Seasonal Price Patterns of Selected Agricultural Commodities

Special Report No. 59

by Allan P. Rahn

Contents

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of Selected Agricultural Commodities[1]

by Allan P. Rahn[*]

Production and market planning has become increasingly crucial to successful farm management as per-unit profit margins have declined. Consequently, the indicators of the prices a farmer can expect to receive have grown in importance, too.

The price a farmer receives for a commodity is greatly influenced by the total volume of that commodity being marketed. For many agricultural commodities, there is an inherent pattern of production and marketing.

An example is corn, which because of climate must be planted in the spring and harvested in the fall. Other agricultural products may have production and marketing patterns caused by production practices. For example, in supplemental hog enterprises sows are usually bred to farrow when adequate labor is available to tend them and when suitable weather is expected. This has produced larger hog slaughter volumes in late fall and early winter than during other times of the year.

Because of either climate or custom, farm prices vary periodically. Naturally, price movements for some commodities are more pronounced than others. Often these price movements are similar from year to year, especially when longer run trend and cyclical price effects (such as changes in the price level, changes in production inventories and more efficient production methods) have been removed.

This publication provides information about the seasonal price movements of agricultural commodities and can be used as a broad guideline in making management decisions. In decisions about such variables as breeding dates and/or feeding programs, a knowledge of seasonal price movements helps appraise target marketing periods.

A seasonal price index may also indicate a typical price movement pattern which can be used as a standard for comparisons. One use of seasonal price indexes is to estimate the profitability of crop storage. If the anticipated price increase is greater than the normal seasonal price increase, you may want to procure additional storage capacity.

Price indexes in this publication show the average seasonal price variation of commodities over a period of years. The indexes are expressed as a percentage of the moving average price[2] and have been adjusted to a base of 100. Calculation in this manner eliminates most of the price variation generated by other-than-seasonal factors. The moving price average incorporates price effects of inflation, cyclical changes in production, changing technologies, and other causes which affect prices gradually. This enables the price index to reflect primarily seasonal price variation.

The indexes are representative of historical price movements based on observation periods ranging from 7 to 12 years. We should not expect them to indicate the actual price for any given month. But the indexes do show the general price pattern and indicate when prices are likely to be highest and lowest during the year. Thus, the seasonal indexes provide general guidelines on probable seasonal price changes. They can also be used to estimate specific price levels during the year if reliable annual price forecasts are available.

Seasonal indexes are presented by graphs throughout the text. The graphs for each commodity show the typical price pattern and its reliability. Monthly indexes are connected by straight lines in the upper portion of the graphs, while related variability indexes are plotted as vertical bars in the lower portion. Numerical monthly indexes and monthly variabilities also appear in the graphs.

The variability index for each month represents an index range of four standard errors (two standard errors above the average of the price index level for a particular month and two below). Consequently, the larger the variability index, the less reliable is the monthly price index. In other words, the price index level is more likely to differ from average for that month.

Using the Price Indexes. Here's how to use a price index to obtain an indication of the price level: Suppose you are interested in estimating the price per hundred pounds of all the beef cattle marketed in Iowa in the month of February. From outlook information which you believe to be correct, you see that the average price of all beef cattle in Iowa for a particular year is expected to be $23.50 per hundredweight. As the seasonal price index for all Iowa beef cattle in February is 97.80 (obtained from the 1960-67 based price index presented later in this publication), the estimated February price would be

[1] This publication resulted from a time series analysis computer program published in March 1967 by Russell F. McDonald and Filmore E. Bender (Ag. Econ. Mimeo Series No. 16; University of Maryland). The adapted and modified program used to develop the material in this publication may be obtained from the author.

[*] Extension economist.

[2] Thirteen-months moving average price.

$23.50 multiplied by 97.80 percent or $22.98 per hundred pounds.

You can then determine the reliability of this estimated price by using the variability index. The index of variability of beef cattle in Iowa for February has a range of 6.34 percent. This means that 95 percent of the time the price index level in February can be expected to be between 94.66 percent (97.83 minus 3.17) and 101 percent (97.83 plus 3.17) of the projected annual average price. Converting this into a per-hundred-pound price range for the year under consideration, you could estimate the February price to be between $22.25 and $23.74 with only a 5 percent chance of being wrong (assuming your annual average price estimate was correct).

The price series used for the indexes are oriented for Iowa markets. Monthly prices received by farmers as reported by the Statistical Crop and Livestock Reporting Service were used as a base for all general commodity categories presented. These price series relate to the average prices farmers receive for their products—generally at the point of first sale. Prices for most commodities were collected during a 5-day period centered on the 15th of the month and are
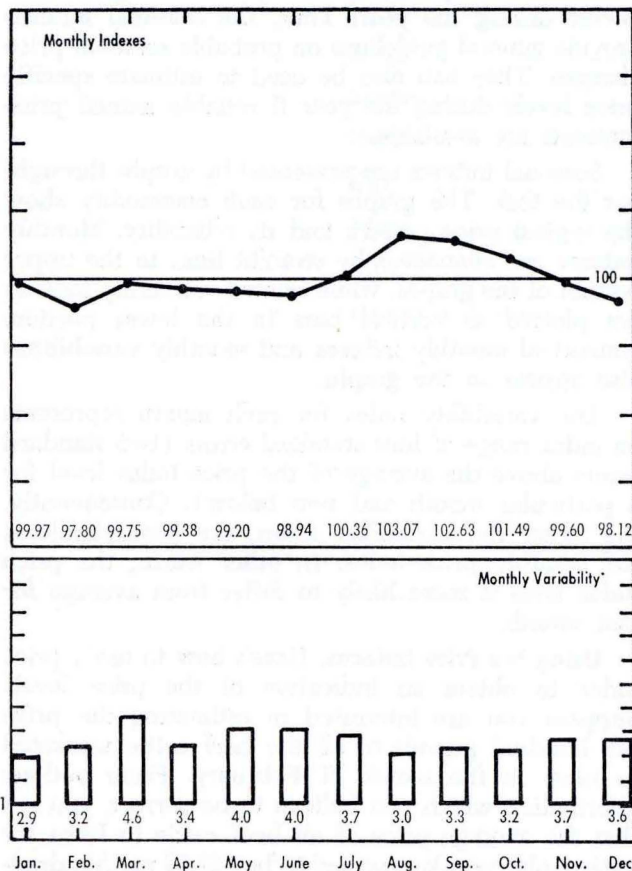
Fig. 1. Iowa all beef cattle price index, 1960-67.

*The range in variability for any month extends **above and below** that month's index by the number of points indicated by the Monthly Variability figure. For example, the range in variability for January is 97.07 (99.97 minus 2.90) to 102.87 (99.97 plus 2.90). This means that 95 percent of the time, the average January price for all beef cattle in Iowa will be between 97.07 percent and 102.87 percent of the estimated annual average price for that year.
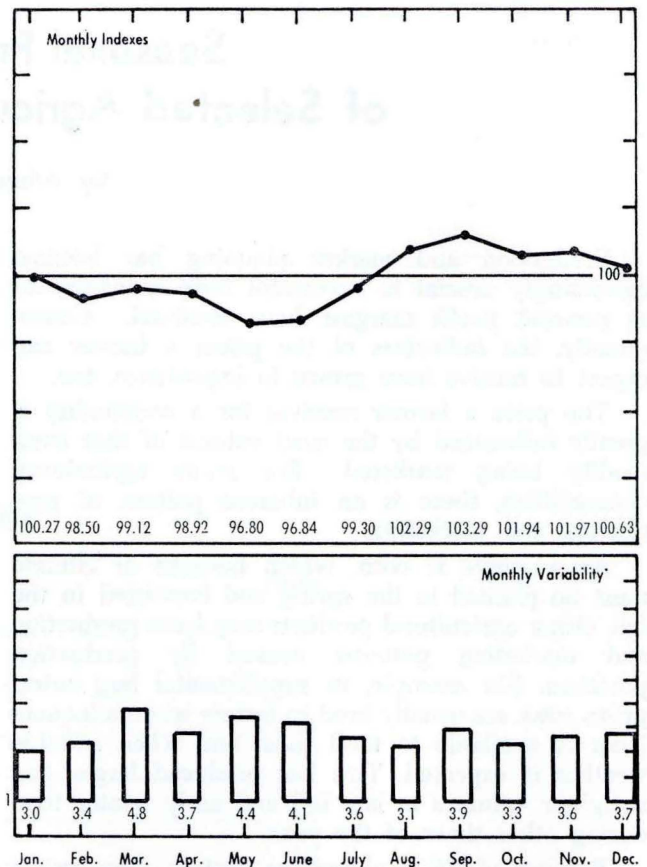
Fig. 2. Fed steer price index, seven-market average, 1960-67.[a]
*See note, fig. 1.

[a] Price series based on a sold-out-of-first-hands-for-slaughter weighted average price at Chicago, Omaha, Sioux City, Kansas City, National Stock Yards, Ill., St. Joseph and Denver markets.

now used to represent average prices received for sales of the commodity during the month. Where other price series are utilized, they are from recognized marketing centers.

A brief commodity description and the source of the price series used in calculating the price index identify each graph or table. Other information concerning the price series used for a specific seasonal index appears in footnotes.

CATTLE PRICES

The price indexes for several cattle classifications are presented in the following section. These seasonal indexes are characterized by fairly large variability ranges, often exceeding the differences between the high and low level of the price index for the year. Since cattle prices range widely from year to year, the usefulness of seasonal indexes for predicting the movement of cattle prices within any year is limited.

Iowa All Beef Cattle Prices, 1960-67

The seasonal low for beef cattle prices in Iowa during 1960-67 occurred in February. In March prices recover, then gradually decline through June. In July prices increase sharply, and the index reaches its high in August. From September through January, prices decline toward the February low.
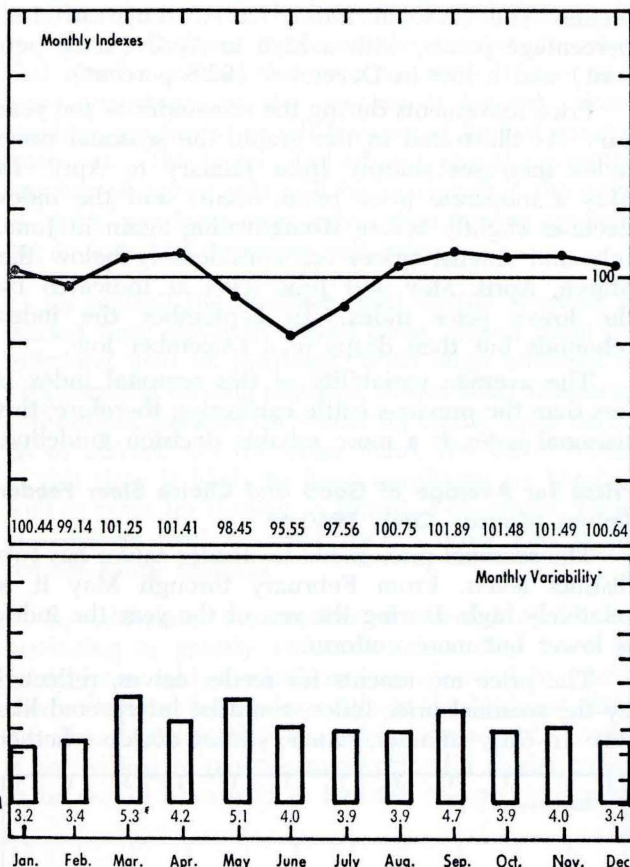
Fig. 3. Average of Choice and Prime steer price index (Chicago).[a]
*See note, fig. 1.
a/ Based on average of prices received for 1,100-1,300 pound Choice and Prime steers at Chicago, 1960-67.

The least accurate price indexes are for March, May and June; the most reliable index for all beef cattle in Iowa is January. This is reflected by the vertical height of the variability index bars.

Prices for All Grades of Fed Steers—Weighted Seven-Market Average, 1960-67

The seasonal price index reflecting movements in the seven-market average price for all grades of steers differs somewhat from that obtained for all beef cattle in Iowa. The seasonal low for this index occurs in May. In June a price recovery begins which culminates in a September high, followed by a gradual decline to the May low.

The range of the price index for all grades of steers at the seven markets is 6.5 index points, compared with 5.3 index points for all Iowa beef cattle. Since the height of the monthly variability index bars are similar, the seasonal price variation for all grades of steers is more pronounced than that for all Iowa beef cattle.

The preceding point has important implications for the use of these price indexes. The more general classifications (combinations of biological, weight and grade characteristics) obviously contain commodities which have unique seasonal price movements. When these unique price movements are combined with price movements of many commodities, the fluctuations in the price movement of any one commodity tends to become distorted and the seasonal price variation reduced. To avoid these distortions, always use the commodity category most closely approximating the commodity you are interested in.

Prices for Average of Choice and Prime 1,100-1,300 Pound Steers (Chicago), 1960-67

The seasonal price index for Prime and Choice, 1,100-1,300 pound steers indicates that prices paid for these steers during the 7 years have been lowest in June. From the June low until September, the index shows that prices increase rapidly. September has the highest numerical price index value. However, the variability index for this month shows the price index to be quite unstable. The index values for March, April, September, October and November show little difference in variability.

