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RELIABILITY AND ADEQUACY OF SOUTH DAKOTA FARM PRICE DATA

By

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RELIABILITY AND ADEQUACY OF SOUTH DAKOTA FARM PRICE DATA

Brief Summary

The reliability and adequacy of South Dakota farm price data cannot be stated with any great degree of precision. The statistical measures of reliability in this analysis are based upon the conditions of simple sampling of which the conclusions cannot be stated in absolute terms but must be expressed in probability. The sampling as done by the Division of Crop and Livestock Estimates is known as weighted stratified sampling, a departure from simple sampling, but considered to result in greater representativeness. Recognizing the limitations of the measures in this study, certain conclusions can still be drawn concerning the reliability of South Dakota farm price data.

If the reliability of the farm price data collected is measured in terms of the degree of accuracy desired by the Division of Crop and Livestock Estimates, the price data covering the years 1927 to 1930 are reliable enough for practical purposes even though there were cases that did not meet the desired standard of accuracy. The reliability of the price data in 1931 and 1932, expressed in a relative measure, is found to fall short of the desired standard, but before these data are considered as unreliable the following factor should be considered.

When the reliability of the sample data is measured by an absolute measure of reliability as probable error, rather than by a relative term such as relative probable error, there is comparable reliability from year to year, except for some degree of unreliability introduced in 1931 and 1932 by a slight decrease in size of price samples in those years. This can be explained by the fact that this absolute measure does not relate the probable error to the average price existing at the time as does the relative measure of reliability. The low prices in 1931 and 1932 caused a high coefficient of variation and a high relative probable error, because these measures are standard deviation and probable error expressed as a percentage of the low average price. Standard deviation can not decrease in proportion to the price decline because freight differentials, etc., cause price variations therefore this should not in itself be interpreted as an indication of unreliability due to improper sampling.

There were fewer reports in 1931 and 1932, but if the same number had been available as in the preceding years, the probable error would very likely have been the same. If the size of future samples equals those of the years 1928, 1929, and 1930 the data can be used with the same degree of confidence.

This study indicates that a standard of accuracy expressed in terms of the relative probable error and computed for a period of high prices cannot be used to measure the reliability of price data in a low price level period.

In the special farm price inquiry no evidence of bias was detected on the part of the regular reporters as types of reporters were compared. The average of the prices reported by elevator managers, however, was frequently the lowest average price and only seldom the highest. Bankers and regular reporters, on the other hand, reported low and high about an equal number of times, indicating no bias. Bankers reported on more items per schedule and seemed to be a desirable group from which to draw new reporters. In nearly every case an increase in the number of reports added stability to the sample.

The only seasonal factor found, in the test of seasonal variation in reliability, was that there were fewer reports during the summer months, and that there were fewer reports for a particular commodity during the months when a relatively small amount of it was marketed. A decrease in number of reports usually increased the relative probable error.

In most of the price samples six or seven of the nine crops reporting districts had coefficients of variation lower than the sample for the state, which is a combination of the nine districts. This indicates that for those districts the purpose of stratification had been accomplished; that is, the samples from the separate districts showed more homogeneity than did the sample considered on a state basis. Where the coefficient of variation was high within a district it was usually because little of that particular commodity was produced within that district.

There was considerable spread between the surplus producing area price and the average state price of the same commodity. This indicates that prices computed for separate areas within the state are needed when studies are made which involve the average prices received by farmers in a certain area.

RELIABILITY AND ADEQUACY OF SOUTH DAKOTA FARM PRICE DATA

By
John Muehlbeier*

Purpose of the Study

Farm price data are used extensively by research workers, extension workers, and others in the field of agricultural economics. The purpose of this study is to make available an analysis of the reliability and adequacy of South Dakota farm price data as collected and published by the Division of Crop and Livestock Estimates of the Bureau of Agricultural Economics, United States Department of Agriculture.

Procedure

The price data analyzed in the light of statistical principles related to sampling, were from the records covering the years 1927 to 1932, and the price samples are those of the most important South Dakota agricultural products. In order to limit the study within the time available, the data of two months, for each commodity considered, were studied in each of the calendar years 1928, 1930, and 1932. The months of high and low marketing were studied for each commodity, although, not necessarily, the months of greatest and smallest marketing in each case. Illustrations of size of sample were selected from the remaining three years, 1927, 1929, and 1931.

A special farm price inquiry was conducted to obtain the August 15, and September 15, 1932 prices in order to determine if there was any difference in the reliability of price samples from selected vocational groups as compared with the regular price reporters. This inquiry also made it possible to observe the effect of size of sample on reliability because a large sample was obtained by combining the vocational group samples. The reliability of the large sample was then calculated and compared with the reliability of the small sample of each "sub" group.

Seasonal variation in reliability of farm price data was observed by analyzing price samples of important agricultural products for the year 1932.

The effect of stratification of the sample was observed by the analysis of price samples from crop reporting districts. The year 1930 was chosen for this purpose because it offered a large sample.

The prices of a few farm commodities, as obtained from surplus producing areas, were analyzed to determine their reliability.

* A thesis on this subject was accepted by South Dakota State College in partial fulfillment of the requirements for the degree of Master of Science in January, 1933.

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Definition of Terms

The term "farm price" is the price received by the producer of farm products. It represents the price reporting estimate of all classes and grades of commodities being sold in the local farm market on or about the fifteenth of each month. "The price at the farm of a farm product is practically impossible to learn or obtain. The price which is usually obtained is the one the farmer receives at the local market."¹

Terms used in tables under "marketing," in the tables "low" designates a month with a low volume of marketings of that particular product. "High" designates a month of high marketings.

Arithmetic mean: The arithmetic average of prices in the price sample collected.

S. D.: Standard deviation of the prices reported.

$$S. D. = \frac{\sqrt{Ed^2}}{N}$$

E = Summation

d² = Sum of squares of deviations from arithmetic mean

N = Number of reports

C. V.: Coefficient of variation of prices reported.

$$C. V. = \frac{S. D. \times 100}{M}$$

S. D. = Standard deviation

M. = Arithmetic mean

P. E.: Probable error of the average price. "The probable error defines an interval symmetrically including the computed mean, such that the chances are even that any other sample mean taken at random will fall within it."²

$$P. E. = .6745 \frac{S. D.}{\sqrt{N-1}}$$

S. D. = Standard deviation

N = Number of reports

For all practical purposes

\sqrt{N} can be used in place of

$\sqrt{N-1}$ when the sample has more than 25 reports.

R. P. E.: Relative probable error; the probable error of the arithmetic mean expressed as a percentage of the mean.

¹ Sarle, Charles F., Reliability and Adequacy of Farm Price Data. U. S. Department of Agricultural, Department Bulletin 1480, March, 1927, p. 2.

² Chaddock, R. E., Principles and Methods of Statistics, p. 471. Houghton Mifflin, Boston, New York (etc.).

$$R. P. E. = \frac{P. E. \times 100}{M}$$

P. E. = Probable error

M = Arithmetic mean

4 R. P. E.: Four times the relative probable error. The interval within which there is practical certainty, the odds being 142 to 1, that another sample mean selected under like conditions would fall. "Odds in favor of a variable lying between,

- ‡P. E. = 1 to 1
- ‡2 P. E. = 4.5 to 1
- ‡3 P. E. = 21 to 1
- ‡4 P. E. = 142 to 1
- ‡5 P. E. = 1310 to 1
- ‡6 P. E. = 19200 to 1"³

Weighted mean: The weighted arithmetic average of the district prices reported. To increase the representativeness of the state sample, the district average prices are given weights according to the relative importance of the production of that commodity.

The Problem of Sampling

Statistical measures related to sampling as used in this analysis describe certain characteristics of a sample, and within the limits of the sample they give an accurate description. However, when these results are applied to cases not in the sample limitations to their validity become apparent. Only under certain assumptions and conditions can these statistical measures have validity when inferences drawn from a sample are applied to other samples or to the universe from which the sample is drawn.

The assumptions involved in this inductive process are, a condition of uniformity in nature, and representativeness of the sample of the universe, to which the results are to be applied. It is generally considered essential that to be representative each member of the sample shall be a random⁴ member of the universe⁵.

"When all the conditions of sampling have been observed, it is possible to assign, in advance, limits within which we may expect statistical measures derived from different samples of the same population to fluctuate. This means that we may apply to the population statistical measures secured from the study of a sample not with confidence in their perfect stability, but with fairly definite knowledge of the margin of error involved in thus extending our results."⁵

³ Rietz, H. L. (Editor), *Handbook of Mathematical Statistics*, Houghton Mifflin, Boston, 1924.

⁴ Yule prefers the term "simple" to "random" because more than mere randomness is implied.

⁵ Further detail on the conditions which are assumed in deducing formulas related to the sampling process given in Mills, F. C., *Statistical Methods Applied to Economics and Business*. Henry Holt, N. Y. 1924.

