gross gain in value from higher price and gain in weight Cost of gain (20 cents per pound x 135 pounds)	\$ 35.82 27.00
NET GAIN per head	\$ 8.62

This example shows that in this **specific** case, it would pay the rancher to hold until May for sale. In fact, holding for later sale would still be profitable even though the cost per pound of gain was higher, because the break-even cost of gain under these conditions is between 26 and 27 cents per pound. For ranchers with lower costs of gain, holding for later sale may be profitable (from the standpoint of weight gains) at prices below the \$20.00 per cwt. available in February, depending on their individual costs of gain. In estimating whether holding for later sale is profitable, a rancher or feeder must not only consider the amount of weight gain at the new price, but also the loss or gain on the original weight because of the change in price.

Idaho livestock men are interested in net income. The seasonal index figures used in conjunction with present prices can be used to arrive at dollar values in the future. These dollar values can provide information which help livestock men decide when to buy and sell.

How can an Idaho rancher take advantage of seasonal price trends in selling his livestock? Normally, the range operator will sell his calf crop in October or November as they come off grass. But the seasonal index shows that prices of stock steer calves are near their low at this time. Actual prices of stock steer calves at Idaho Falls ranged from \$22 to \$27 per cwt. from mid-October to mid-November, 1960, and averaged about \$25 per cwt.

The seasonal index for stock steer calves reaches a high in March. Prices of stock steer calves at Idaho Falls in mid-March, 1961, ranged from \$26 to \$30 per cwt., and averaged around \$28. The Idaho rancher who held his calves until March instead of selling in October or November 1960 could have realized a price advantage of approximately \$3 per cwt.

However, this does not imply that waiting until March to sell would have been profitable for him. To determine whether or not it would be profitable to hold for later sale, the rancher would have to consider the gain in weight from October through March and the cost of gain as compared to selling a lighter animal at a lower price in late October.

He may find, depending on his feed situation, that the cost of gain from October through March may more than offset the price increase. On the other hand, utilizing feed or roughage that may not be used otherwise, the rancher may find it to his advantage to winter his calves economically and achieve both a gain in weight and a price advantage. To help make this decision, the rancher may use the formula described previously to estimate what prices may be in the spring at the time of sale, assuming that prices are following the usual seasonal pattern.

The same rancher may use seasonal price patterns to determine if it is more profitable to sell in the spring or to go to grass and feed to a finished weight in the late summer. Assuming that the steer calf would reach choice grade in August, the seasonal index applied to spring (mid-March) 1961 prices indicates that choice fed steers at Idaho Falls in August, 1961, would sell for around \$24.40 per cwt.

To determine if this action would be profitable, the rancher would have to compare the cost and net returns of carrying the animal to a heavier weight for sale in August with the net return from selling at a lighter weight and higher price in March. In addition to this information, he must consider where we are in the cattle cycle and whether or not prices appear to be following the seasonal pattern.

In some years this may be a profitable undertaking. In other years a more profitable practice may be to sell in the spring and rent or sell pasture and other available food.

Limitation of the Seasonal Index

When using these charts, Idaho stockmen should remember that the information represents the average seasonal pattern of prices that existed during the period 1951 to 1959. Some variations in these patterns may exist from year to year—but the index should be useful as a general guide to production and marketing practices aimed at increasing dollar income. Stockmen should also realize that it often costs extra dollars to breed and feed livestock to market in the off-season.

Unless the extra cash obtained from seasonably high prices will at least cover your extra costs, you will find it unprofitable to adjust your production and marketing program to hit the peak seasonal prices. If the peak seasonal prices cover or exceed the extra costs involved, adapting your operation to "meet the market" will pay.

Of course, this is where the Idaho livestock men need to use care in estimating the price patterns he can expect for the coming year. He needs to answer the question, "Will the price pattern for next year follow or approximate seasonal price patterns of past years as represented by these charts, or will next year be different?" Use of official production and price outlook information reports can be helpful in arriving at a satisfactory answer to this question.