Choice 900-1,100 Pound Steer Prices (Chicago), 1960-67

Price movements for Choice 900-1,100 pound steers closely parallel the average price movements of Choice and Prime in the 1,100-1,300 pound bracket. The 900-1,100 pound category is somewhat more reliable, however, since the variability index range (vertical height of variability index bars) is reduced in all months except January.
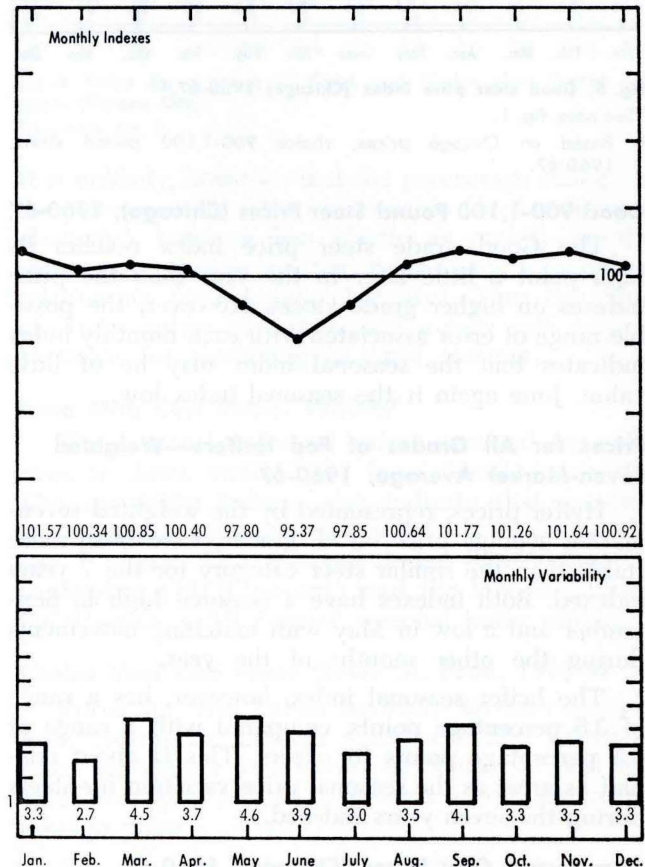
Fig. 4. Choice steer price index (Chicago) 1960-67.[a]
*See note, fig. 1.
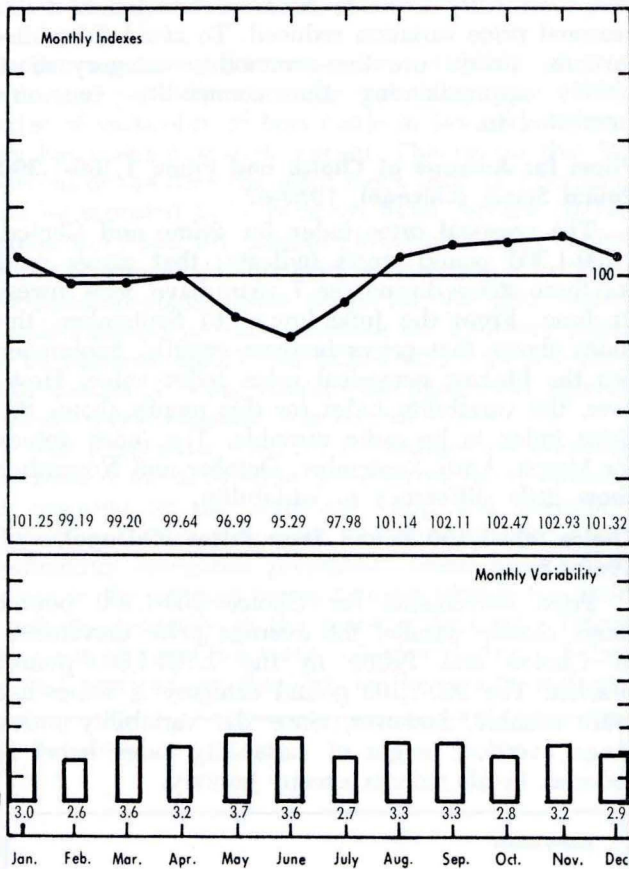a/ Based on prices received for Choice 900-1,100 pound steers at Chicago, 1960-67.

5

Monthly Indexes

100

101.25 99.19 99.20   99.64   96.99   95.29   97.98 101.14 102.11 102.47 102.93 101.32

Monthly Variability*

| 3.0 | 2.6 | 3.6 | 3.2 | 3.7 | 3.6 | 2.7 | 3.3 | 3.3 | 2.8 | 3.2 | 2.9 |

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Fig. 5. Good steer price index (Chicago) 1960-67.[a]

*See note, fig. 1.

[a] Based on Chicago prices, choice 900-1,100 pound steers, 1960-67.

Good 900-1,100 Pound Steer Prices (Chicago), 1960-67

The Good grade steer price index reaches its high point a little later in the year than the price indexes on higher grade steers. However, the possible range of error associated with each monthly index indicates that the seasonal index may be of little value. June again is the seasonal index low.

Prices for All Grades of Fed Heifers—Weighted Seven-Market Average, 1960-67

Heifer prices, represented by the weighted seven-market average price on all grades, have been more stable than the similar steer category for the 7 years indexed. Both indexes have a seasonal high in September and a low in May with matching movements during the other months of the year.

The heifer seasonal index, however, has a range of 3.5 percentage points, compared with a range of 6.5 percentage points for steers. This is about one-half as great as the seasonal price variation for steers during the seven years indexed.

Commercial Cow Prices (Chicago), 1960-67

The seasonal price index for Commercial grade cows shows a pronounced pattern of price move-

ments. The seasonal index has a range of 13.8 percentage points, with a high in April (106.6 percent) and a low in December (92.8 percent).

Price movements during the remainder of the year vary. As illustrated in the graph, the seasonal price index increases sharply from January to April. In May a moderate price break occurs and the index declines slightly before strengthening again in June. July and August prices are considerably below the March, April, May and June level as indicated by the lower price index. In September the index rebounds but then drops to a December low.

The average variability of this seasonal index is less than the previous cattle categories; therefore, this seasonal index is a more reliable decision guideline.

Prices for Average of Good and Choice Steer Feeder Calves (Kansas City), 1960-67

The seasonal price index for feeder calves has two distinct levels. From February through May it is relatively high. During the rest of the year the index is lower but more uniform.

The price movements for feeder calves, reflected by the seasonal price index, could be interpreted like this: In early summer, ranchers must decide whether

Monthly Indexes

100

101.19 99.31 99.09   99.34   98.10   98.26   99.70 101.29 101.63 100.50 101.10 100.68

Monthly Variability*

| 2.9 | 3.1 | 4.2 | 3.3 | 4.2 | 3.9 | 2.9 | 3.0 | 3.4 | 3.2 | 3.4 | 3.5 |

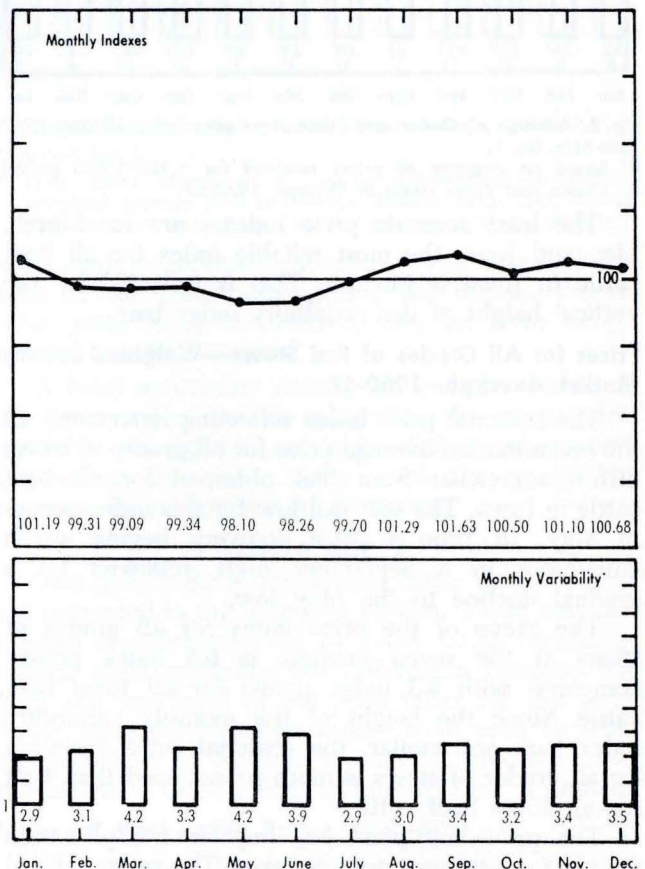Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Fig. 6. Heifer price index, seven-market average.[a]

*See note, fig. 1.

[a] Price series based on a sold-out-of-first-hands-for-slaughter weighted average price at Chicago, Omaha, Sioux City, Kansas City, National Stock Yards, Ill., St. Joseph and Denver markets.

to graze the calves which were weaned during the spring or sell them. However, the number of calves that can be sold at this time to cattle feeders at a price acceptable to the rancher is limited. Some ranchers are forced to sell because of limited grazing resources. This factor (and others), plus the potential number of calves that will be marketed if the price is "right," produces more calves than feeders are willing to buy and depresses calf prices.

By midfall the ranchers must decide whether to market their calves or winter them, selling them the following year as yearlings. With large amounts of supplemental feeding required, scarce labor resources, and limited facilities for wintering cattle, many calves go to market. On the other hand, the cattle feeder at this time is likely to have roughages on hand as well as grain for feeding or finishing programs. These two effects tend to cancel one another and prices remain fairly uniform.

By midwinter the number of calves available for marketing is greatly reduced—either they have already been sold or ranchers have decided to winter them. Demand for feeder cattle in the Midwest shifts simultaneously so that the Midwestern cattle feeder is not willing to pay the same price for feeder calves as he would have paid in late fall the previous year.
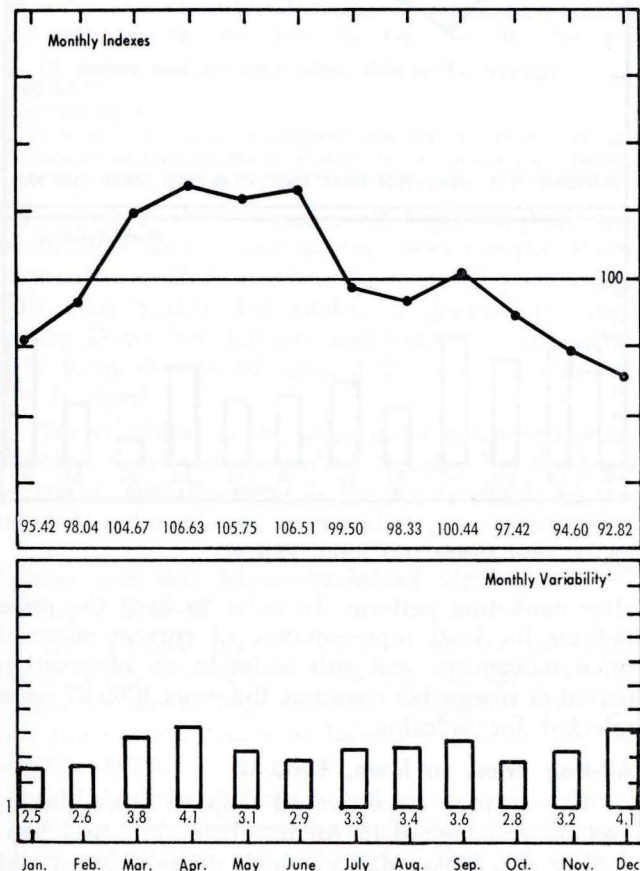

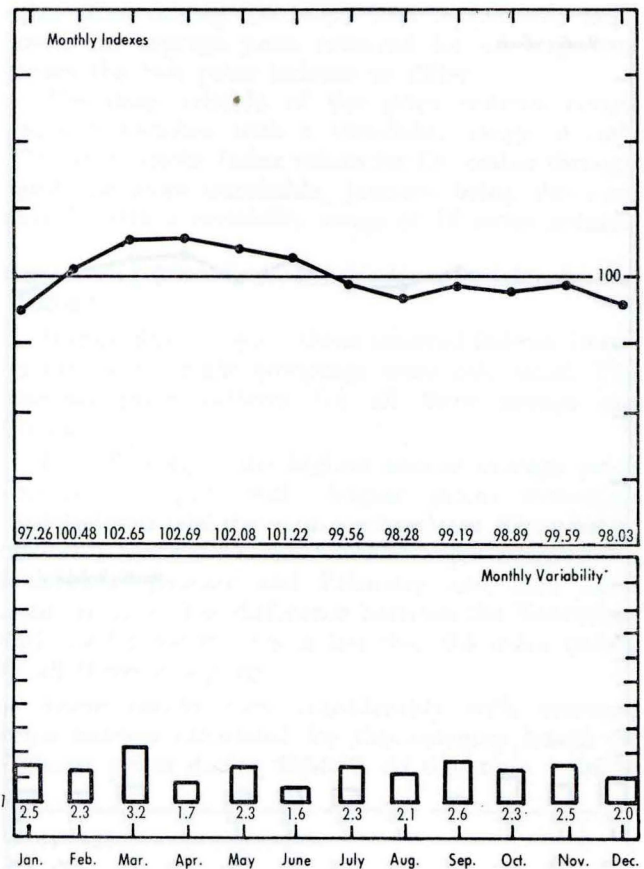Fig. 7. Commercial cow price index (Chicago), 1960-67.
*See note, fig. 1.