The conditions of simple sampling are seldom met in the field of agricultural economics. A simple sample in the collection of farm price data is difficult to secure and might actually be misleading because of errors in observation, bias, or unrepresentativeness.

The sampling by the Division of Crop and Livestock Estimates, known as weighted stratified sampling departs from the conditions of simple sampling, yet their method ordinarily increases the unrepresentativeness of the sample. This is accomplished by dividing the state into crop reporting districts. These districts are then given weights according to the relative importance of the production of the various commodities. This method tends to decrease the fluctuations of sampling.

The Standard of Accuracy Desired by the Division of Crop and Livestock Estimates as Measured by the Relative Probable Error

The Division of Crop and Livestock Estimates desires as a standard of accuracy a relative probable error not to exceed .50% for all important farm commodities and not to exceed 2.50% for less important commodities⁶. This standard is used in this study to measure the reliability of South Dakota farm price data, but in addition the absolute measure or probable error is used because of the low price level in 1931 and 1932.

With a high degree of variability more reports are necessary to give the sample adequate stability. The reliability of an arithmetic average price as measured by these measures of reliability, depends upon the standard deviation, and upon the number of cases within the sample. When the coefficient of variation is known, the number of reports necessary to obtain the desired relative probable error can be determined by the following formula.

$$\left(\frac{.6745 \times C. V.}{R.P.E.} \right)^2 = N^7$$

C. V.=Coefficient of variation.

R. P. E.=The desired relative probable error.

N=The number of reports required.

These measures apply only to the straight average and not to the weighted average. Stratified random sampling and proper weighting of prices by crop reporting districts aids in obtaining a representative average for the state, even though the probable error of the weighted average would be larger than the probable error of the unweighted average.

⁶ Sarle, C. F., Reliability and Adequacy of Farm Price Data. U. S. D. A. Dep't. Bulletin 1480, March, 1927.

⁷ Field memorandum F. A. 1377. U. S. D. A. Division of Crop and Livestock Estimates. July 9, 1931.

An Appraisal of the Relative Probable Error and the Desired Accuracy of Less Than .50% Relative Probable Error as Measures of Reliability of Farm Price Sample Data

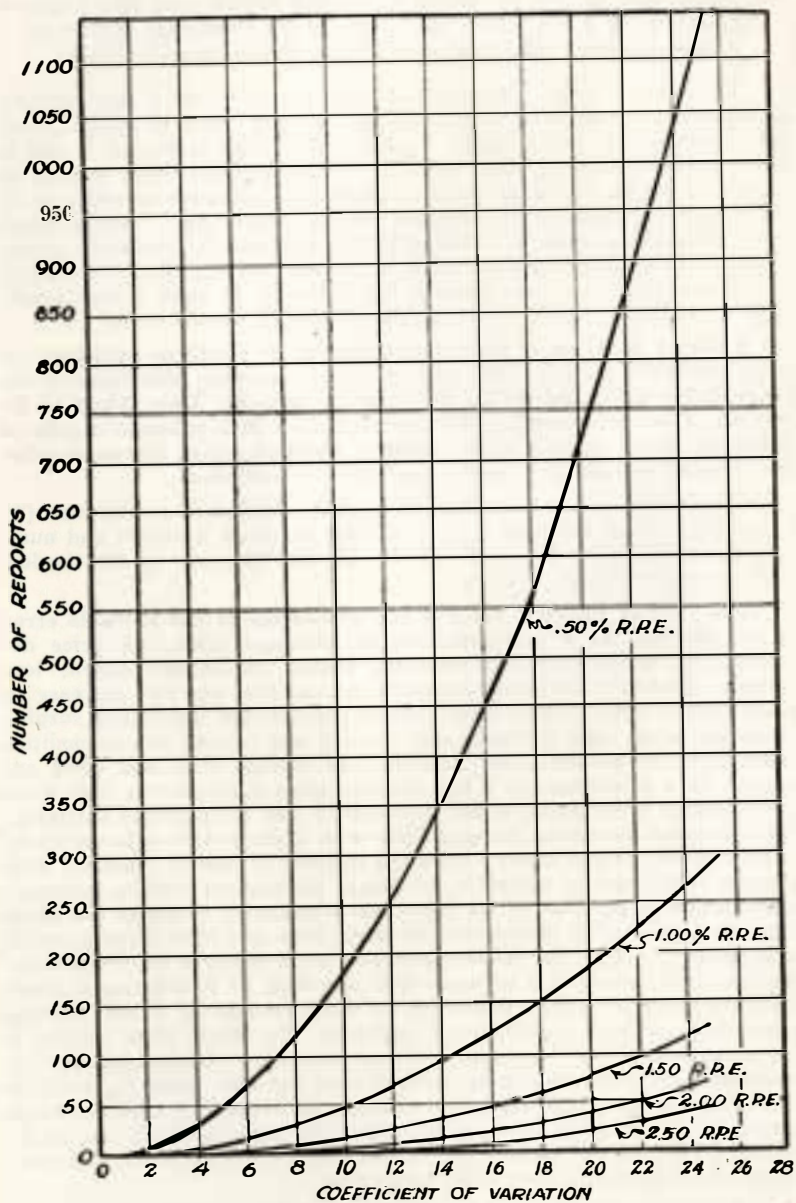
The samples from 1931 and 1932, Tables 1 to 17, show less stability, as measured by the relative probable error, than those of earlier years, but examination of the tables indicates that high variation is not in itself an indication of unreliability. If the universe from which the sample is drawn is not of uniform condition, a sample in order to be representative, must show variation. South Dakota price samples must show variation because of existing deficit and surplus producing areas, freight differentials, and differences in quality, variety, age, or condition of a commodity. It is also possible for a sample to show a high coefficient of variation which is not representative of the universe.

Tables 1 to 17 show that the coefficient of variation increased for most commodities in the 1931 and 1932 price samples, over those of the years 1928, 1929, and 1930; the relative probable error likewise increased. Decreased number of reports, even with a constant degree of variation, would cause a higher relative probable error, but some other factor must explain the higher coefficient of variation.

This variation may, at least in part, be explained as follows: (1) Commodity prices reported tend to cluster at whole numbers and numbers exactly divisible by 5, (Tables 11, 12, and 13); and by (2) the low prices of agricultural products.

The relative probable error is the expression of the probable error of the average as a percentage of the average price. As price decreases this percentage increases and makes the sample appear less reliable. Standard deviation for most commodities can not decrease in proportion to price decline since freight differentials, deficit and surplus producing areas, and differences in quality and variety of commodities cause price variations. This variation can change little and when expressed as a percentage at a low average price must show a high relative probable error which is not unreliability due to improper sampling. That standard deviation changes little with a price decline is shown in Table 1. Table 14 and Chart 1 show the number of reports required, with a given coefficient of variation, to obtain the desired relative probable error, which in the case of an important commodity would be not more than .50%. Table 14 shows that between 2500 and 3000 reports would be necessary to keep the relative probable error down to .50% when the coefficient of variation is between 35% and 40%, as it is for corn, since standard deviation, when expressed as a percentage of a low average price shows a high coefficient of variation. To obtain 2500 returns a list of at least 7500 reporters would be necessary. Considered from a practical viewpoint the cost of clerical help for this would be prohibitive. From a statistical viewpoint there is no assurance that the large sample would actually be more reliable. The sample might merely be enlarged by the addition of reports which did not approximate the average so closely as the first reports included.

This is cited so that no conclusions are drawn from the tables to the effect that the farm price data of the years 1931 and 1932 are not reliable.



Analysis of the Reliability of South Dakota Farm Price Data

Tables 1 to 17 inclusive show the number of reports received from price reporters of the Division of Crop and Livestock Estimates, the standard deviation, coefficient of variation, the probable error of the mean, the relative probable error, and the weighted mean of each sample.

The statistical measures of stability of a sample, as before mentioned, can be relied upon only insofar as the sample, to which they apply, approaches the requirements of a random sample. To facilitate comparison all the data are considered as the result of simple sampling. These measures will give no indication of the amount of bias, or the extent of other errors present, because of deviations from the assumptions of random sampling, and they apply only to the samples analyzed.

The appraisal of the relative probable error of .50% as a measure of reliability indicates the undesirability of comparing price data of low and high price levels by this measure. For this reason the data up to and including 1930 will be analyzed as they meet with the standard of accuracy desired, applicable to a high price level, while the data for 1931 and 1932, a low price level period, will be analyzed to show how their probable error (an absolute measure) compare to that of the earlier years.