Of interest to most Idaho livestock producers is the seasonal behavior of individual grades and classes. A seller wants to know what to expect for a price on his own particular kind of cattle, sheep, or hogs. For these reasons we developed the following tables and charts to give price index information by species, by classes, and by grades. These represent the groups of animals sold through Idaho Falls Livestock Auction. Table 2 provides the exact price index figures for each livestock group, and Charts 2 through 18 give a graphic presentation of these indexes. Average dollar prices by months for the period 1951-54 are given for reference in Table No. 3.

The variation that may exist between price indexes for a given month,

say July of any one year and July of another year can be taken partly into consideration by observing the shaded area on the graph. The shaded area falling on each side of the heavy index graph line outlines a band within which 65 percent of the time the price index will fall for a particular month in any given year.

For example, if we use Chart 2 for the index on choice fed steers in July, we find the heavy center line represents the 1950-59 average seasonal price index for July as 105. However, this price index for July in any one given year may fall above or below this average point. The shaded band (on a vertical distance basis) says that 65 per cent of the time the seasonal price index for July will fall between 102 and 108. For the other 35 per cent of the time the price index will fall either above or below the band, probably about half the time above and half the time below the band. The heavy lines, of course, are the average.

TABLE 2-Seasonal Price Indexes* for Various Groups of Livestock at Idaho Falls Livestock Auction, 1951 to 1959 Inclusive.

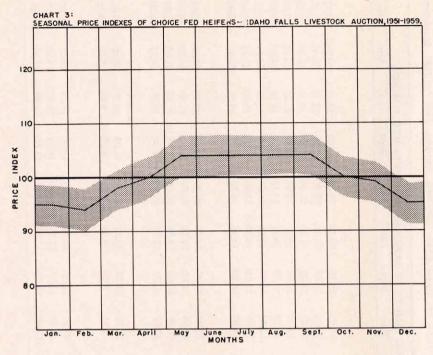
SPECIFIC CLASSES					Z	INDEXES BY MONTH	TNOM Y	Н				1
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
CATTLE: Price Indexes:												
				00	101	103	105	105	103	66	16	86
	96	95	66	88	101	207	104	104	104	100	66	95
S.	95	94	86	100	100	103	103	104	103	86	26	26
	86	96	101	66	102	106	105	101	101	96	95	95
	96	103	101	105	100	102	66	98	96	94	93	86
WS	10.	101	107	103	108	103	100	86	76	95	92	96
Outton Come	086	102	107	106	112	106	101	101	16	93	89	90
	00	66	86	66	86	66	66	16	100	103	103	105
	101	101	106	103	105	102	16	95	96	16	76	16
Stool Hoffer Calves	100	101	105	103	106	102	86	96	100	96	96	96
	00	86	102	102	104	103	66	100	101	86	16	97
Medium Feeder Steers	66	100	104	105	106	104	100	66	66	95	94	94
SHEEP:									ı	00	ů	co
Choice Fat Lambs	95	95	86	101	111	112	106	101	97	96	66	38
Fat Ewes	120	125	129	113	87	85	16	80	io.	06	102	110
HOGS:											0	00
Butcher Hogs	94	95	86	102	106	109	110	109	103	66	80 8	06
Light Butcher Sows	91	95	96	103	104	108	110	109	105	66	91	68
	91	96	16	104	105	107	107	107	106	100	92	88

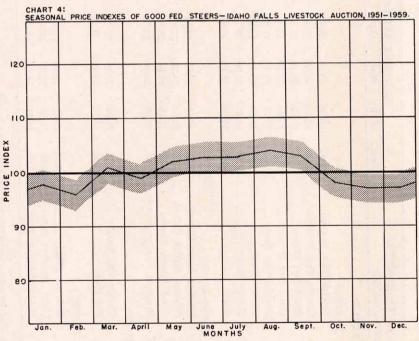
*The average monthly price for the period 1951-1959 is expressed as an index number of 100. Index numbers above 100 indicate monthly prices above the average monthly price and vice versa.