Fig. 8. Index for average of Good and Choice steer feeder calf prices (Kansas City).
*See note, fig. 1.

It is unlikely, however, that the percentage change in the price-quantity taken relationship (feeder demand elasticity) becomes less elastic as rapidly as the percentage change in the price-quantity supplied relationship (calf supply elasticity). Thus the price of feeder calves increases until a new calf crop is available for marketing in early summer.

Iowa Milk Cow Prices, 1960-67

The seasonal index of prices received for milk cows in Iowa varies little from month to month. The variability indexes also indicate that seasonal movements in milk cow prices have been similar the last 7 years. The seasonal index high occurs in September (101.8 percent) and the low in January (97.9)—only a 3.9 percent seasonal index range.

Choice Veal Calf Prices (South St. Paul), 1960-67

Prices for veal calves normally increase sharply from November through February. The February price for Choice veal calves at South St. Paul has been averaging almost 11 percent above the yearly average price.

The seasonal price low usually occurs in July with average prices 7 percent below the yearly average. This index shows that the typical seasonal
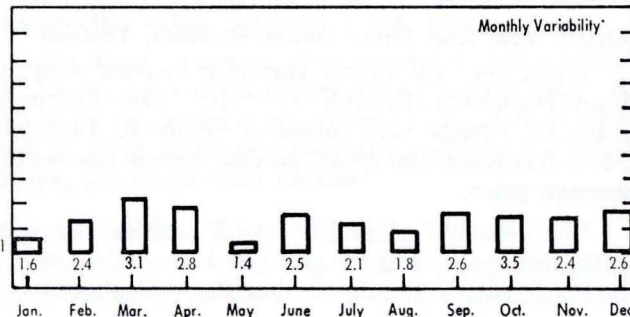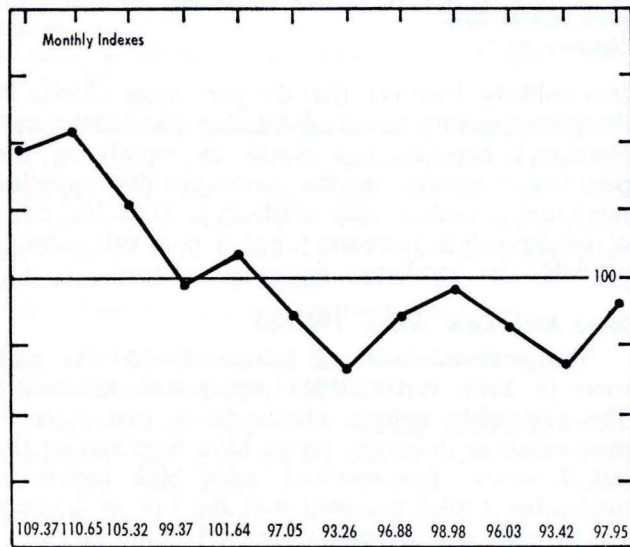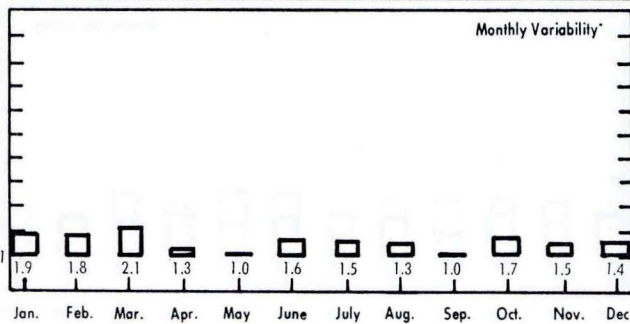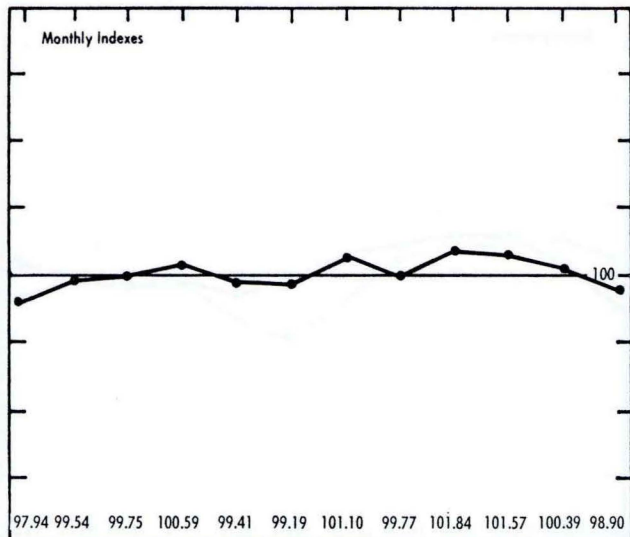
Monthly Indexes

97.94 99.54 99.75 100.59 99.41 99.19 101.10 99.77 101.84 101.57 100.39 98.90

Monthly Variability*

1.9 1.8 2.1 1.3 1.0 1.6 1.5 1.3 1.0 1.7 1.5 1.4

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Monthly Indexes

109.37 110.65 105.32 99.37 101.64 97.05 93.26 96.88 98.98 96.03 93.42 97.95

Monthly Variability*

1.6 2.4 3.1 2.8 1.4 2.5 2.1 1.8 2.6 3.5 2.4 2.6

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Fig. 9. Iowa milk cow price index, 1960-67.
*See note, fig. 1.

price movement is much greater for veal calves than for any other cattle classification presented.

The variability indexes indicate that this seasonal index is also more reliable than other cattle classifications in most months. Both of these outcomes are probably due to the different nature of this category. Veal calves are largely the by-product of dairy enterprises, and their marketing periods are primarily a result of calving patterns rather than conscientious market planning.

HOG PRICES

Price movements for hogs continually change as farmers adopt new techniques of production and

Monthly Indexes

98.77 100.00 97.70 93.63 96.81 101.91 106.00 107.46 104.03 100.81 95.87 97.17

Monthly Variability*

6.3 5.8 5.3 6.3 3.3 4.4 3.8 3.5 5.0 2.0 3.4 6.3

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.
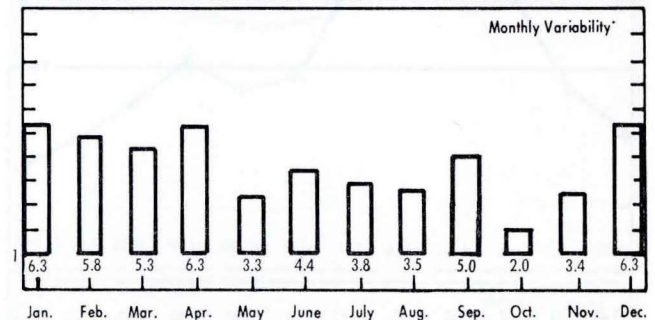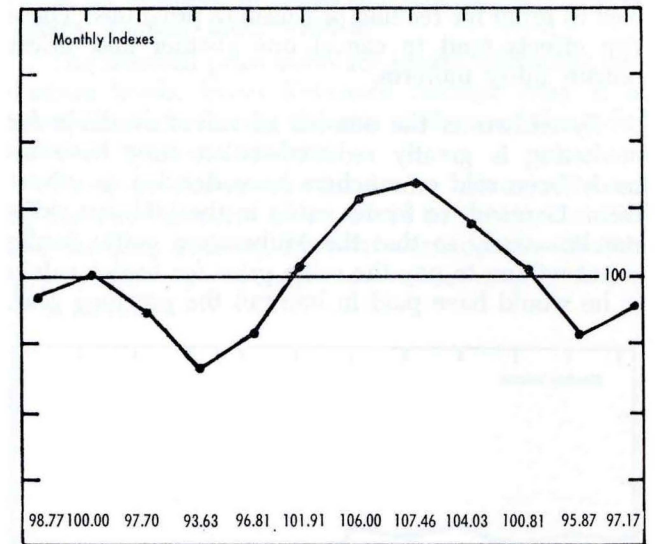
Fig. 11. Iowa all-hog price index, 1960-67.
*See note, fig. 1.

alter marketing patterns. In order to keep the price indexes for hogs representative of current seasonal price movements and still maintain an observation period of reasonable duration, the years 1960-67 were selected for indexing.

All-Hog Prices in Iowa, 1960-67

The average price for all hogs in Iowa during 1960-67 was highest in August. June, July and September also have relatively high prices. This would

Fig. 10. Choice veal calf price index (So. St. Paul), 1960-67.
*See note, fig. 1.

97.65 98.51 95.85 93.51 96.38 103.74 109.39 108.58 103.72 99.02 95.48 98.12

6.0 5.4 4.5 4.8 3.2 4.0 3.5 3.2 4.4 1.9 3.7 5.8

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Fig. 12. Barrow and gilt price index, eight-market average, 1960-67.a/
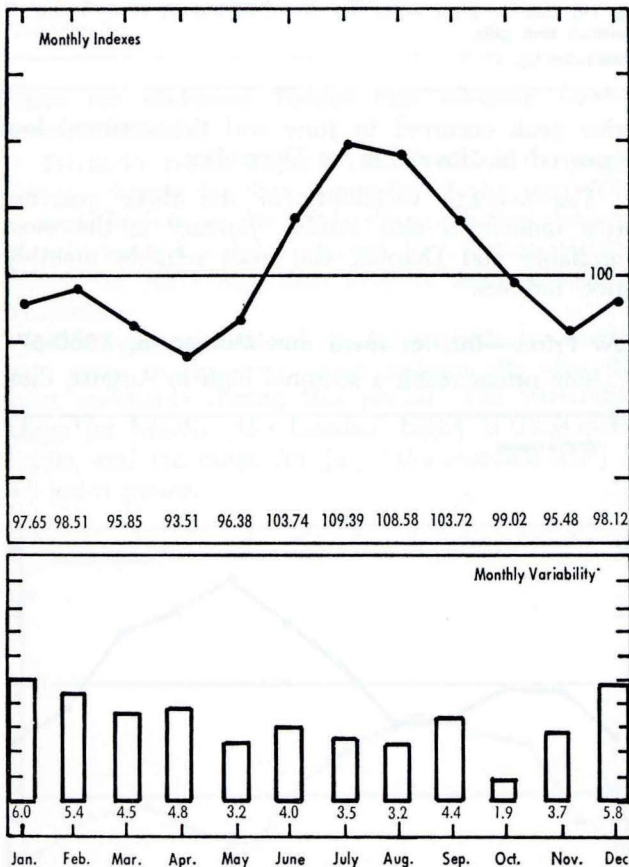*See note, fig. 1.
a/ Price series based on a weighted average cost of packers and shippers at Chicago, National Stock Yards, Kansas City, Omaha, Sioux City, St. Joseph, So. St. Paul and Indianapolis markets.

be expected since commercial hog slaughter has historically been lowest during these months. From September until November the seasonal price index falls considerably but makes a gradual recovery during December, January and February. The index then turns downward again and reaches a seasonal low in April.

The reliability of the price index is lowest during January, April and December. October has the least variability and therefore is the most reliable of the monthly price indexes in the all-hog seasonal index.

Barrow and Gilt Prices—Weighted Eight-Market Average, 1960-67

The seasonal price index for barrows and gilts based on the weighted 8-market average price is similar to the all-hog index. The seasonal high for this price index occurs in July, a month before the all-hog index.

Probably this difference and other contrasts during the summer can best be explained by looking at the composition of hog slaughter during this period. In the summer the marketings of sows comprise a larger percentage of total hog marketings than at any other time during the year. This temporarily pulls down the average price received for all hogs and causes the two price indexes to differ.

The most reliable of the price indexes occurs again in October with a variability range of only 3.74 index points. Index values for December through April are more unreliable, January being the least reliable with a variability range of 12 index points.

Barrow and Gilt Prices—Interior Iowa and Minnesota, 1960-67

Within this category, three seasonal indexes based on different weight groupings were calculated. The seasonal price patterns for all three groups are similar.

For all weights the highest annual average price occurred in July with August prices averaging slightly lower. All three seasonal indexes then plunge toward a November low, make a slight recovery in December, January and February and then drop again in April. The difference between the November and April price indexes is less than 0.5 index points in all three groupings.