Corn price samples have relative probable errors ranging from .40% to .89% for the years 1928, 1929, and 1930 and coefficients of variation from 8.80% to 13.99%. The relative probable error increased to 3.31% in 1932 and standard deviation to 39.88%, mostly because of the low price level, and therefore does not indicate that great a change in degree of unreliability since standard deviation differed little from year to year. Smaller samples in 1932 slightly increased the probable error, which decreases the degree of reliability but not to the extent shown by the relative probable error. Considerable variation can be expected in corn prices because of deficit and surplus producing areas, differences in quality, freight differentials, and because in some months both old and new corn may be reported. Standard deviation ranged from 6.54c to 10.24c. In the earlier years the coefficient of variation was less than 14% while in 1932 it increased to 39.88c. This does not indicate additional variation because the high degree of variation is caused by expressing standard deviation which remained fairly constant as a percentage of the mean during a low price level. The weighted mean differed little from the unweighted mean.

The farm prices for wheat up to August 15, 1930 are those of "all wheat," following which time prices were collected on winter wheat, durum wheat, and spring wheat other than durum. With the exception of the 1927 sample the relative probable error of "all wheat" ranged from .41% to .90%. The probable error in 1932 differed little from that of earlier years. Although the relative probable error was again higher in a few cases smaller sized samples showed less reliability. Wheat reports show less variation than corn reports, indicating that reporters may be better informed of market conditions since wheat is a cash crop. The relative probable error of the 1927 sample was 1.17%, which is difficult to explain unless it can be accounted for as a fluctuation caused by the conditions of sampling.

Oats, like corn, are largely fed locally. This reduces the importance of the crop as a cash crop and there might be a tendency for reporters to be less well informed of market conditions. Most of the relative probable errors range from 1% to 2%, and standard deviation from 9.99% to 36.24% even though the samples were large in most cases.

Barley, rye, and flaxseed samples show considerable more stability than those of oats. For the earlier years the relative probable error approached the desired standard. The probable error of the samples in 1931 and 1932 was comparable to the other years. This indicated comparable reliability even though the relative probable error was high because of the low price level. Rye, flaxseed, and to some extent barley, are cash crops; this would keep the reporter better informed of market conditions. The probable error of barley prices ranged from .22c to .71c while the relative probable error increased from .46% to 2.43% during low prices. Rye was very nearly the same as barley while flaxseed price samples showed more stability. Probable error ranged from \$.005 to \$.012 and relative probable error from .38% to 1.15%. There was comparability between the years with each commodity.

Potato price samples have high variation, caused by differences between deficit and surplus areas and quality. The relative probable error is high, but if potatoes are considered as a less important crop, the reliability of the sample approaches the desired standard.

Reporters seem to be well informed of hog market conditions as indicated by the samples which show a small coefficient of variation, usually less than 15%. Of the eight samples analyzed, four had a coefficient of variation less than 10%. The relative probable error is likewise low, indicating stability. Seven of the eight samples had a probable error of either \$.02 or \$.03.

Cattle prices are more variable than those of hogs; the coefficient of variation is over 15%; and with low prices as high as 35%, resulting in a high relative probable error ranging from \$.09 to \$.15. A wide range in kind and quality of cattle reported upon causes this variation rather than improper sampling.

The lamb price samples have coefficients of variation from 10% to 20%. High variation along with small samples resulted in a high relative probable error, ranging from 1.40% to 2.07%; this is, however, not exceedingly high for a less important commodity.

Farm prices of cows and horses show much variation; this, plus small samples, causes a high relative probable error ranging from .88% to 3.01% for cows and 2.04% to 3.75% for horses. The variation in these prices is the result of differences in age, weight, and condition of cows and horses with which reporters are familiar, and the fact that much of the time only a few of these animals are sold. Standard deviation decreases with price, but not enough to keep the coefficient of variation low.

Butterfat and butter prices have considerable reliability. The relative probable error of butterfat prices ranges from .23% to .61%; for butter prices it is slightly higher, ranging from .66% to 1.30%. Butterfat prices show considerable stability.

Farm prices of chickens and eggs analyzed indicate stability. The relative probable error ranges from .51% to 1.46% for prices of eggs, and .80% to 1.45% for prices of chickens. Prices of chickens being more stable than those for eggs, there is less variation between samples.

Hay and seed prices are highly variable, mostly because of variation in quality and variety. The reports are usually few and consequently a high relative probable error is the result.

This, in general terms, is the summary of the analysis of the farm price samples shown in Tables 1 to 17. To secure a clearer picture of the comparative reliability of the various commodities each table can be studied, keeping in mind the appraisal of the relative probable error of .50% as a measure of reliability during changing prices. Generally speaking, the prices show reliability.

Analysis of the Reliability of the Price Data from the Special Farm Price Inquiry

A sample may be drawn by purely random methods and yet contain too few cases to give significance to statistical measures in terms of probability, or the reports may contain bias. It is advisable to study sample data by selected vocational groups or types of reporters, since the measures of dispersion and probable errors do not indicate causes of fluctuations other than those due to conditions arising from simple sampling. Bias and preventable errors, which statistical measures of reliability do not indicate, may be present in price quotations; these may sometimes be detected by study of the samples by type of reporters. It is also desirable to observe the effect of size of sample on reliability. The following special price inquiry made it possible to accomplish these objectives.

The August 15, and September 15, 1932 farm prices were obtained for this study in cooperation with the South Dakota office of the Division of Crop and Livestock Estimates.

Table 17 shows the classification of the type of reporters for the special price inquiry, the number of regular price schedules mailed, the number returned, and the number of items per schedule reported upon. These schedules consisted of 37 commodities upon which prices are regularly collected. A price schedule is shown on the following page.

Tables 18 to 25 show comparison of size of sample, measures of dispersion, and probable errors of the average prices as obtained by types of reporters.

It is evident from this inquiry, that all four types of reporters returned approximately the same percentage of schedules mailed to them. However, there was a marked difference in the number of items reported upon per schedule. The banks reported on more items per schedule than any other type of reporter, including the regular reporters who reported on the second largest number of items per schedule. Elevators ranked third in average number of items per schedule and creameries fourth. Creameries reported in the main only on dairy products. The study indicated that in the selection of new reporters banks are a desirable group from which to draw new reporters.

There was no evidence of bias by any type of reporter. If there was any bias it was present with all equally, as the fluctuation in average price was only that which can be accounted for by the conditions of sampling, with the exception that bankers and the regular reporters averaged high and low about an equal number of times, while elevator managers usually reported a lower average price. This can hardly be interpreted as distinctly biased but possibly rather as a report on a different quality with which reporters are familiar.

With the exception of five samples out of the total of 189 which were analyzed, all of the large combined samples showed more reliability than the small samples by type of reporters. Many of the large combined samples showed greater reliability than is necessary to meet the desired standard of accuracy. By combined samples is meant the total returns from banks, elevators, creameries, and regular reporters considered as one sample.

Every large combined sample showed greater stability as measured by the relative probable error than the sample obtained from the regular reporters. There were a few, however, where the gain in stability by the large sample was very small.

UNITED STATES DEPARTMENT OF AGRICULTURE

Bureau of Agricultural Economics—Division of Crop and Livestock
Estimates—Washington, D. C.

PRICES PAID TO PRODUCERS

Dear Sir:

The Bureau of Agricultural Economics of the U. S. Department of Agriculture desires to record the average prices paid to producers in each State for various farm products on or about the 15th of each month. For this purpose you are respectfully requested to report on this schedule your estimate of the average prices paid to producers in your locality, about the 15th of this month, for such products as you are familiar with.

IMPORTANT. This schedule should be mailed by the 15th of this month in the accompanying envelope.

Report prices only for such farm products as are produced in your locality and marketed in this month. Do NOT report prices of farm products shipped INTO your market.

Please quote prices in the unit of measure given for each product.

Quotations should be, as near as can be given, the average prices PAID TO PRODUCERS; that is, such a price as, if multiplied by the total quantity bought from the producer, would give the total value of all such purchases.

Do not give the range of prices. GIVE THE AVERAGE PRICES.

RETURN SCHEDULE EVEN THOUGH YOU CAN REPORT FOR ONLY ONE OR TWO COMMODITIES.

Respectfully,

W. F. Callander
Chairman, Crop Reporting Board

Seasonal Variation in Reliability of Farm Price Data

Farm price samples of ten commodities were analyzed in order to determine if there was any variation in reliability from month to month. The year 1932 was selected for this purpose. Tables 26 to 30 show that the number of reports decreased following the first two or three months of the year and increased with August. This factor of varying reports should therefore be considered in drawing conclusions from the tables, as well as changing prices.

The number of reports and the price should be fairly constant each month if the test of seasonal variation in reliability is to be dependable. This was not the case in the 1932 samples because the number of reports decreased after the first few months of the year, increasing again with August, with the price decreasing nearly each month for each commodity. The fact that the reports decreased during the summer months may at least in part be a seasonal factor, since price reporters undoubtedly have less time to report during that period. This could be remedied only by adding new reporters. Decreased reports alone would increase the relative probable error. Usually more reports were received for a particular commodity during high marketing months.