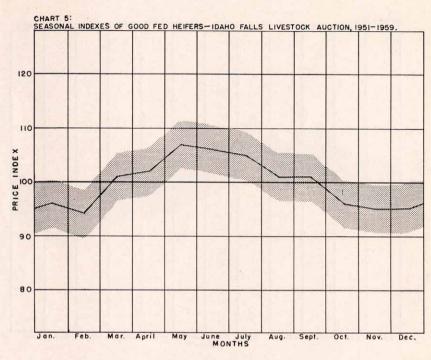
TABLE 3-Average prices, by Months of Various Groups of Livestock at Idaho Falls Livestock Auction, 1951 to 1959 Inclusive.

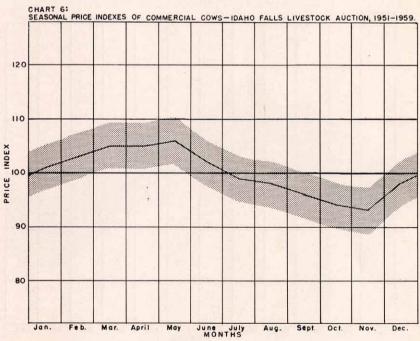
SPECIES, CLASSES		M	CULTER	MONINEL AVERAGE FRICES IN DOLLARS	OF LALL	ES EN D	CLEAR	LEW D	ren nombred founds	LOOK	20	
AND GRADES	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
CATTLE:												
Slaughter												
Choice Fed Steers	23.90	23.50	24.25	24.30	24.65	24.60	25.00	25.20	24.95	24.15	23.35	23.15
Choice Fed Heifers	22.20	22.15	22.80	23.20	23.65	23.65	23.85	23.60	23.30	23.70	22.05	21.45
Good Fed Steers	19.55	19.05	20.10	21.10	20.35	21.50	21.30	21.45	21.20	20.20	19.70	19.65
Good Fed Heifers	17.90	17.60	18.60	18.95	19.90	20.30	20.31	19.65	19.55	18.55	18.15	17.85
Commercial Cows	16.65	17.10	17.40	17.30	17.30	16.70	16.35	16.15	15.80	15.30	14.90	15.65
Utility Cows	14.65	15.00	15.40	14.85	15.30	14.80	14.50	14.25	14.00	13.60	13.15	13.65
Cutter Cows	12.95	13.40	14.00	13.70	14.20	13.55	13.20	12.95	12.55	11.90	11.25	11.45
Bulls	17.80	18.25	18.95	18.65	18.80	18.70	18.45	18.30	17.70	16.65	16.05	15.95
Feeder-Stocker												
Stocker Steer Calves	25.05	26.15	26.65	26.05	25.90	25.20	24.15	23.60	24.00	23.80	23.65	23.45
Stocker Heifer Calves	22.80	22.50	24.05	23.65	23.35	22.95	22.15	21.70	22.35	21.40	21.10	20.90
Good Feeder Steers	22.20	22.15	22.85	22.75	22.85	22.60	22.05	22.05	22.15	21.30	21.05	21.00
Medium Feeder Steers	19.65	19.85	20.60	20.75	20.60	20.35	19.70	19.40	19.45	18.55	18.15	18.20
SHEEP:												
Choice Fat Lambs	21.75	21.90	22.55	22.90	24.45	24.70	23.30	22.20	21.20	20.70	20.40	19.65
Fat Ewes	9.80	10.10	10.40	9.25	7.50	6.70	6.30	6.45	6.95	7.10	7.70	8.21
HOGS:												
Butcher Hogs	18.55	19.20	19.35	19.70	20.30	21.00	20.95	20.85	19.50	17.85	16.65	16.90
Light Butcher Sows	14.85	15.70	15.70	16.40	16.50	17.10	17.20	19.55	16.25	15.25	14.00	13.70
Heavy Rutcher Sows	12 65	14.95	14.95	15.00	15.00	16 95	15.00	15 15	14 60	12 05	19.70	19 90