These results vary considerably with seasonal price indexes calculated for this category based on Chicago prices during 1954-60. At that time a single

99.65 99.81 96.49 94.65 96.84 104.24 109.06 108.62 101.50 99.39 94.63 95.01

6.9 6.3 5.1 5.1 3.6 5.4 4.3 2.8 4.9 1.5 3.6 3.5

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.
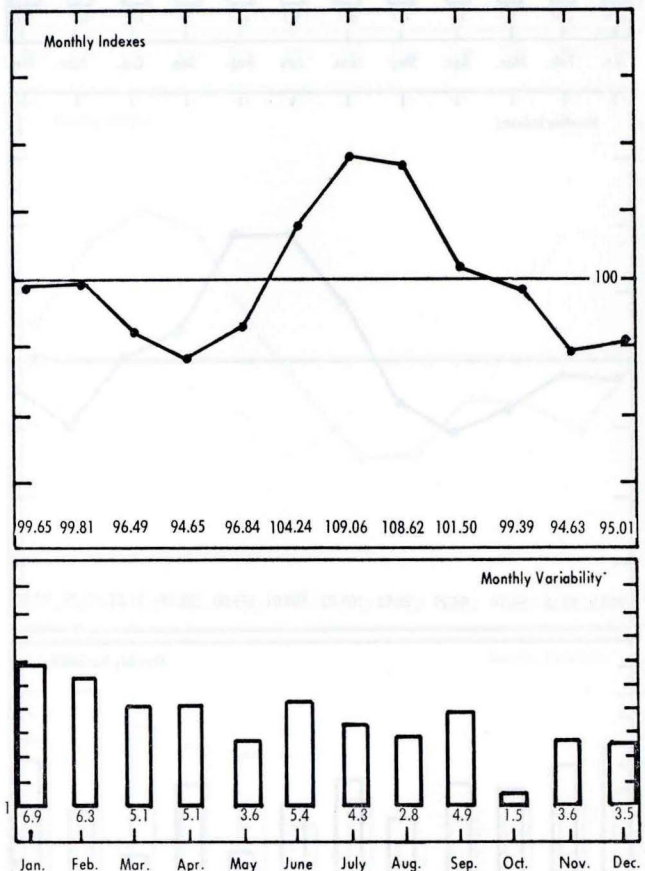
Fig. 13. Interior price index for 200-220 pound, Nos. 1 and 2 barrows and gilts.
*See note, fig. 1.

9

Left column charts

Monthly Indexes

| 98.97 | 99.24 | 96.20 | 94.32 | 96.10 | 104.31 | 108.60 | 108.39 | 102.01 | 99.33 | 94.47 | 98.01 |

Monthly Variability*

| 6.6 | 6.0 | 5.1 | 5.3 | 3.7 | 6.1 | 4.1 | 2.9 | 5.4 | 1.9 | 3.5 | 5.7 |
| Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. |

Monthly Indexes

| 98.21 | 98.68 | 96.14 | 94.29 | 96.53 | 103.82 | 109.01 | 109.00 | 102.19 | 99.83 | 94.78 | 97.50 |

Monthly Variability*

| 6.9 | 6.0 | 5.0 | 5.3 | 3.7 | 5.4 | 4.3 | 2.4 | 5.2 | 2.3 | 4.0 | 6.2 |
| Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. |

Right column

price peak occurred in June and the seasonal low appeared in November or December.

The average variability of the three seasonal price indexes is also similar. January is the most unreliable and October the most reliable monthly price indexes.

Sow Prices—Interior Iowa and Minnesota, 1960-67

Sow prices reach a seasonal high in August, then

Monthly Indexes

| 95.63 | 98.66 | 98.79 | 96.91 | 96.39 | 101.10 | 104.06 | 107.18 | 105.33 | 103.52 | 97.73 | 95.43 |

Monthly Variability*

| 7.7 | 6.2 | 5.9 | 6.0 | 3.8 | 5.7 | 4.5 | 2.8 | 4.5 | 2.6 | 3.1 | 5.7 |
| Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. |

Fig. 16. Interior price index for 270-330 pound, Nos. 1, 2 and 3 sows.
*See note, fig. 1.

usually decline to a seasonal low in January, make a slight recovery in February and March, decline again in April and May, and then increase sharply until August. Three seasonal indexes, based on different weight groupings, followed this pattern of price movements.

The most reliable monthly price index occurs in October, and the least reliable in January—identical to the barrow and gilt price index.
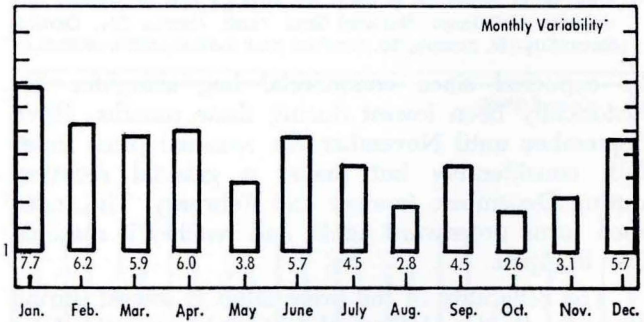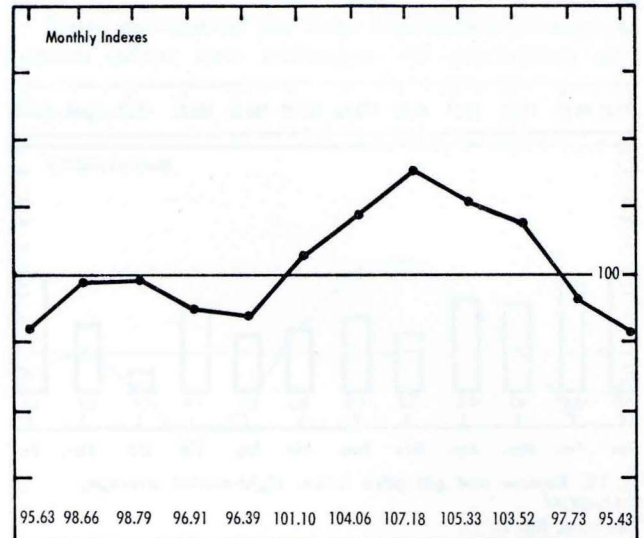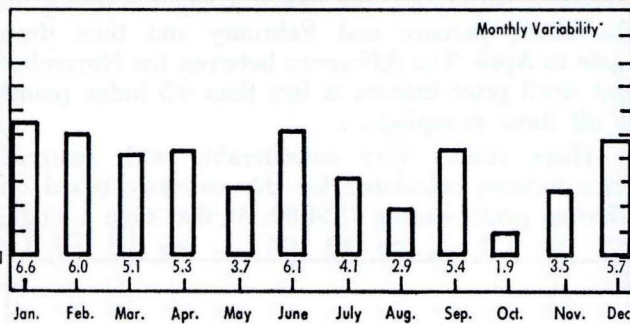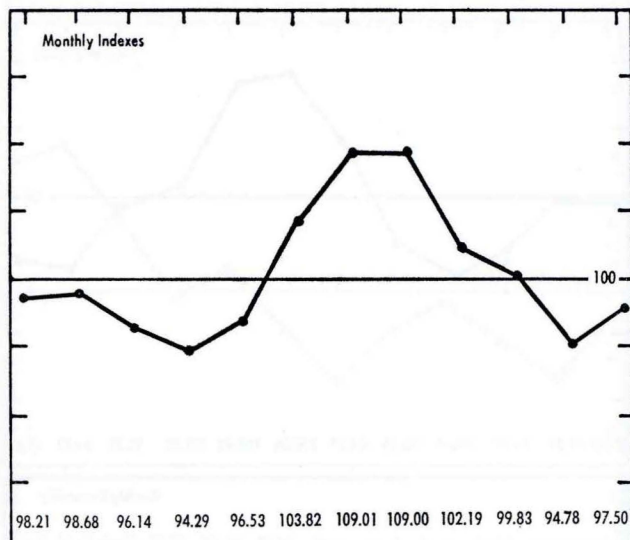
Fig. 15. Interior price index for 240-270 pound Nos. 1, 2 and 3 barrows and gilts.
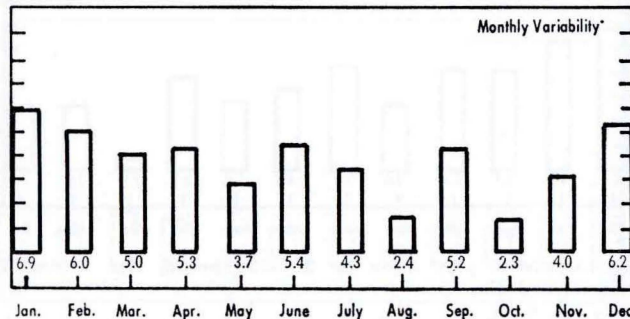*See note, fig. 1.

Prices for 40-Pound Feeder Pigs (Grundy Center, Iowa), 1960-67

Prices for feeder pigs are usually above the yearly average during the first 4 months of the year. The seasonal high is usually in March; prices then descend sharply toward a July seasonal low. Prices recover slightly in early fall, then drop to another low in November.

Although prices tend to be highest for feeder pigs early in the year, price indexes are also the most unreliable during this period. The variability range for March (the seasonal high) is 15.2 index points, and the range for July (the seasonal low) is 9.0 index points.
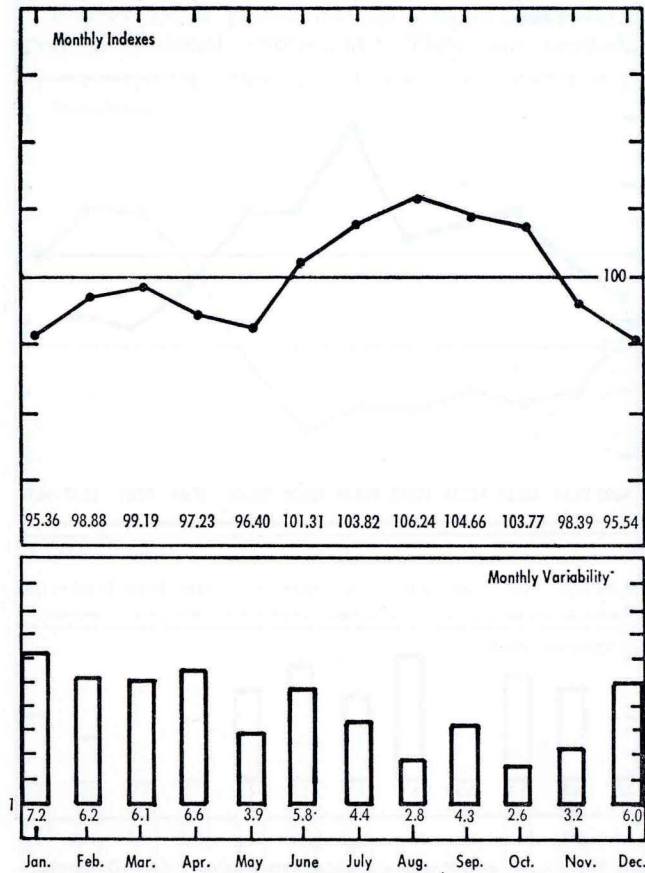

Monthly Indexes

94.29 98.49 99.81 98.21 96.96 101.86 103.07 105.56 104.14 103.80 98.86 94.86

Monthly Variability*

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
7.8	7.1	7.0	7.4	4.4	6.3	4.8	2.8	4.8	2.8	3.9	6.6

Monthly Indexes

95.36 98.88 99.19 97.23 96.40 101.31 103.82 106.24 104.66 103.77 98.39 95.54

Monthly Variability*

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
7.2	6.2	6.1	6.6	3.9	5.8	4.4	2.8	4.3	2.6	3.2	6.0

Fig. 17. Interior price index for 330-400 pound, Nos. 1, 2 and 3 sows.
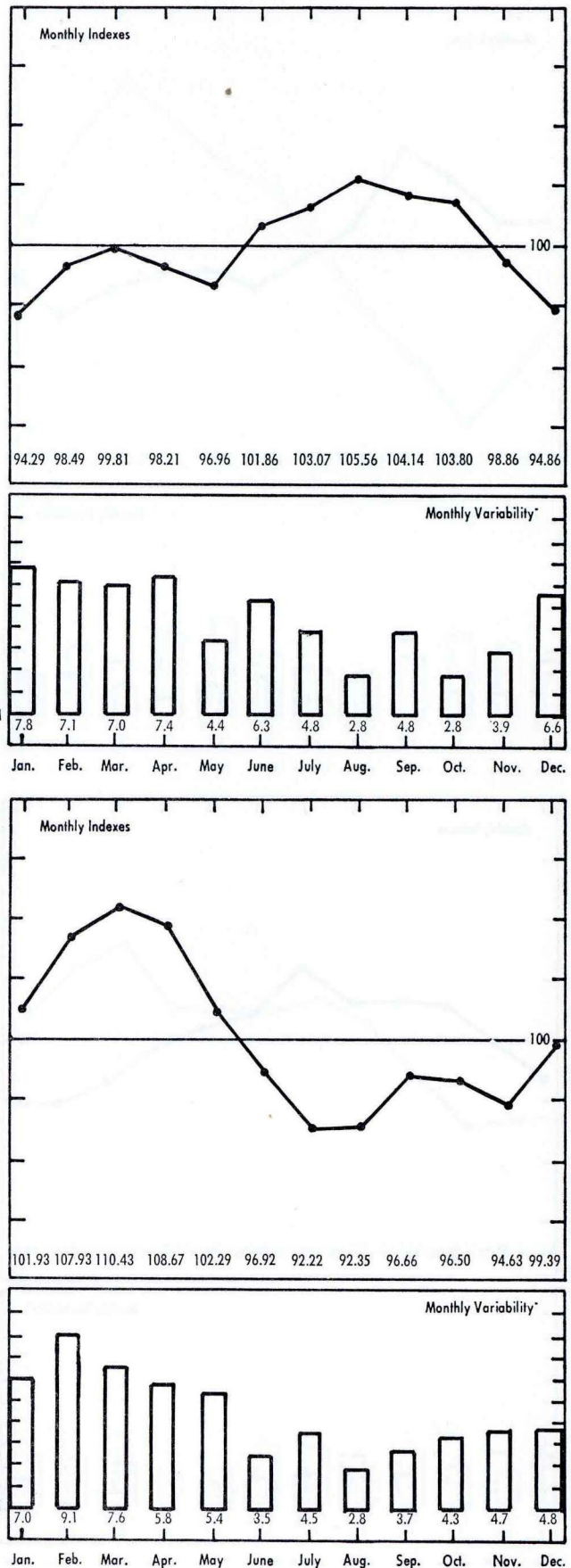*See note, fig. 1.