Analysis of Stratified Random Samples Dispersion of price samples within crop reporting districts

Representativeness, and stability of a sample are increased by dividing a state into districts so that each district possesses within its boundaries more homogeneity than the whole area of a state. Where the universe is not uniform a "stratified" sample tends to be more reliable than a random sample although it violates the conditions of random sampling.

Tables 31 to 37 show the effect of stratification of the state for eight leading commodities. The year 1930 was selected because it afforded large samples, but even these were frequently too small to give significance to the measures of dispersion.

A quota of at least twenty-five⁸ reports from each price reporting district is the goal set up by the Division of Crop and Livestock Estimates. As many reports as possible should be obtained even from districts of minor agricultural importance, inasmuch as it is more difficult to obtain a stable average for a district carrying a small weight than for one carrying a large one.

Generally speaking, six or seven out of the nine crop-reporting districts show a lower coefficient of variation than the sample on a state basis. This means that for those districts the purpose of stratification has been accomplished. That is, the districts, if the state is properly stratified, should show more homogeneity within themselves than the state sample. Usually those districts which had higher variation than the state sample were those producing relatively little of that particular crop.

(Name)		(Post Office)		(County)		(Date)				
FIELD CROPS										
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(12)	
CORN, per bu. of 70 lbs. if in ear, or 56 lbs. if shelled	WINTER WHEAT, per bu. of 60 pounds	DURUM WHEAT, per bu. of 60 pounds	SP. WHEAT other than durum, per bushel of 60 pounds	OATS, per bu. of 32 pounds	BARLEY, per bu. of 48 pounds	RYE per bu. of 56 pounds	BUCK- WHEAT, per bu. of 48 pounds	FLAX- SEED, per bu. of 56 pounds	BEANS (dry edible) per 100 pounds	
\$	c	\$	c	\$	c	\$	c	\$	c	
FIELD CROPS		LIVESTOCK								
POTATOES either	(Report unit) in	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
(10)	((11))	HOGS (live weight) per 100 pounds	BEEF CATTLE (live weight) per 100 pounds	VEAL CALVES (live weight) per 100 pounds	SHEEP (live weight) per 100 pounds	LAMBS (live weight) per 100 pounds	MILK COWS. per head	HORSES per head	MULES per head	CHICKENS (live weight) per pound
\$	c	\$	c	\$	c	\$	c	\$	c	\$

LIVESTOCK PRODUCTS						HAY CROPS		
(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
BUTTER, per pound	BUTTER- FAT, per pound	MILK (whole), retail per qt.	MILK (whole), wholesale, per 100 pounds (11.6 gals.)	WOOL (un- washed), per pound	EGGS per doz.	HAY, all (loose), per ton of 2,000 pounds (See note)	HAY, all (baled), per ton of 2,000 pounds (See note)	ALFALFA HAY (loose), per ton of 2,000 pounds
c \$	c \$	c \$	c \$	c \$	c \$	c \$	c \$	c \$

HAY CROPS				SEEDS					FRUIT	
(39)	(40)	(41)	(42)	ALFALFA SEED (Report in either unit)		RED CLOVER SEED	SWEET CLOVER SEED (Report in either unit)		TIMOTHY SEED	(13)
CLOVER HAY (loose), per ton of 2,000 pounds	TIMOTHY HAY (loose), per ton of 2,000 pounds	MIXED CLOVER and TIMOTHY HAY (loose), per ton of 2,000 pounds	PRAIRIE HAY (loose), per ton of 2,000 pounds	(43) Per bu. of 60 lbs.	(44) Per 100 lbs.	(46) Per 100 lbs.	(47) Per bu. of 60 lbs.	(48) Per 100 lbs.	(50) Per 100 lbs.	APPLES per bushel of 48 pounds
c \$	c \$	c \$	c \$	c \$	c \$	c \$	c \$	c \$	c \$	c \$

NOTE.—In answering items 36 and 37, give your estimate of the average price of alfalfa, clover, timothy, mixed, prairie, and all other hay.

Reliability of Farm Price Data Within a Surplus Producing Area

A distinct boundary for a surplus producing area can not be determined for a commodity. However, the designated counties, very largely, comprise this area. Even within these areas much of a product such as corn is consumed locally.

The price samples from surplus producing areas as shown in Tables 38, 39, and 40 are sufficiently reliable for practical purposes. Corn prices have the greatest variation and consequently require more reports.

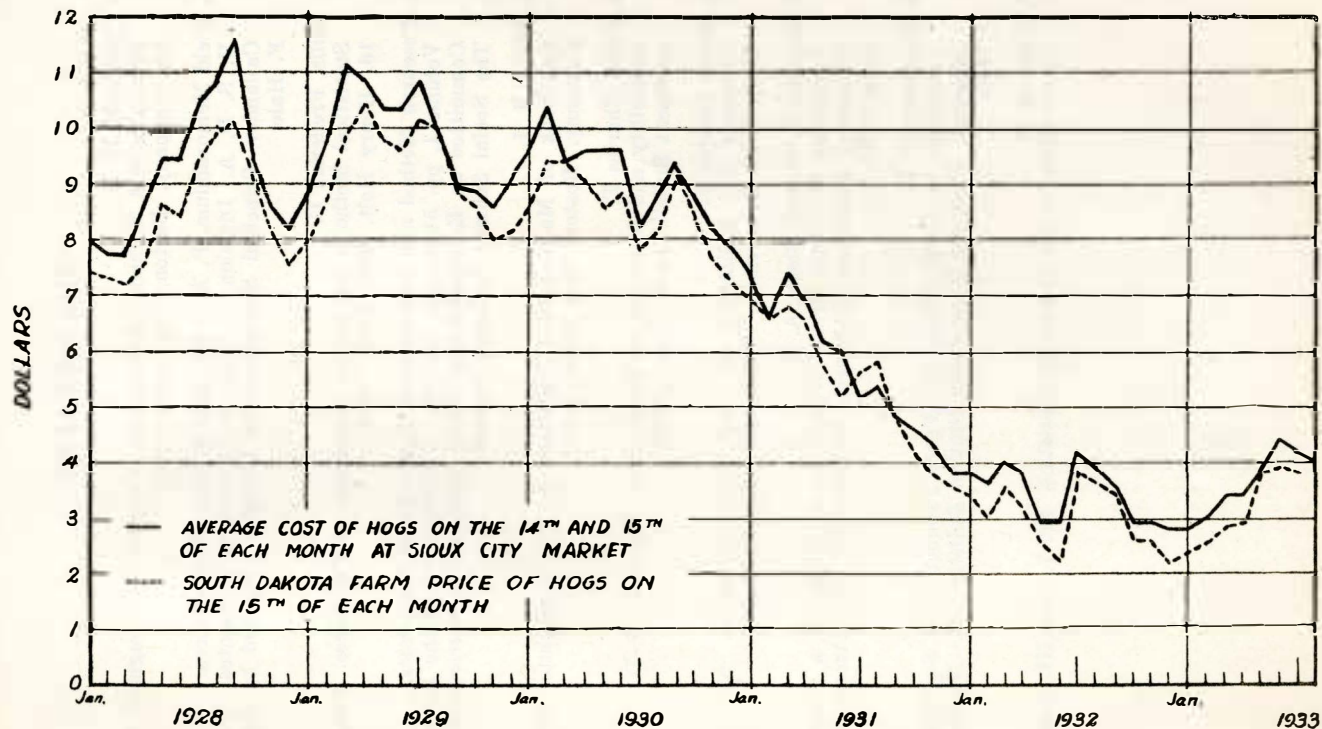
There is considerable spread between the surplus producing area price and the state average price. In December, 1928 the average price of corn within the surplus producing area, District 6 and 9 was 61.9c while the average price for the entire state was 64.2c. The spread between the surplus producing wheat area price and the state average price was nearly 6c in August, 1930. There were also a few cases where there was little difference between the two average prices. Still this indicates the desirability of computing area prices for area studies in which prices paid to producers are concerned.

Comparison of South Dakota Farm Price of Hogs and the Average Cost of Hogs on the Sioux City Market

The Sioux City market draws a large portion of South Dakota hogs, especially from the southeastern part of the state, which is the heaviest hog-producing section. In view of this fact, it would seem that the farm price of hogs in South Dakota would be closely related to the average cost of hogs on the Sioux City market. Since the farm price of hogs is reported as of the 15th of the month, the average cost of hogs at Sioux City on the 14th and 15th of the month should be satisfactory for comparative purposes. Chart 2 shows graphically a close relationship between the fluctuations of the two series. The spread is greatest during a sharp rise in prices and least during a fall in prices, and becomes somewhat less during the years 1931, 1932, and 1933, a low price level period.

On July 15 and August 15, 1931 the farm price was higher than the Sioux City market price. This can probably be explained by the fact that many pigs were sold during that period because of drought conditions, which sales were not reflected on the Sioux City market.

This chart gives additional indication that South Dakota farm prices are reliable.