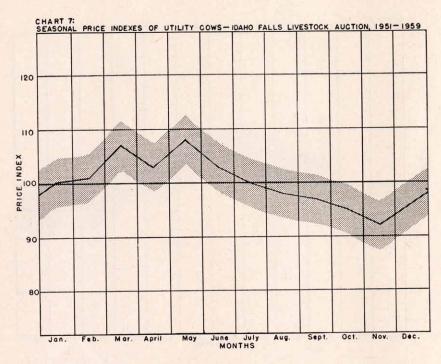
- Actual Prices—no adjustment for secular trend.

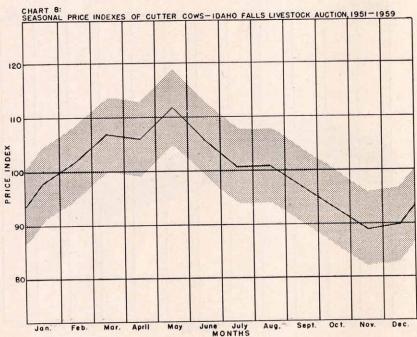


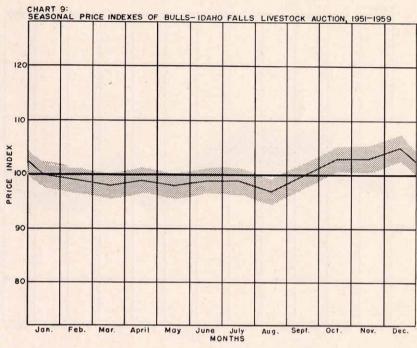


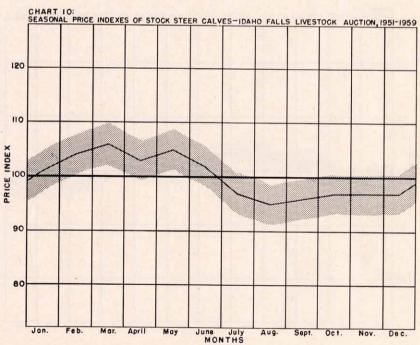


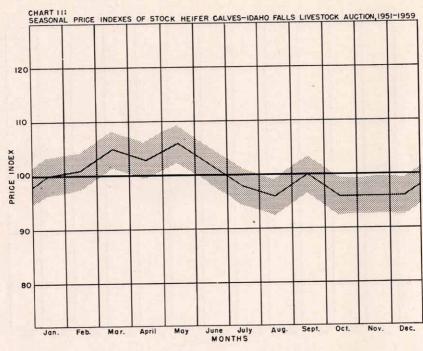


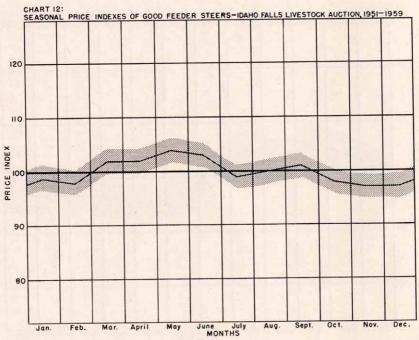














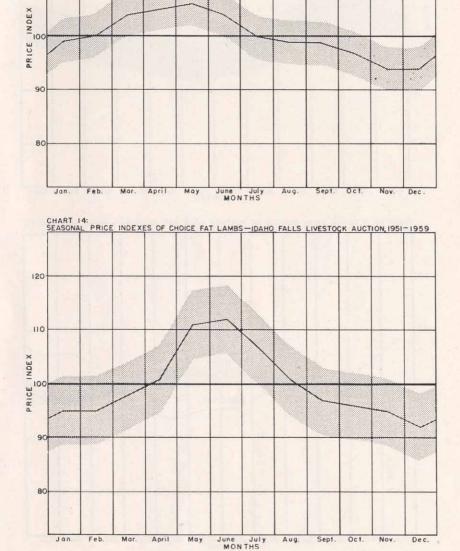
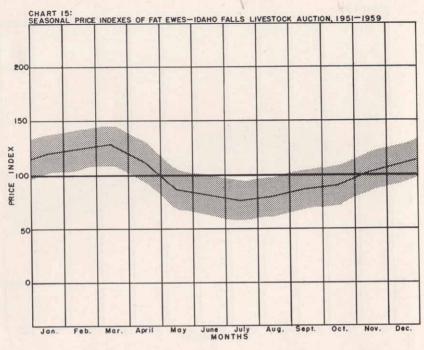
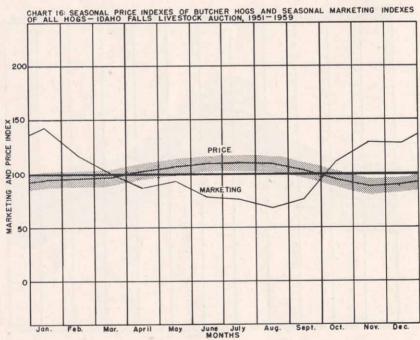
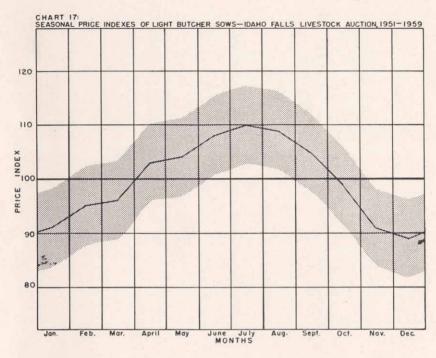
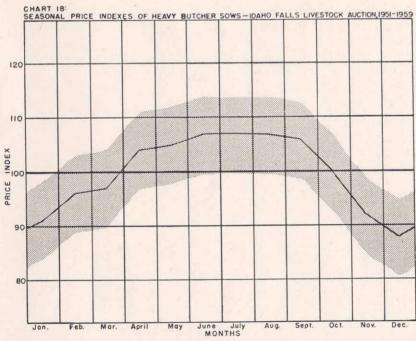


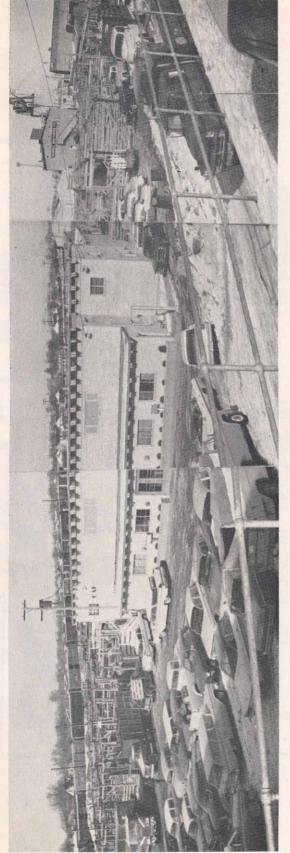
CHART 13: SEASONAL PRICE INDEXES OF MEDIUM FEEDER STEERS-IDAHO FALLS LIVESTOCK AUCTION, 1951-1959











THE IDAHO FALLS LIVESTOCK AUCTION CO.

market is strategically located on a well-traveled north-south highway near the eastern boundary of the state. This Montana. The market regularly holds three sales per week. Sheep are sold on Mondays, hogs on Tuesdays and cattle enables the market to draw livestock not only from eastern Idaho, but also from adjacent areas in Wyoming and on Wednesdays. During the year, special sales are occasionally held in season for feeders and other classes of livestock on other days of the week. Estimations are that this auction has handled about 21 per cent of the livestock The Idaho Falls Auction was established in 1936 and has essentially operated continuously since that time. auction business in the state since 1950.

The authors wish to thank the Idaho Falls Livestock Auction Co. for the excellent cooperation of the auction personnel and O. D. Blain in particular for furnishing price and market information for the period covered by this study.