SHEEP

Iowa All-Sheep Prices, 1960-67

Sheep prices generally reach a peak in April, then decline in summer and fall, reaching a seasonal low

Monthly Indexes

101.93 107.93 110.43 108.67 102.29 96.92 92.22 92.35 96.66 96.50 94.63 99.39

Monthly Variability*

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
7.0	9.1	7.6	5.8	5.4	3.5	4.5	2.8	3.7	4.3	4.7	4.8

Fig. 19. Price index for 40-pound feeder pigs.[a]
*See note, fig. 1.
a/ Price paid by farmers at Wisconsin Feeder Pig Marketing Cooperative, Grundy Center, Iowa.

Monthly Indexes

102.29 102.17 105.49 108.28 101.57 99.21 96.72 98.14 97.68 96.52 94.30 97.60

Monthly Variability*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	3.6	2.0	2.1	4.5	2.6	3.1	2.7	2.4	1.8	3.4	2.8	2.9

Monthly Indexes

96.77 99.74 102.84 103.29 102.88 105.86 102.06 100.90 99.39 96.59 94.85 94.83

Monthly Variability*

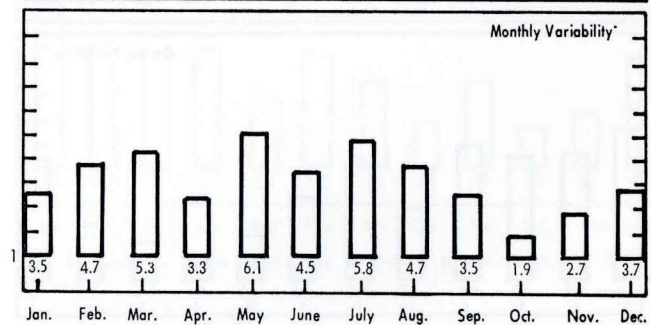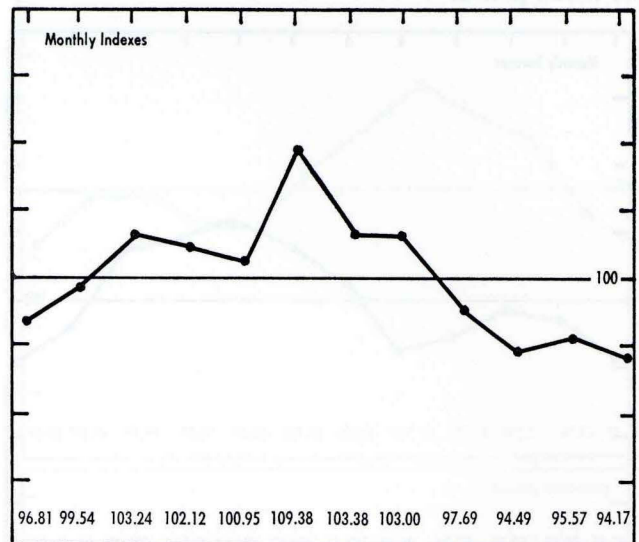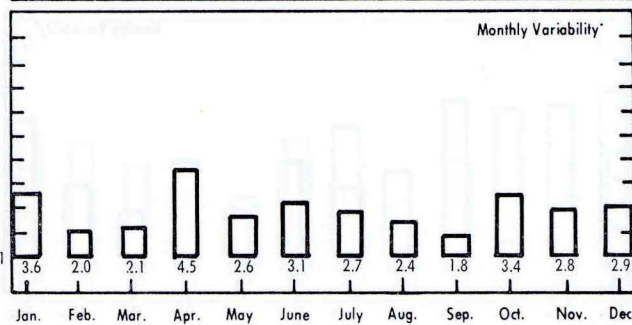|	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	3.5	3.6	4.6	2.5	3.4	2.6	2.4	2.3	2.3	1.9	1.3	2.4
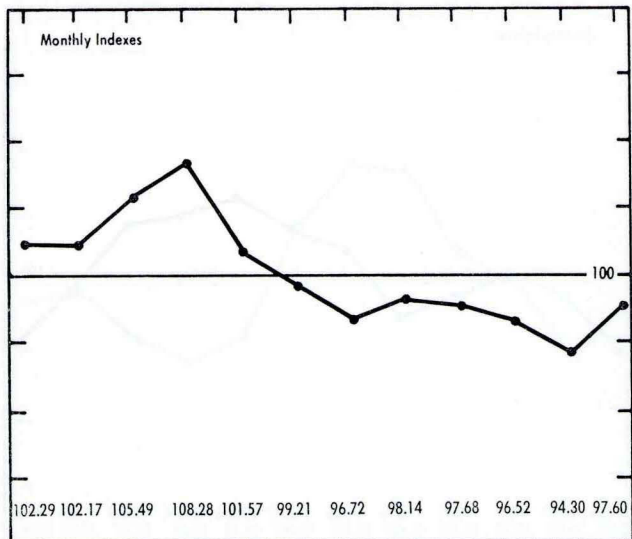
Fig. 20. Iowa all sheep price index, 1960-67.
*See note, fig. 1.

in November. In winter and early spring, prices usually increase rapidly. Since most lambing in the Corn Belt occurs between January and April, the seasonally high levels of the all-sheep price index correspond with periods when ewe marketings are lowest.

The reliability of the index is poorest in April (the seasonal index high) and greatest in September. Compared with the seasonal price index range, the variability index range is small.

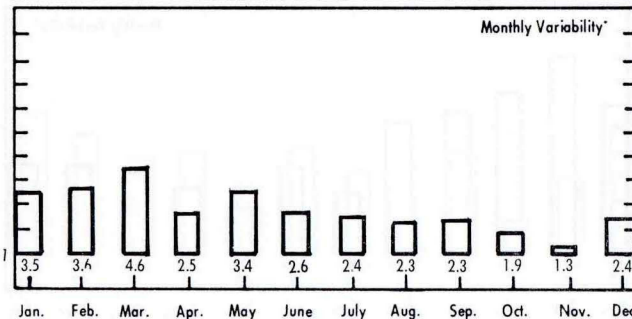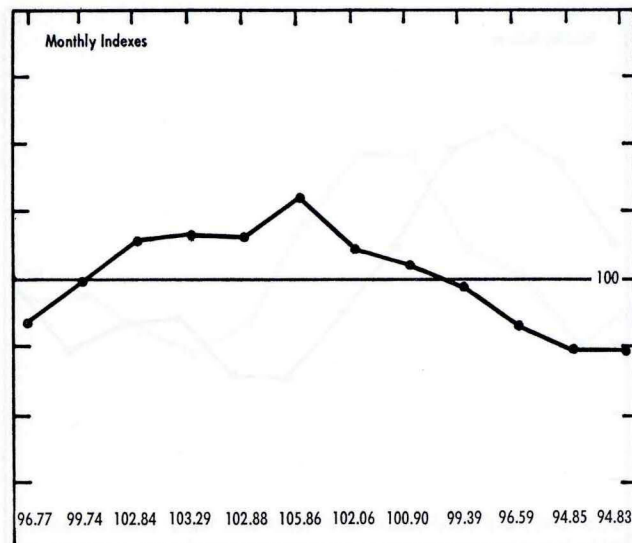### Iowa All-Lamb Prices, 1960-67

Lamb marketing begins in April and lasts nearly

Monthly Indexes

96.81 99.54 103.24 102.12 100.95 109.38 103.38 103.00 97.69 94.49 95.57 94.17

Monthly Variability*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	3.5	4.7	5.3	3.3	6.1	4.5	5.8	4.7	3.5	1.9	2.7	3.7

Fig. 22. Choice and Prime slaughter lamb price index (Omaha).
*See note, fig. 1.

a year. This period can be divided into two periods in the Corn Belt. From April through October, mostly spring and feeder lambs reach the market. From November through March mostly fed lambs are marketed.

Iowa farmers get the best price for lambs during the spring and feeder marketing period. These prices are then generally below the annual average price

Fig. 21. Iowa all lamb price index, 1960-67.
*See note, fig. 1.

12

Fig. 24. Iowa all-chicken price index, 1955-67.
*See note, fig. 1.

from September through February. These prices have been the most variable in the spring and least variable in the fall.
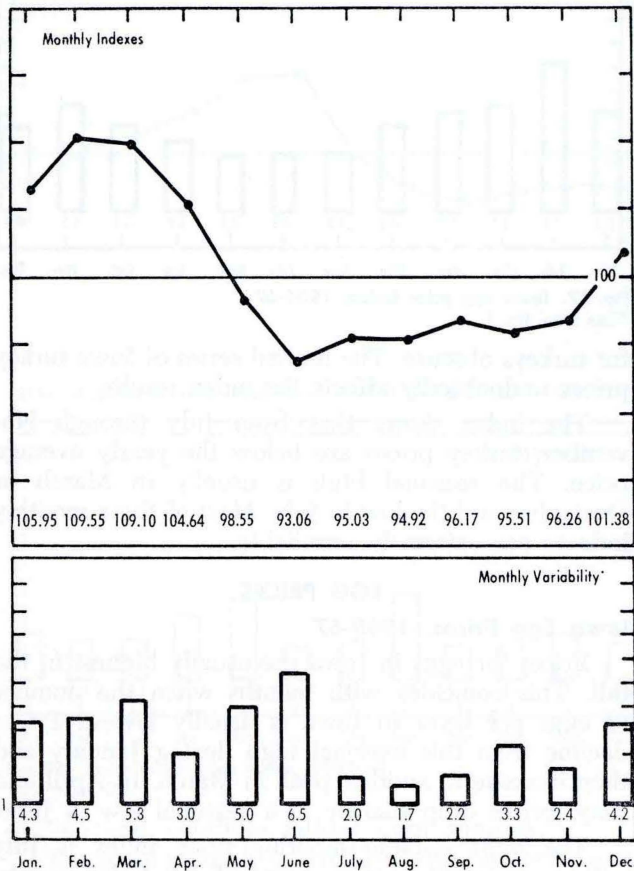
Prices for Average of Choice and Prime Slaughter Lambs (Omaha), 1960-67

Slaughter lamb prices usually are highest in June and lowest during October, November or December.

The reliability of this seasonal index is extremely low. The May index has a variability range of 12.2 index points. The most reliable of the monthly indexes is October with a variability range of 3.8.

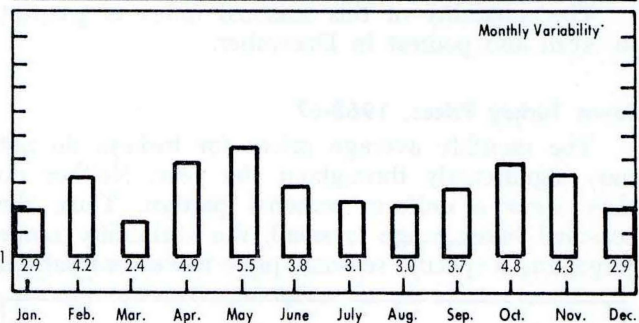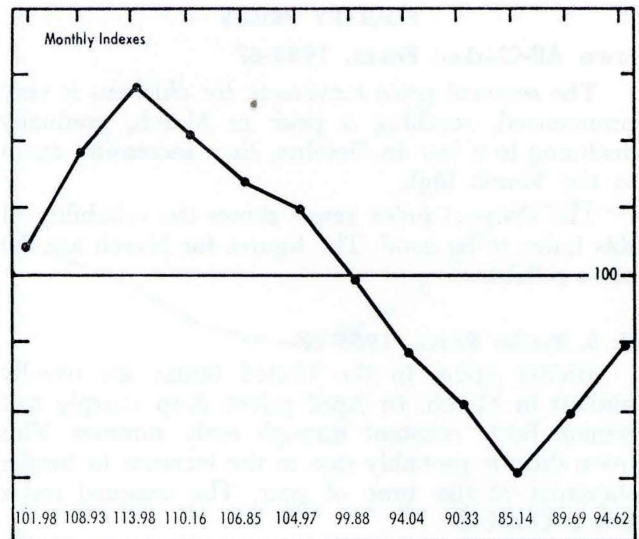### Choice Feeder Lamb Prices (South St. Paul), 1960-67

Feeder lamb prices usually display fairly pronounced seasonal movement. They are normally

Monthly Indexes

105.95 109.55 109.10 104.64 98.55 93.06 95.03 94.92 96.17 95.51 96.26 101.38

Monthly Variability*

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
4.3	4.5	5.3	3.0	5.0	6.5	2.0	1.7	2.2	3.3	2.4	4.2

Fig. 23. Choice feeder lamb price index (So. St. Paul).
*See note, fig. 1.

highest during February or March. During April and May they decline rapidly to the seasonal low in June. From July to November, prices improve slightly, and in December and January they increase sharply.

June is the least reliable monthly index and August the most reliable.

Monthly Indexes

101.98 108.93 113.98 110.16 106.85 104.97 99.88 94.04 90.33 85.14 89.69 94.62

Monthly Variability*

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2.9	4.2	2.4	4.9	5.5	3.8	3.1	3.0	3.7	4.8	4.3	2.9

Monthly Indexes

101.43 105.30 107.60 102.08 102.08 102.06 103.06 100.80 96.46 92.77 93.11 93.28

Monthly Variability*

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
3.3	3.1	2.9	2.4	2.6	3.8	3.6	2.9	3.6	2.8	2.5	4.4

Fig. 25. U. S. broiler price index, 1955-67.
*See note, fig. 1.