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TABLE 1.—FARM PRICES OF CORN: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER BUSHEL)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
					(CENTS)	(PERCENT)	(CENTS)	(PERCENT)	(PERCENT)	(CENTS)
1928	SEPT. DEC.	LOW	99	77.75	10.24	13.17	.69	.89	3.56	78.0
		HIGH	120	64.18	8.43	13.13	.52	.81	3.24	64.0
1929	JAN.	HIGH	233	67.08	7.19	10.12	.30	.45	1.80	68.0
1930	SEPT. DEC.	LOW	172	74.31	6.54	8.80	.30	.40	1.60	75.0
		HIGH	194	48.59	7.15	13.99	.35	.49	1.96	49.3
1932	JAN.	HIGH	104	38.30	8.63	22.50	.57	1.49	5.56	
	AUG.	LOW	58	23.22	8.06	34.71	.71	3.06	12.24	23.6
	SEPT.	LOW	66	17.50	6.98	39.88	.58	3.31	13.24	19.2

See page 2 for definition of terms.

TABLE 2.—FARM PRICE OF ALL WHEAT: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER BUSHEL)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
					(DOLLARS)	(PERCENT)	(CENTS)	(PERCENT)	(PERCENT)	(CENTS)
1927	AUG.	HIGH	127	1.20	.24	20.00	.01	1.17	4.68	1.24
1928	MAY	LOW	101	1.31	.12	9.18	.008	.61	2.44	1.32
	AUG.	HIGH	96	.89	.10	11.44	.007	.90	3.60	.89
1929	JAN.	LOW	258	.90	.09	10.53	.004	.45	1.80	.88
	AUG.	HIGH	163	1.08	.08	7.68	.004	.41	1.64	1.08

See page 2 for definition of terms.

TABLE 3.—FARM PRICES OF SPRING WHEAT OTHER THAN DURUM: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER BUSHEL)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
					(CENTS)	(PERCENT)	(CENTS)	(PERCENT)	(PERCENT)	(CENTS)
1930	MAY	LOW	193	80.44	4.95	6.15	.24	.30	1.20	82.0
	AUG.	HIGH	137	68.06	7.99	11.74	.46	.67	2.68	69.0
1931	AUG.	HIGH	138	41.77	5.59	13.38	.32	.76	3.04	42.4
1932	MAY	LOW	65	45.75	5.89	12.87	.43	.91	3.76	
	AUG.	HIGH	93	36.73	4.17	11.03	.28	.76	3.04	37.0
	SEPT.	HIGH	100	36.38	4.17	11.46	.28	.78	3.12	36.7

See page 2 for definition of terms.

TABLE 4.—FARM PRICES OF DURUM AND WINTER WHEAT: MEASURES OF DISPERSION AND PROBABLE ERRORS
(PER BUSHEL)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
					(CENTS)	(PERCENT)	(CENTS)	(PERCENT)	(PERCENT)	(CENTS)
DURUM WHEAT										
1930	MAY	LOW	176	66.91	6.09	9.10	.31	.46	1.84	68.0
	AUG.	HIGH	121	58.37	6.38	10.93	.38	.65	2.60	60.0
1932	MAY	LOW	55	36.03	6.63	18.40	.60	1.67	6.68	35.3
	AUG.	HIGH	69	27.38	4.26	15.56	.34	1.24	4.96	28.2
	SEPT.	HIGH	81	26.00	4.10	15.77	.31	1.19	4.76	25.6
WINTER WHEAT										
1932	JAN.	LOW	56	47.00	6.00	13.99	.60	1.26	5.04	27.0
	AUG.	HIGH	57	34.00	4.00	13.28	.40	1.18	4.72	31.0
	SEPT.	HIGH	68	33.00	4.00	13.38	.40	1.08	4.32	31.0

See page 2 for definition of terms.

TABLE 5.—FARM PRICES OF OATS: MEASURES OF DISPERSION. AND PROBABLE ERRORS
(PER BUSHEL)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
					(CENTS)	(PERCENT)	(CENTS)	(PERCENT)	(PERCENT)	(CENTS)
1927	AUG.	HIGH	132	36.53	5.02	13.74	.29	.79	3.16	36.0
1928	MAY	LOW	114	50.88	9.14	19.96	.58	1.13	4.52	51.6
	AUG.	HIGH	99	28.59	5.58	19.52	.38	1.33	5.32	28.4
1929	JAN.	LOW	283	36.44	3.64	9.99	.15	.41	1.64	36.0
	AUG.	HIGH	168	34.75	7.74	22.27	.40	1.15	4.60	34.0
1930	MAY	LOW	238	31.42	4.59	14.61	.20	.64	2.56	30.5
	AUG.	HIGH	159	27.77	4.88	17.57	.26	.94	3.76	
1931	AUG.	HIGH	162	18.94	6.04	31.89	.32	1.68	6.72	18.0
1932	MAY	LOW	80	21.66	7.85	36.24	.59	2.72	10.88	21.5
	AUG.	HIGH	109	9.49	2.32	24.45	.15	1.58	6.37	9.4
	SEPT.	HIGH	120	9.42	2.42	25.69	.15	1.59	6.36	9.4

See page 2 for definition of terms.

TABLE 6.—FARM PRICES OF BARLEY: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER BUSHEL)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
					(CENTS)	(PERCENT)	(CENTS)	(PERCENT)	(PERCENT)	(CENTS)
1927	AUG.	HIGH	120	56.24	6.25	11.05	.38	.67	2.68	57.0
1928	MAY	LOW	97	76.92	5.08	6.60	.35	.46	1.84	77.1
	AUG.	HIGH	90	51.09	4.73	9.26	.34	.67	2.68	50.3
1929	JAN.	LOW	253	49.40	5.16	10.44	.22	.45	1.80	48.0
	AUG.	HIGH	169	47.77	4.27	8.94	.22	.46	1.84	48.0
1930	MAY	LOW	229	42.12	12.88	30.58	.57	1.35	5.40	41.3
	AUG.	HIGH	162	37.43	5.51	14.72	.29	.77	3.08	
1931	AUG.	HIGH	159	26.86	7.13	26.54	.38	1.41	5.64	24.3
1932	MAY	LOW	76	29.19	9.21	31.55	.71	2.43	9.72	27.2
	AUG.	HIGH	104	15.22	3.30	21.68	.22	1.44	5.76	14.7
	SEPT.	HIGH	113	14.28	3.34	23.39	.21	1.47	5.88	14.0

See page 2 for definition of terms.

TABLE 7.—FARM PRICES OF RYE: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER BUSHEL)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
			(DOLLARS)	(DOLLARS)	(PERCENT)	(DOLLARS)	(PERCENT)	(PERCENT)	(DOLLARS)	
1928	MAY	LOW	56	1.09	.08	7.06	.007	.60	2.40	1.09
	AUG.	HIGH	58	.74	.04	5.58	.004	.49	1.96	.74
1930	MAY	LOW	124	.48	.05	10.41	.003	.71	2.84	.47
	AUG.	HIGH	122	.42	.05	11.90	.003	.78	3.12	
1932	MAY	LOW	48	.27	.07	26.61	.007	2.55	10.20	.26
	AUG.	HIGH	91	.17	.04	21.62	.003	1.52	6.08	.16
	SEPT.	HIGH	93	.18	.03	15.50	.002	1.08	4.32	.17

See page 2 for definition of terms.

TABLE 8.—FARM PRICES OF FLAXSEED: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER BUSHEL)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
			(DOLLARS)	(DOLLARS)	(PERCENT)	(DOLLARS)	(PERCENT)	(PERCENT)	(DOLLARS)	
1928	MAY	LOW	70	2.11	.10	4.74	.008	.38	1.52	2.10
	OCT.	HIGH	87	1.94	.10	5.15	.007	.37	1.48	1.94
1930	MAY	LOW	142	2.51	.30	11.95	.017	.68	2.72	2.47
	OCT.	HIGH	138	1.48	.10	6.75	.006	.39	1.56	
1932	MAY	LOW	52	1.04	.14	13.46	.012	1.15	4.60	1.05
	AUG.	HIGH	64	.76	.07	9.30	.006	.78	3.12	.75
	SEPT.	HIGH	68	.85	.06	6.51	.005	.53	2.12	.84

See page 2 for definition of terms.

TABLE 9.—FARM PRICES OF POTATOES: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER BUSHEL)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
			(DOLLARS)	(DOLLARS)	(PERCENT)	(DOLLARS)	(PERCENT)	(PERCENT)	(DOLLARS)	
1928	MAY	LOW	79	.74	.24	32.39	.02	2.42	9.68	.69
	OCT.	HIGH	89	.47	.19	40.64	.01	2.97	11.88	.40
1930	MAY	LOW	155	1.53	.36	23.53	.02	1.27	5.08	1.40
	OCT.	HIGH	157	1.16	.25	21.55	.01	1.16	4.64	
1932	MAY	LOW	38	.56	.23	41.86	.02	4.58	18.32	.52
	SEPT.	HIGH	67	.38	.18	46.79	.01	3.84	15.36	.35

See page 2 for definition of terms.

TABLE 10.—FARM PRICES OF HOGS: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER 100 POUNDS)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
			(DOLLARS)	(DOLLARS)	(PER CENT)	(DOLLARS)	(PERCENT)	(PERCENT)	(DOLLARS)	
1928	JAN.	HIGH	124	7.36	.47	6.38	.03	.39	1.56	7.41
	OCT.	LOW	86	9.22	1.35	14.64	.10	1.06	4.24	9.25
1930	JAN.	HIGH	223	8.56	.50	5.84	.02	.23	.92	8.58
	MAY	LOW	214	8.72	.56	6.42	.03	.30	1.20	8.78
	OCT.	LOW	174	9.30	.71	8.55	.03	.42	1.68	8.38
1932	JAN.	HIGH	138	3.19	.32	10.03	.02	.63	1.92	3.20
	SEPT.	LOW	90	3.31	.36	10.88	.03	.76	3.04	3.32
	OCT.	LOW	111	2.62	.35	13.36	.02	.76	3.04	

See page 2 for definition of terms.

TABLE 11.—FARM PRICES OF CATTLE: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER 100 POUNDS)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
				(DOLLARS)	(DOLLARS)	(PERCENT)	(DOLLARS)	(PERCENT)	(PERCENT)	(DOLLARS)
1928	MAY	HIGH	68	9.73	1.73	17.78	.14	1.44	5.76	10.20
	OCT.	LOW	61	10.40	1.73	16.63	.15	1.44	5.76	10.69
1930	MAY	HIGH	140	9.16	1.71	18.67	.10	1.09	4.36	9.17
	OCT.	LOW	122	7.27	1.94	26.68	.12	1.65	6.60	7.34
1932	MAY	HIGH	51	4.05	1.00	24.69	.09	2.22	8.88	4.12
	OCT.	LOW	72	3.88	1.38	35.57	.11	2.83	11.32	

See page 2 for definition of terms.

TABLE 12.—FARM PRICES OF LAMBS: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER 100 POUNDS)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
				(DOLLARS)	(DOLLARS)	(PERCENT)	(DOLLARS)	(PERCENT)	(PERCENT)	(DOLLARS)
1928	MAY	LOW	22	13.70	1.55	11.31	.22	1.60	6.40	13.70
	OCT.	HIGH	35	11.96	1.71	14.30	.19	1.59	6.36	11.82
1930	MAY	LOW	66	8.80	2.02	22.95	.17	1.93	7.72	8.47
	OCT.	HIGH	73	6.12	1.08	17.65	.08	1.40	5.60	5.77
1932	MAY	LOW	28	4.55	.75	16.48	.09	1.97	7.88	4.49
	SEPT.	HIGH	32	4.34	.73	16.82	.09	2.07	8.28	4.08
	OCT.	HIGH	53	3.87	.69	17.83	.06	1.55	6.20	

See page 2 for definition of terms.

TABLE 13.—FARM PRICES OF COWS: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER HEAD)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
			(DOLLARS)	(DOLLARS)	(PERCENT)	(DOLLARS)	(PERCENT)	(PERCENT)	(DOLLARS)	
1928	MAY OCT.	LOW	86	78.24	14.28	18.25	1.04	1.33	5.32	79.30
		HIGH	85	88.02	16.25	19.14	1.23	1.40	5.60	88.88
1930	MAY OCT.	LOW	173	74.77	12.81	17.13	.66	.88	3.52	75.71
		HIGH	133	59.25	14.34	24.14	.84	1.42	5.68	61.04
1932	MAY SEPT. OCT.	LOW	60	33.50	11.60	34.63	1.01	3.01	12.04	32.7
		HIGH	51	32.02	7.32	22.86	.69	2.15	8.60	32.3
		HIGH	74	27.32	7.32	27.52	.59	2.16	8.64	

See page 2 for definition of terms.

TABLE 14.—FARM PRICES OF HORSES: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER HEAD)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
			(DOLLARS)	(DOLLARS)	(PERCENT)	(DOLLARS)	(PERCENT)	(PERCENT)	(DOLLARS)	
1928	MAR. OCT.	HIGH	84	78.76	30.27	38.43	2.22	2.82	11.28	75.40
		LOW	72	69.64	26.50	38.05	2.11	3.03	12.12	68.27
1930	MAR. OCT.	HIGH	162	66.69	25.37	38.34	1.36	2.04	8.16	64.71
		LOW	104	57.94	21.23	36.64	1.40	2.42	9.68	53.82
1932	MAR. OCT. SEPT.	HIGH	76	52.61	19.55	37.16	1.51	2.87	11.48	49.90
		LOW	67	41.88	18.98	42.29	1.56	3.47	13.88	
		LOW	41	46.15	16.43	35.60	1.73	3.75	15.00	48.40

See page 2 for definition of terms.

TABLE 15.—FARM PRICES OF BUTTERFAT: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER POUND)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
				(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)	(PERCENT)	(CENTS)
1928	JUNE	HIGH	113	43.29	2.06	4.76	.13	.30	1.20	43.3
	NOV.	LOW	141	46.87	2.02	4.31	.11	.23	.92	46.8
1930	JUNE	HIGH	194	28.73	2.16	7.52	.10	.35	1.40	28.9
	NOV.	LOW	184	33.82	3.02	8.93	.15	.44	1.76	33.9
1932	JUNE	HIGH	108	13.22	1.26	9.53	.08	.61	2.44	13.0
	OCT.	LOW	124	17.17	1.52	8.85	.09	.52	2.08	

See page 2 for definition of terms.

TABLE 16.—FARM PRICES OF BUTTER: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER POUND)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
				(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)	(PERCENT)	(CENTS)
1928	NOV.	LOW	114	47.17	4.90	10.39	.31	.66	2.64	47.4
1930	JUNE	HIGH	138	33.20	4.83	14.55	.28	.84	3.36	33.2
	NOV.	LOW	134	36.57	4.43	12.11	.26	.71	2.84	37.0
1932	JULY	HIGH	60	16.73	2.96	17.69	.23	1.30	5.20	16.7

See page 2 for definition of terms.

TABLE 17.—FARM PRICES OF CHICKENS: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER POUND)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
				(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)	(PERCENT)	(CENTS)
1928	MAY	LOW	74	17.26	2.54	14.72	.20	1.15	4.60	17.6
	DEC.	HIGH	103	18.73	2.42	12.92	.16	.85	3.40	18.9
1930	MAY	LOW	170	16.25	2.50	15.38	.13	.80	3.20	16.6
	DEC.	HIGH	159	11.83	2.05	17.33	.11	.93	3.72	12.0
1932	MAY	LOW	78	9.69	1.85	19.09	.14	1.45	5.80	9.7
	OCT.	*HIGH	106	8.07	1.36	16.85	.09	1.11	4.44	

*DECEMBER MONTH NOT AVAILABLE

See page 2 for definition of terms.

TABLE 18.—FARM PRICES OF EGGS: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER DOZEN)

YEAR	MONTH	MARKET- ING	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
				(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)	(PERCENT)	(CENTS)
1928	MAY	HIGH	117	23.96	2.21	9.23	.14	.58	2.32	24.0
	DEC.	LOW	117	36.13	5.26	14.56	.33	.91	3.64	36.1
1930	MAY	HIGH	172	17.47	1.81	10.36	.09	.51	2.04	17.5
	DEC.	LOW	137	21.93	5.47	24.94	.32	1.46	5.84	21.9
1932	MAY	HIGH	108	8.55	1.47	17.19	.09	1.05	4.20	8.5

See page 2 for definition of terms.

TABLE 19.—FARM PRICES OF HAY: SELECTED ILLUSTRATIONS OF SIZE OF SAMPLE, MEASURES OF DISPERSION, AND PROBABLE ERRORS (PER TON)*

COMMODITY, DATE	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
		(DOLLARS)	(DOLLARS)	(PERCENT)	(DOLLARS)	(PERCENT)	(PERCENT)	(DOLLARS)
HAY, JAN. 15, 1930	104	7.76	2.19	28.22	.14	1.80	7.20	
HAY, DEC. 15, 1930	66	7.02	2.01	28.63	.17	2.42	9.68	6.78
HAY, JAN. 15, 1932	46	8.17	2.63	32.19	.26	3.18	12.72	8.45
ALFALFA, DEC. 15, 1930	80	9.64	2.35	24.37	.18	1.87	7.48	
ALFALFA, JAN. 15, 1932	57	11.48	2.96	25.78	.26	2.27	9.08	
HAY, MAY 15, 1928	38	6.33	1.74	27.49	.20	3.16	12.64	6.48
HAY, DEC. 15, 1928	36	7.72	2.13	27.59	.24	3.11	12.44	7.92
ALFALFA, MAY 15, 1928	36	9.06	2.49	27.48	.28	3.09	12.36	

*(LOOSE)

See page 2 for definition of terms.