POULTRY PRICES

Iowa All-Chicken Prices, 1955-67

The seasonal price movement for chickens is very pronounced, reaching a peak in March, gradually declining to a low in October, then increasing again to the March high.

The seasonal index range shows the reliability of this index to be good. The figures for March are the most reliable.

U. S. Broiler Prices, 1955-67

Broiler prices in the United States are usually highest in March. In April prices drop sharply and remain fairly constant through early summer. This price drop is probably due to the increase in broiler slaughter at this time of year. The seasonal index low is October.

The reliability of this seasonal index is greatest in April and poorest in December.

Iowa Turkey Prices, 1963-67

The monthly average prices for turkeys do not vary significantly throughout the year. Neither do they show a uniform seasonal pattern. Thus, the seasonal index range is small, the variability range large, and a specific seasonal price movement pattern
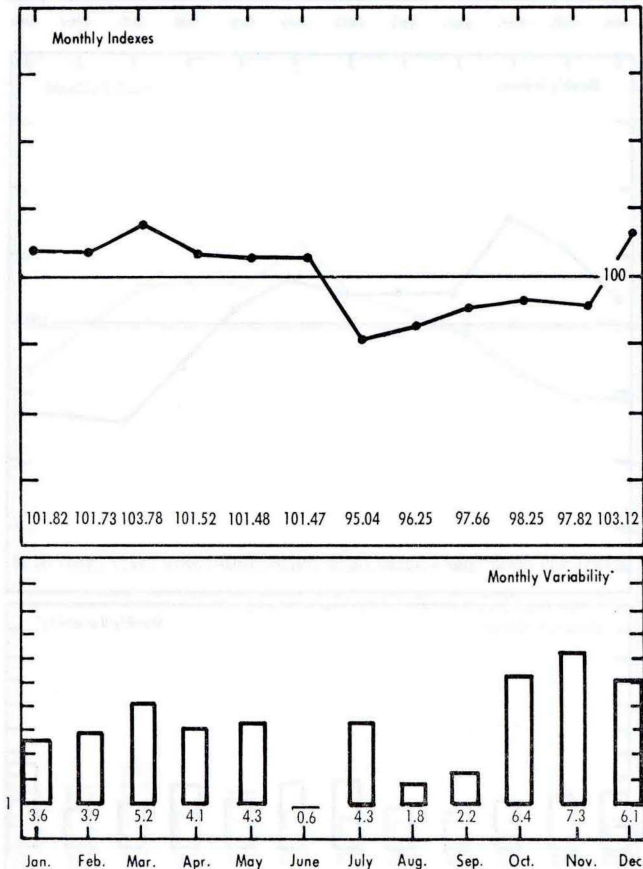

Monthly Indexes

101.82 101.73 103.78 101.52 101.48 101.47 95.04 96.25 97.66 98.25 97.82 103.12

Monthly Variability*

3.6 3.9 5.2 4.1 4.3 0.6 4.3 1.8 2.2 6.4 7.3 6.1

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Fig. 26. Iowa turkey price index, 1963-67.
*See note, fig. 1.

Monthly Indexes

97.75 101.72 102.67 95.69 89.29 86.69 91.34 98.44 110.49 109.63 110.35 105.86

Monthly Variability*

5.2 7.2 5.5 5.2 4.5 3.3 3.3 3.2 3.9 4.6 5.5 4.4

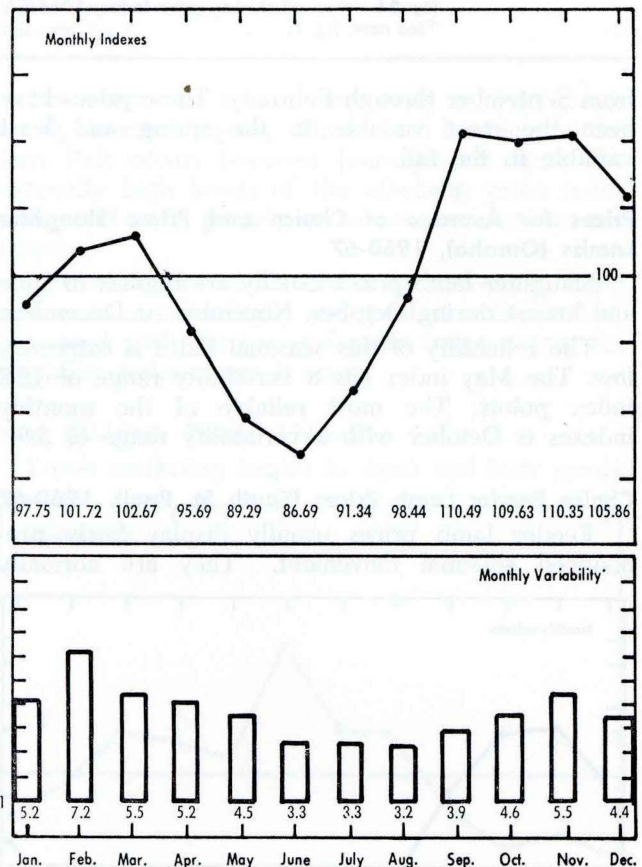Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Fig. 27. Iowa egg price index, 1955-67.
*See note, fig. 1.

for turkeys obscure. The limited series of Iowa turkey prices undoubtedly affects the index results.

The index shows that from July through November, turkey prices are below the yearly average price. The seasonal high is usually in March or December and the low in July. Most of these monthly indexes are extremely unreliable.

EGG PRICES

Iowa Egg Prices, 1955-67

Prices for eggs in Iowa are usually highest in the fall. This coincides with months when the number of eggs per layer in Iowa is usually lowest. Prices decline from this seasonal high during January and then increase to another peak in March. In April and May, prices drop sharply to a seasonal low in June.

The most reliable monthly price index is July with a variability index range of 6.6 index points. February's index is the least reliable with a variability range of 14.3 index points. In general, egg prices have been the most uniform during summer and early fall.

WOOL PRICES

Iowa Wool Prices, 1955-67

Wool prices in Iowa are normally highest in May or June. Prices then decline through September and remain lower until January, when a gradual upward movement toward the seasonal high begins.
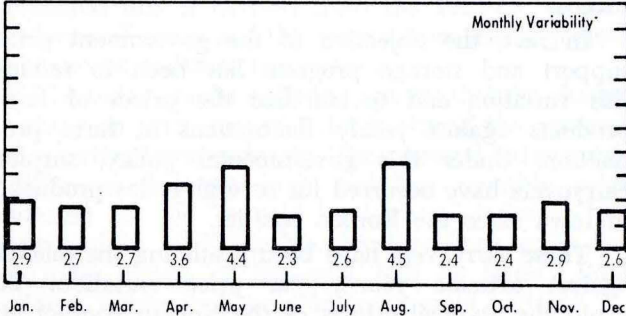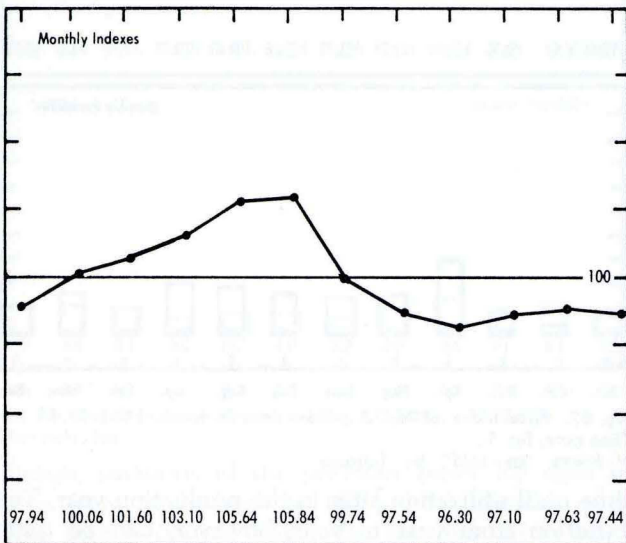
Wool prices have been the most variable in August and the least variable in June.

MILK PRICES

U. S. Milk Prices (Manufacturing Grade), 1958-67

The pattern of manufacturing-grade milk prices in the United States reflects a price movement one would expect from the usual annual milk production curve. Since production is highest in summer, summer milk prices drop and the seasonal index low occurs in June. Milk prices then increase through the remainder of the summer and fall until they reach a peak in November. By December prices begin to

Monthly Indexes

97.94 100.06 101.60 103.10 105.64 105.84 99.74 97.54 96.30 97.10 97.63 97.44

Monthly Variability*

2.9   2.7   2.7   3.6   4.4   2.3   2.6   4.5   2.4   2.4   2.9   2.6

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.
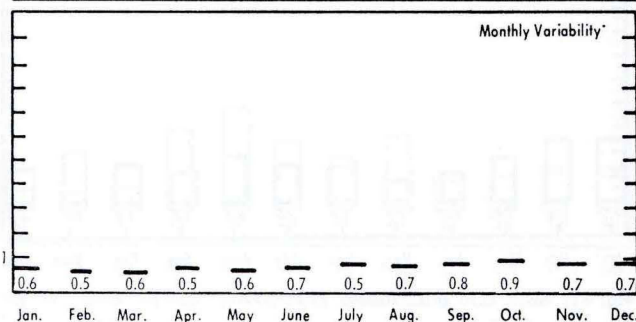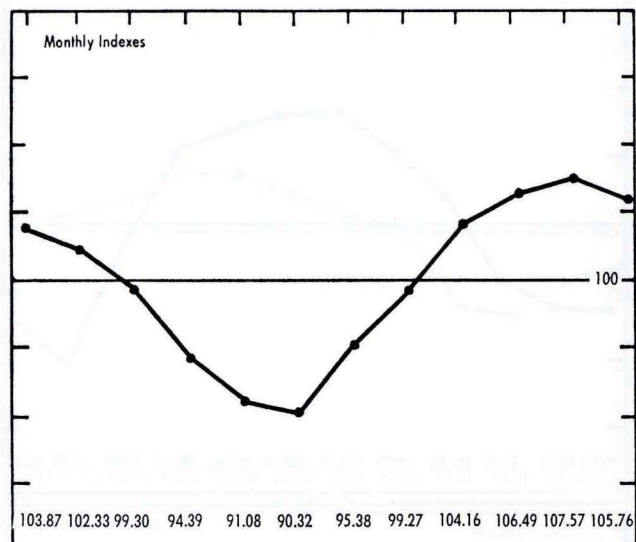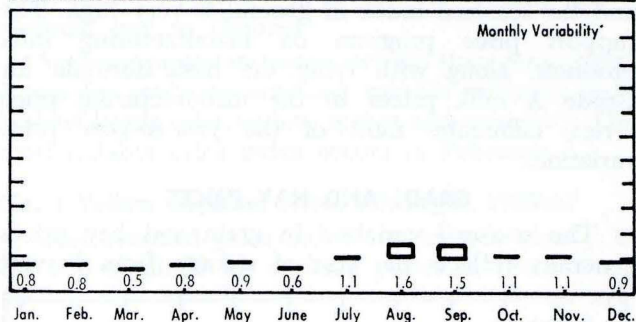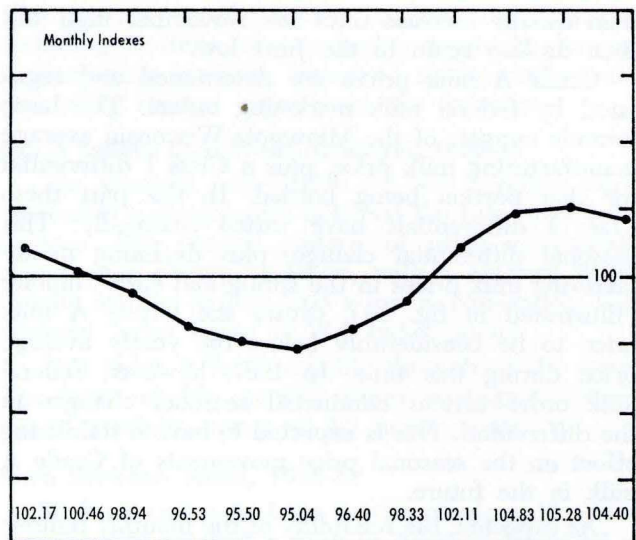
Fig. 28. Iowa wool price index, 1955-67.
*See note, fig. 1.

decline and continue falling until summer.

The small monthly variability index ranges indicate that the monthly indexes are quite reliable. The least reliable is August, which has a variability range of 3.2 index points.

U. S. Milk Prices (Eligible for Fluid Markets), 1958-67

The average price received by farmers for Grade A milk usually reaches a seasonal low in June. Prices

Fig. 30. Price index of U. S. milk eligible for fluid markets.
*See note, fig. 1.

Monthly Indexes

102.17 100.46 98.94 96.53 95.50 95.04 96.40 98.33 102.11 104.83 105.28 104.40

Monthly Variability*

0.8   0.8   0.5   0.8   0.9   0.6   1.1   1.6   1.5   1.1   1.1   0.9

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Monthly Indexes

103.87 102.33 99.30 94.39 91.08 90.32 95.38 99.27 104.16 106.49 107.57 105.76

Monthly Variability*

0.6   0.5   0.6   0.5   0.6   0.7   0.5   0.7   0.8   0.9   0.7   0.7

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

then usually increase until the November high and then decline again to the June low.