TABLE 20.—FARM PRICE OF ALFALFA SEED: MEASURES OF DISPERSION, AND PROBABLE ERRORS
(PER 100 POUNDS)

DATE	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.	4 R.P.E.	WEIGHTED MEAN
		(DOLLARS)	(DOLLARS)	(PERCENT)	(DOLLARS)	(PERCENT)	(PERCENT)	(DOLLARS)
MAR. 15, 1930	29	24.59	5.68	23.10	.71	2.89	11.56	
MAR. 15, 1932	17	18.62	3.87	20.82	.63	4.62	18.48	

See page 2 for definition of terms.

TABLE 21.—DISTRIBUTION OF REPLIES: FARM PRICES OF SPRING WHEAT OTHER THAN DURUM, SEPT. 15, 1932*

CENTS PER BUSHEL	DISTRICT									STATES
	1	2	3	4	5	6	7	8	9	
50										
49										
48										
47			2							2
46										
45			1			1				2
44						1				1
43			1						2	3
42		2	11		1				2	16
41	1	3	4		3	2			1	14
40	1	11	17		8	4			11	52
39	2	2	2		3	1			1	11
38	1	5	4		2	8		1	5	26
37	1	7	3		3	4			3	21
36	4	9	2		6	1	1		4	27
35	8	10	3	3	3	4		5	6	42
34	1	3	1	2	1		1	1	2	12
33	3	2	1	1				5		12
32	5			6	1	8	1		1	19
31	1	2		4				2		7
30				4			1	5	1	11
29	1									1
28						1	1	1		3
27						1	1	1		3
26						2		1		3
25								1		1
24						1	1			2
23										
22						1				1
6										
TOTAL	29	56	53	20	31	35	7	23	39	298
AVERAGES, CENTS PER BUSHEL										
	35	37	40	32	38	36	50	32	38	36.4

*Taken from special price inquiry.

TABLE 22.—DISTRIBUTION OF REPLIES: FARM PRICES OF CORN, DEC. 15, 1930

CENTS PER BUSHEL	DISTRICT									TOTAL
	1	2	3	4	5	6	7	8	9	
70				2						2
69										
68										
67				1						1
66										
65				2					3	5
64									1	1
63						1			2	3
62									2	2
61										
60				1		1			4	6
59										
58										
57										
56				1					1	2
55		2			1	2			5	10
54						2				2
53						2			1	3
52			1		1	3			2	7
51			2			3				5
50	3	2	3	2	7	12	1	1	4	37
49		1	3			3				7
48		2	3		3	7				15
47			2		4	4		2		12
46		1	1		1	1		1		5
45		8	6		5	4		3		26
44	1	3	1		1					6
43			2		1	1				4
42		1	3		1	1		1		7
41			1	1						2
40		6	1	1	2		1	4	1	18
39										
38					1			1		2
37										
36										
35										
34										
33										
32		1				1				2
31						1				1
30								1		1
TOTAL	4	27	29	13	28	49	3	15	26	195
AVERAGES, CENTS PER BUSHEL										
	48	45	56	55	47	49	40	44	57	48.6

TABLE 23.—DISTRIBUTION OF REPLIES: FARM PRICES OF CORN, SEPT. 15, 1932*

CENTS PER BUSHEL	1	2	3	4	DISTRICT 5	6	7	8	9	STATE
46				1						1
45										
44										
43										
42										
41										
40										
39										
38										
37										
36										
35		1			1					2
34									1	1
33									1	1
32										
31			1	1		1				
30									2	5
29										
28									1	1
27										
26										
25	1		2			3			6	12
24						1				1
23						1			1	2
22			1			2			1	4
21					2					2
20		5	3	1	2	6		4	11	32
19										
18			1		1	1			2	5
17		1	2						1	4
16			2		1	2				5
15	1	3	1		1	8		2	5	21
14		1	3			3			3	10
13		3	2			1		1	2	1
12	1	3	4		1	1			1	11
11		3				2				5
10	1	4	1	1	1					8
9		6	1					1		4
8		2	1			1				4
7	1	1								2
6	1									1
5			1							1
TOTAL	6	33	26	4	10	33		8	38	195
AVERAGE, CENTS PER BUSHEL										
	12	13	16	26	19	18		16	21	17.1

*Taken from special price inquiry.

TABLE 24.—NUMBER OF OBSERVATIONS AS RELATED TO COEFFICIENT OF VARIATION AND RELATIVE PROBABLE ERROR OF THE MEAN IN SAMPLES WITH NORMAL DISTRIBUTION

COEFFICIENT OF VARIATION	RELATIVE PROBABLE ERROR OF THE MEAN—PERCENT				
	0.5	1.0	1.5	2.0	2.5
PERCENT	NUMBER OF OBSERVATIONS				
3	16	4	2	1	1
4	29	7	3	2	1
5	46	11	5	3	2
6	66	16	7	4	3
7	89	22	10	6	4
8	116	29	13	7	5
9	147	37	16	9	6
10	182	46	20	11	7
11	220	55	24	14	9
12	262	66	29	16	10
13	308	77	34	19	12
14	357	89	40	22	14
15	409	102	46	26	16
16	466	116	52	29	19
17	526	132	58	33	21
18	590	147	66	37	24
19	657	164	73	41	26
20	728	182	81	46	29
21	802	201	89	50	32
22	881	220	98	55	35
23	963	241	107	60	38
24	1048	262	116	66	42
25	1137	284	126	71	46
30	1638	409	182	102	66
35	2229	557	248	139	89
40	2912	728	324	182	116

TABLE 25.—CLASSIFICATION OF REGULAR SOUTH DAKOTA REPORTERS

CLASSIFICATION OF REPORTERS	NUMBER OF REPORTERS	PERCENTAGE
COUNTRY MILLS AND ELEVATORS	27	15.5
CREAMERIES	6	3.4
LIVESTOCK BUYERS	3	1.7
COUNTRY MERCHANTS AND PRODUCE BUYERS	33	19.0
FRUIT BUYERS	0	
CO-OPERATIVE MARKETING ASSOCIATIONS	0	
COUNTRY BANKERS	9	5.2
FARMERS, STOCKMEN, AND RETIRED FARMERS	81	46.6
MISCELLANEOUS	15	8.6
TOTAL	174	

This inquiry was conducted in Aug., 1932 by the South Dakota office of the Division of Crop and Livestock Estimates. Those reporters not returning a classification schedule in August were mailed another schedule in September. The same was repeated in October. Even with these three attempts only 174 of the 288 reporters answered. The classification of these 174 is given above, there is no indication into what classification the 114 not reporting may fall. It may be fair, however, to assume that many of them are farmers.

TABLE 26.—CLASSIFICATION OF REGULAR REPORTERS OF THE DIVISION OF CROP AND LIVESTOCK ESTIMATES

CLASSIFICATION OF REPORTERS	PERCENTAGE
COUNTRY MILLS AND ELEVATORS	10
CREAMERIES	2
LIVESTOCK BUYERS	3
COUNTRY MERCHANTS AND PRODUCE DEALERS	20
FRUIT BUYERS	1
GRAIN MARKETING COOPERATIVES	2
COUNTRY BANKERS	3
FARMERS	54
OTHERS	5

This record is based on returns to the occupation schedule sent out in Aug., 1932 from the following States: Pennsylvania, Ohio, Indiana, Michigan, Iowa, North Dakota, South Dakota, Kansas, Alabama, Mississippi, Louisiana, Idaho, New Mexico, Arizona, Utah, Nevada, and Oregon.

Four occupations represented by less than one-half of 1% were not listed in the above table.

It is the desire of the Division to keep the number of farmers at a minimum and to build up the list with dealers and buyers of farm products when new reporters are needed.