Grade A milk prices are determined and regulated by federal milk marketing orders. The basic formula consists of the Minnesota-Wisconsin average manufacturing milk price, plus a Class I differential for that portion being bottled. In the past these Class I differentials have varied seasonally. This seasonal differential change, plus declining manufacturing milk prices in the spring and early summer (illustrated in fig. 29), causes the Grade A milk price to be considerably below the yearly average price during this time. In 1967, however, federal milk order actions eliminated seasonal changes in the differential. This is expected to have a stabilizing effect on the seasonal price movements of Grade A milk in the future.

As expected, the reliability of the monthly indexes and the seasonal index in general is very high. The support price program on manufacturing milk products, along with tying the basic formula for Grade A milk prices to the manufacturing price series, eliminates most of the year-to-year price variation.

GRAIN AND HAY PRICES

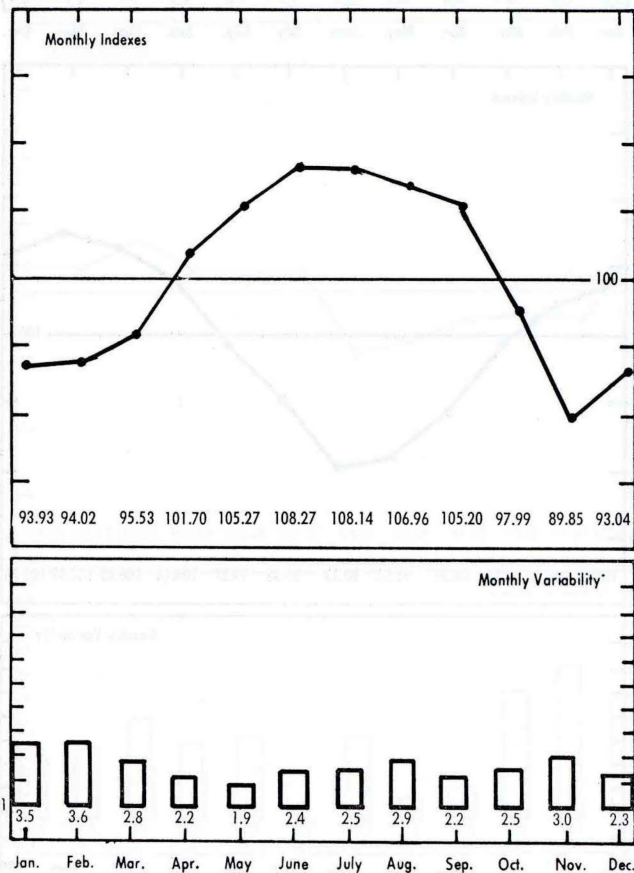The seasonal variation in grain and hay prices generally reflects the cost of storage from harvest

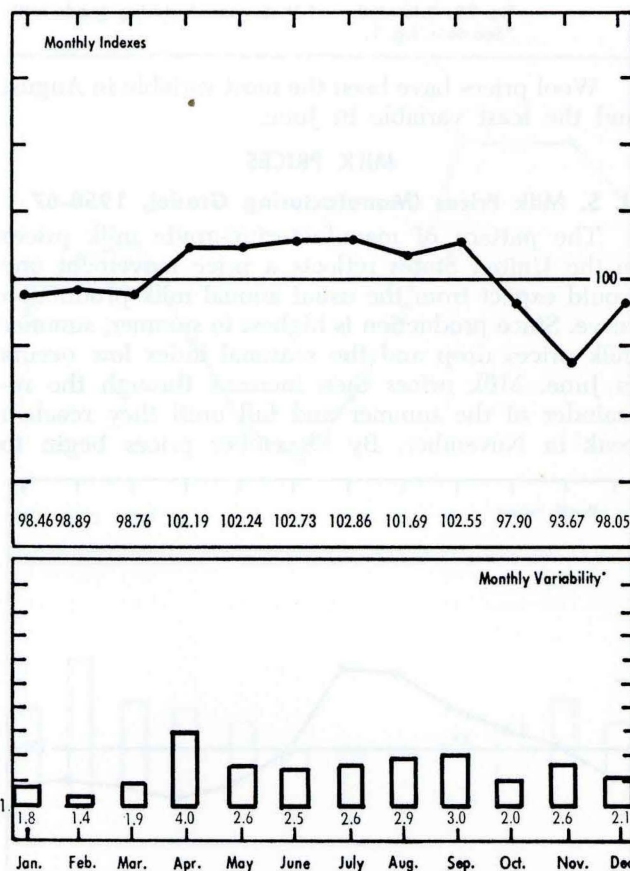**Fig. 31. Iowa corn price index, 1955-65.**
*See note, fig. 1.

Monthly Indexes: 93.93 94.02 95.53 101.70 105.27 108.27 108.14 106.96 105.20 97.99 89.85 93.04

Monthly Variability*: 3.5 3.6 2.8 2.2 1.9 2.4 2.5 2.9 2.2 2.5 3.0 2.3

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Fig. 32. Price index of No. 2 yellow corn in Iowa, 1961-67.[a/]
*See note, fig. 1.
a/ Prices "as sold" by farmers.

Monthly Indexes: 98.46 98.89 98.76 102.19 102.24 102.73 102.86 101.69 102.55 97.90 93.67 98.05

Monthly Variability*: 1.8 1.4 1.9 4.0 2.6 2.5 2.6 2.9 3.0 2.0 2.6 2.1

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

time until utilization later in the production year. The variation from year to year, however, can be quite severe.

In fact, the objective of the government price support and storage program has been to reduce this variation and to stabilize the prices of farm products against yearly fluctuations in farm production. Under this governmental policy, surplus carryovers have occurred for several grains produced in Iowa since the Korean conflict.

These carryovers have been insulating the market against extreme year-to-year price variation. To avoid the atypical effects of the Korean conflict on the seasonal price movements of grains and hay and still provide an adequate period of observation, the years 1955 to 1967 were selected as a base period for the seasonal price indexes presented in the following section.

Iowa Corn Prices, 1955-65 and 1960-67

Two seasonal price indexes based on overlapping time dimensions are presented on the prices Iowa farmers have received for corn. Until 1965 these prices were reported "as sold by farmers." Late in 1965 the Statistical Reporting Service began reporting this price series on a 56-pound, 15½-percent moisture basis. In addition to the reporting basis
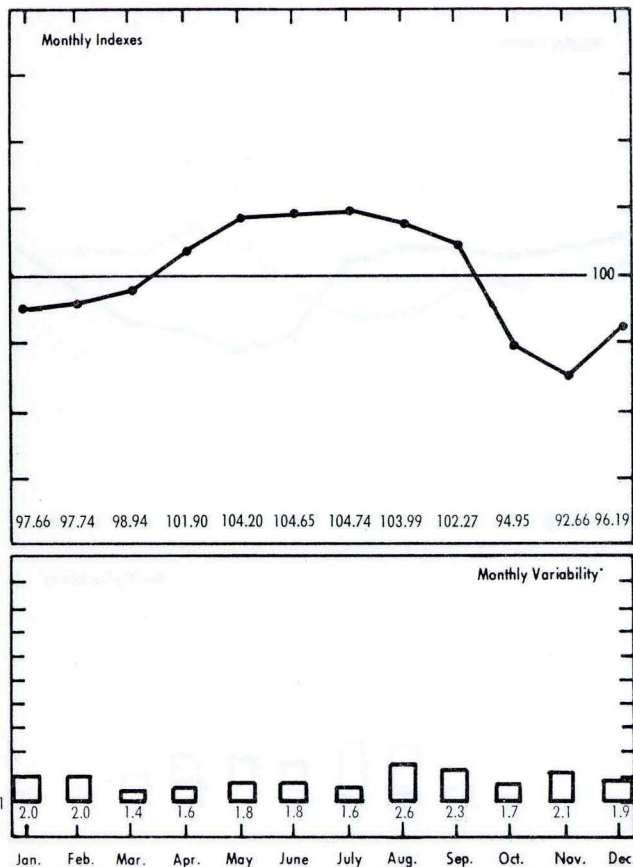
16

Monthly Indexes

| 97.66 | 97.74 | 98.94 | 101.90 | 104.20 | 104.65 | 104.74 | 103.99 | 102.27 | 94.95 | 92.66 | 96.19 |

Monthly Variability*

| 2.0 | 2.0 | 1.4 | 1.6 | 1.8 | 1.8 | 1.6 | 2.6 | 2.3 | 1.7 | 2.1 | 1.9 |

| Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. |

Fig. 33. No. 3 yellow corn price index (Chicago), 1955-67.
*See note, fig. 1.

change, revisions of the previous series for corn in Iowa were made back to 1959, the beginning of a farm census period. Thus, the seasonal price index presented first is derived from the 1955-65 "as sold by farmers" series and the second from the 56-pound, 15½-percent moisture basis series.

The index graphs make it apparent that the change in the corn price reporting basis altered the seasonal price pattern tremendously. The seasonal index range (difference between high and low monthly price indexes) for the "as sold by farmers" index is 18.4 index points, while the No. 2 yellow basis series has an index range of 9.2—only half as large. Both indexes, however, have similar seasonal patterns.

The seasonal high is usually in June or July and the low in November, the major harvesting period. Differences in the two seasonal indexes can be explained by examining the reporting basis. No. 2 yellow corn has specific quality characteristics. Corn "as sold by farmers" doesn't imply any specific quality standards, and therefore corn quality is variable. The quality of corn marketed during the harvesting period naturally differs considerably from that marketed after a storage period.

The reliability of the 1955-65 seasonal index is best in May and poorest in February. The No. 2 yellow corn seasonal index is most reliable in February and least reliable in April, almost the opposite.

This probably results from a combination of factors including the differing corn quality standards, changes in harvesting methods, improved transportation and expanding storage capacity in the industry.

No. 3 Yellow Corn Prices (Chicago), 1955-67

The seasonal price index for No. 3 yellow corn represents a compromise between the two Iowa corn indexes. The general pattern of price movements corresponds closely, however, with a seasonal high, usually in June or July, and a low in November. The seasonal index range is 12.1 index points.

This index is fairly reliable throughout the year. The least reliable monthly index is August, which has a variability range of 5.2 index points.

Iowa Soybean Prices, 1955-67

Soybean prices in Iowa in the previous 12 years have usually reached a peak in April or May and a seasonal low in October.

Soybean prices are more variable than corn prices. Prices for soybeans are least reliable when at their highest levels (during late spring and summer). The most reliable price index occurs in February.

No. 1 Yellow Soybean Prices (Chicago), 1955-67

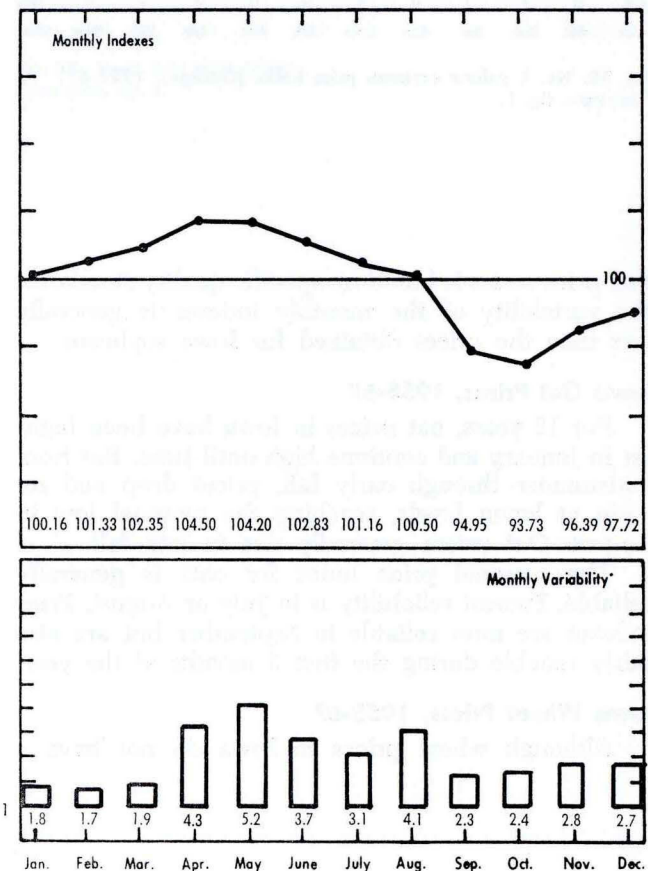This seasonal price index corresponds closely to the one obtained for soybean prices in Iowa. Since

Monthly Indexes

| 100.16 | 101.33 | 102.35 | 104.50 | 104.20 | 102.83 | 101.16 | 100.50 | 94.95 | 93.73 | 96.39 | 97.72 |

Monthly Variability*

| 1.8 | 1.7 | 1.9 | 4.3 | 5.2 | 3.7 | 3.1 | 4.1 | 2.3 | 2.4 | 2.8 | 2.7 |

| Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. |

Fig. 34. Iowa soybean price index, 1955-67.
*See note, fig. 1.

17

Monthly Indexes

100

100.17 101.29 101.79 104.04 103.69 102.19 101.21 100.26 95.97 94.76 96.66 97.93

Monthly Variability*

1   1.6   1.7   2.4   4.2   4.6   3.3   2.9   3.8   2.2   2.4   2.9   2.3

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.
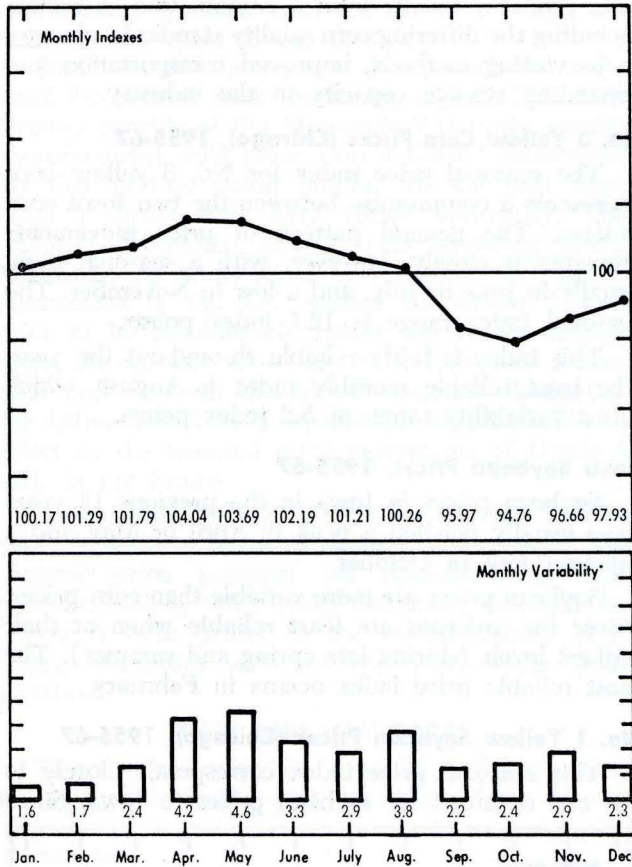
Fig. 35. No. 1 yellow soybean price index (Chicago), 1955-67.
*See note, fig. 1.

Monthly Indexes

100

103.26 102.35 101.99 102.54 102.57 101.32 96.09 94.87 96.31 96.98 99.46 102.22

Monthly Variability*

1   1.2   1.2   1.3   1.8   1.5   1.3   2.7   2.9   2.0   1.1   1.3   1.6

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.
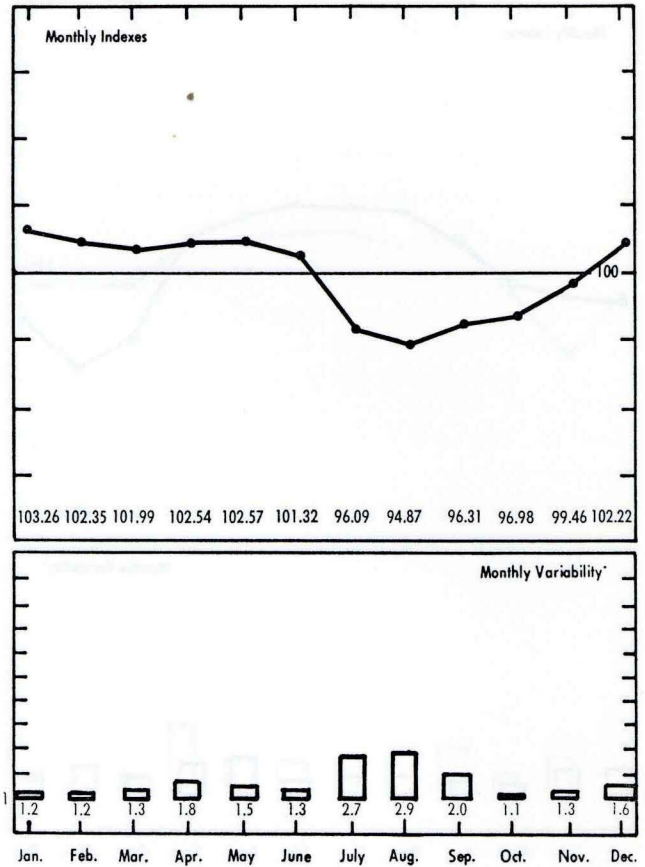
Fig. 36. Iowa oats price index, 1955-67.
*See note, fig. 1.

this price series is based on specific quality standards, the variability of the monthly indexes is generally less than the prices obtained for Iowa soybeans.

Iowa Oat Prices, 1955-67

For 12 years, oat prices in Iowa have been highest in January and continue high until June. But from midsummer through early fall, prices drop and remain at lower levels, reaching the seasonal low in August. Oat prices generally rise in late fall.

The seasonal price index for oats is generally reliable. Poorest reliability is in July or August. Price indexes are most reliable in September but are also fairly reliable during the first 3 months of the year.

Iowa Wheat Prices, 1955-67
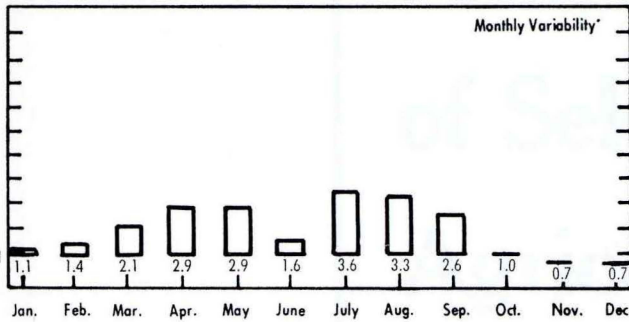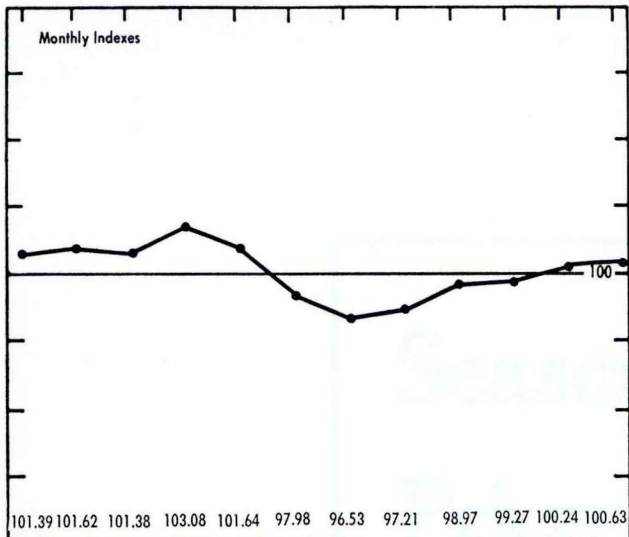
Although wheat prices in Iowa do not have a large seasonal movement, a seasonal high and low are distinguishable. The high usually occurs in April and the low in July. Prices remain fairly close to the yearly average price throughout the remainder of the year.

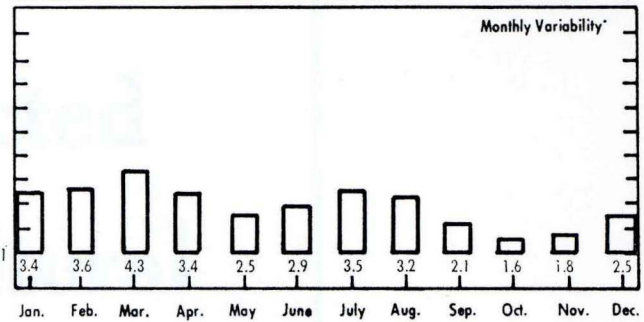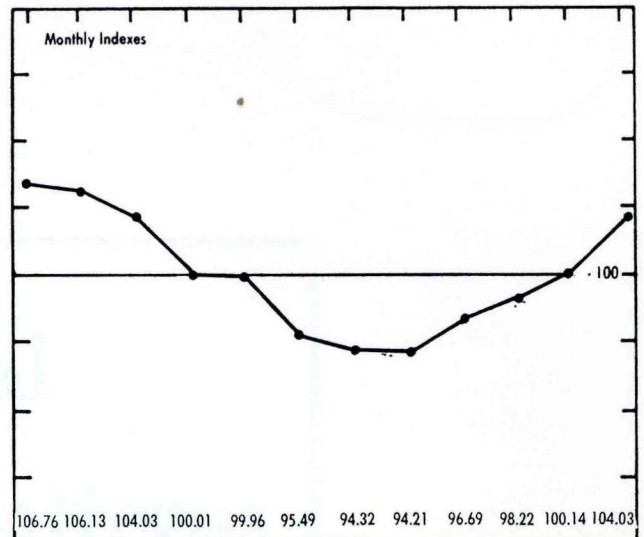Wheat prices are the least variable in November and the most variable in July.

Iowa Hay Prices, 1955-67

Hay prices in Iowa are usually lowest in the summer. Prices then rise to a seasonal high in January, followed by a gradual decline again into the summer.
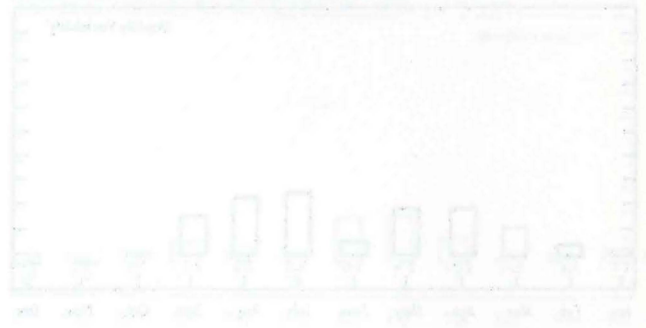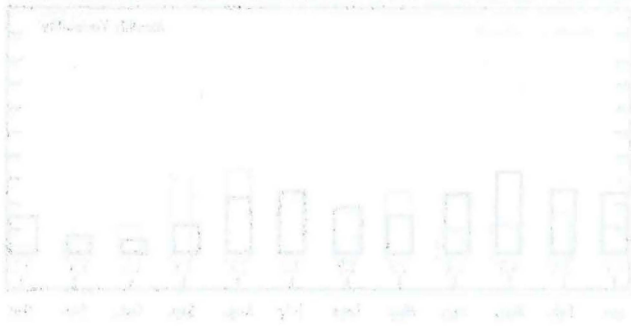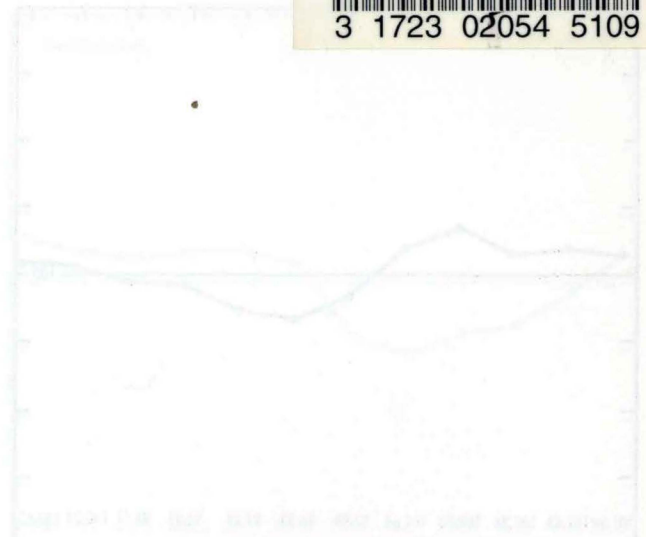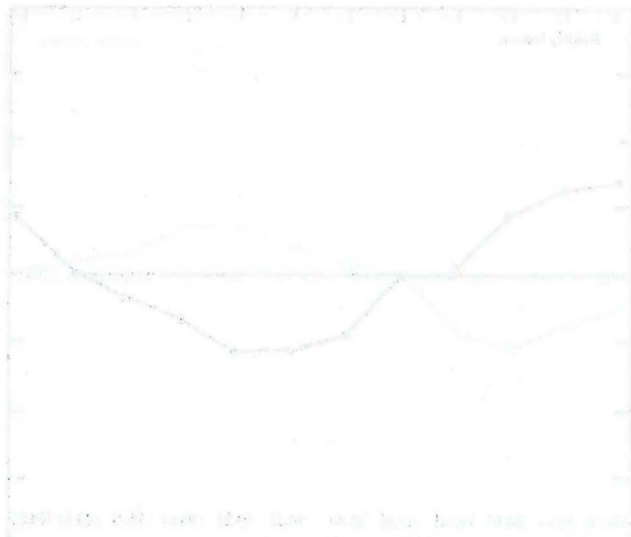
Hay prices are the most variable in March and most reliable in October and November.

18

Monthly Indexes

101.39 101.62 101.38 103.08 101.64 97.98 96.53 97.21 98.97 99.27 100.24 100.63

Monthly Variability*

1.1 1.4 2.1 2.9 2.9 1.6 3.6 3.3 2.6 1.0 0.7 0.7

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Fig. 37. Iowa wheat price index, 1955-67.
*See note, fig. 1.

Monthly Indexes

106.76 106.13 104.03 100.01 99.96 95.49 94.32 94.21 96.69 98.22 100.14 104.03

Monthly Variability*

3.4 3.6 4.3 3.4 2.5 2.9 3.5 3.2 2.1 1.6 1.8 2.5

Jan. Feb. Mar. Apr. May June July Aug. Sep. Oct. Nov. Dec.

Fig. 38. Iowa hay price index.
*See note, fig. 1.