TABLE 27.—CLASSIFICATION OF SPECIAL PRICE INQUIRY REPORTERS

TYPE OF REPORTER	SCHEDULES MAILED	SCHEDULES RETURNED	PERCENT RETURNED	NUMBER OF ITEMS PER SCHEDULE
AUG. 15, 1932				
CREAMERIES	123	40	33	3.9
ELEVATORS	418	128	31	8.8
BANKS	261	103	39	15.1
REGULAR REPORTERS	288	113	39)	11.7
NEW REPORTERS	77	20	26)	
TOTAL	1167	404	34.6	
SEPT. 15, 1932				
CREAMERY	116	41	35	4.6
ELEVATORS	425	135	32	9.8
BANKS	255	88	35	17.0
REGULAR REPORTERS	288	122	42)	
NEW REPORTERS	77	12	16)	12.9
NEW REPORTERS IN AUG.	18	7	39)	
TOTAL	1179	405	34.3	

SPECIAL PRICE INQUIRY

TABLE 28.—FARM PRICES OF CORN BY TYPE OF REPORTER: MEASURES OF DISPERSION AND PROBABLE ERRORS

(PER BUSHEL)

TYPE OF REPORTER	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
AUGUST 15, 1932						
CREAMERIES	1					
ELEVATORS	43	22.35	5.79	25.91	.59	2.64
BANKS	47	23.30	6.12	26.26	.60	2.57
REGULAR	58	23.22	8.06	34.71	.71	3.08
COMBINED	149	22.99	6.89	29.97	.38	1.65
SEPTEMBER 15, 1932						
CREAMERIES	3					
ELEVATORS	44	15.80	5.90	37.34	.60	3.80
BANKS	45	17.60	6.36	36.14	.64	3.63
REGULAR	66	17.50	6.98	39.88	.58	3.31
COMBINED	158	17.12	6.55	38.26	.35	2.04

See page 2 for definition of terms.

SPECIAL PRICE INQUIRY

TABLE 29.—FARM PRICES OF SPRING WHEAT OTHER THAN DURUM BY TYPE OF REPORTER: MEASURES OF DISPERSION AND PROBABLE ERRORS

(PER BUSHEL)

TYPE OF REPORTER	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
AUG. 15, 1932						
CREAMERIES	3					
ELEVATORS	111	36.07	2.94	8.15	.19	.53
BANKS	75	36.59	4.29	11.73	.33	.90
REGULAR	93	36.72	4.05	11.03	.28	.76
COMBINED	282	36.40	3.77	10.36	.15	.41
SEPT. 15, 1932						
CREAMERIES	6					
ELEVATORS	117	36.94	3.80	10.29	.24	.65
BANKS	70	35.87	4.68	13.05	.38	1.06
REGULAR	100	36.38	4.17	11.46	.28	.78
COMBINED	293	36.44	4.19	11.50	.16	.44

See page 2 for definition of terms.

SPECIAL PRICE INQUIRY

TABLE 30.—FARM PRICES OF OATS BY TYPE OF REPORTER: MEASURES OF
DISPERSION AND PROBABLE ERRORS
(PER BUSHEL)

TYPE OF REPORTER	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
AUG. 15, 1932						
CREAMERIES	5					
ELEVATORS	112	9.21	2.14	23.34	.14	1.52
BANKS	103	9.23	1.76	19.07	.12	1.30
REGULAR	109	9.49	2.32	24.45	.15	1.58
COMBINED	329	9.31	2.09	22.45	.08	.84
SEPT. 15, 1932						
CREAMERIES	6					
ELEVATORS	123	9.17	2.20	23.99	.13	1.42
BANKS	82	9.29	2.90	31.21	.22	2.37
REGULAR	120	9.42	2.42	25.69	.15	1.59
COMBINED	331	9.30	2.50	26.88	.09	.97

See page 2 for definition of terms.

SPECIAL PRICE INQUIRY

TABLE 31.—FARM PRICES OF FLAXSEED BY TYPE OF REPORTER: MEASURES
OF DISPERSION AND PROBABLE ERRORS
(PER BUSHEL)

TYPE OF REPORTER	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
AUG. 15, 1932						
CREAMERIES	1					
ELEVATORS	75	74.37	4.59	6.17	.36	.48
BANKS	50	74.74	2.13	2.85	.20	.26
REGULAR	64	75.93	7.06	9.30	.59	.78
COMBINED	190	75.00	6.07	8.09	.30	.40
SEPT. 15, 1932						
CREAMERIES	4					
ELEVATORS	95	84.23	6.31	7.49	.44	.52
BANKS	40	82.30	7.69	9.29	.82	.99
REGULAR	68	85.54	5.57	6.51	.45	.53
COMBINED	207	84.46	6.42	7.60	.30	.35

See page 2 for definition of terms.

SPECIAL PRICE INQUIRY

TABLE 32.—FARM PRICES OF HOGS BY TYPE OF REPORTER: MEASURES OF DISPERSION AND PROBABLE ERRORS

(PER 100 POUNDS)

TYPE OF REPORTER	NUMBER OF REPORTS	ARITH-METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(DOL.)	(DOL.)	(PCT.)	(DOL.)	(PCT.)
AUG. 15, 1932						
CREAMERIES	2					
ELEVATORS	36	3.55	.44	12.28	.05	1.38
BANKS	82	3.62	.56	15.46	.04	1.10
REGULAR	79	3.58	.30	8.38	.02	.62
COMBINED	199	3.60	.41	11.40	.02	.56
SEPT. 15, 1932						
CREAMERIES	5					
ELEVATORS	38	3.22	.36	11.18	.04	1.22
BANKS	81	3.34	.36	10.77	.03	.80
REGULAR	90	3.31	.36	10.88	.03	.76
COMBINED	214	3.31	.39	11.78	.02	.80

See page 2 for definition of terms.

SPECIAL PRICE INQUIRY

TABLE 33.—FARM PRICES OF BEEF CATTLE BY TYPE OF REPORTER: MEASURES OF DISPERSION AND PROBABLE ERRORS

(PER 100 POUNDS)

TYPE OF REPORTER	NUMBER OF REPORTS	ARITH-METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(DOL.)	(DOL.)	(PCT.)	(DOL.)	(PCT.)
AUG. 15, 1932						
CREAMERIES	0					
ELEVATORS	21	4.31	1.19	27.61	.17	3.94
BANKS	59	4.76	1.37	28.78	.12	2.52
REGULAR	51	4.61	1.64	35.57	.11	2.36
COMBINED	131	4.63	1.46	31.53	.08	1.84
SEPT. 15, 1932						
CREAMERIES	3					
ELEVATORS	23	4.07	1.67	41.03	.23	5.60
BANKS	65	4.43	1.38	31.15	.12	2.71
REGULAR	55	4.62	1.59	34.44	.14	3.03
COMBINED	148	4.43	1.50	33.86	.08	1.80

See page 2 for definition of terms.

SPECIAL PRICE INQUIRY

TABLE 34.—FARM PRICES OF EGGS BY TYPE OF REPORTER: MEASURES OF DISPERSION AND PROBABLE ERRORS

(PER DOZEN)

TYPE OF REPORTER	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
AUG. 15, 1932						
CREAMERIES	16	11.44	1.78	15.56	.30	2.62
ELEVATORS	30	10.17	1.63	16.03	.20	1.97
BANKS	80	11.70	2.19	18.72	.16	1.37
REGULAR	94	11.44	1.93	16.87	.13	1.14
COMBINED	220	11.36	2.05	18.05	.09	.82
SEPT. 15, 1932						
CREAMERIES	14	12.57	1.19	9.47	.21	1.70
ELEVATORS	35	12.57	1.82	10.74	.15	1.19
BANKS	60	12.35	1.96	15.87	.17	1.38
REGULAR	95	12.86	1.53	11.90	.11	.85
COMBINED	204	12.64	1.64	12.97	.08	.61

See page 2 for definition of terms.

SPECIAL PRICE INQUIRY

TABLE 35.—FARM PRICES OF BUTTERFAT BY TYPE OF REPORTER: MEASURES OF DISPERSION AND PROBABLE ERRORS

(PER POUND)

TYPE OF REPORTER	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
AUG. 15, 1932						
CREAMERIES	39	17.59	1.83	10.40	.20	1.14
ELEVATORS	31	16.77	1.54	9.18	.19	1.13
BANKS	89	17.56	1.66	9.45	.12	.68
REGULAR	93	17.23	1.79	10.38	.12	.70
COMBINED	252	17.35	1.70	9.80	.07	.41
SEPT. 15, 1932						
CREAMERIES	38	17.34	.82	4.73	.09	.51
ELEVATORS	38	16.66	1.55	9.30	.17	1.02
BANKS	74	17.05	1.29	7.57	.10	.59
REGULAR	104	16.90	1.34	7.93	.09	.53
COMBINED	254	16.98	1.22	7.18	.05	.31

See page 2 for definition of terms.

TABLE 36.—FARM PRICES OF CORN BY MONTHS: MEASURES OF DISPERSION AND PROBABLE ERRORS

1932

(PER BUSHEL)

MONTH	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
JAN.	104	38.30	8.63	22.50	.57	1.49
FEB.	109	36.50	7.85	21.51	.51	1.40
MARCH	102	36.40	8.90	24.69	.59	1.64
APRIL	93	35.23	9.06	25.72	.63	1.79
MAY	78	30.78	10.01	32.56	.80	2.60
JUNE	82	25.77	11.12	43.13	.83	3.22
JULY	58	24.05	8.15	34.72	.95	3.95
AUG.	53	23.22	8.06	34.71	.71	3.06
SEPT.	63	17.50	6.98	39.88	.58	3.31
OCT.	114	10.27	4.14	40.31	.26	2.53

See page 2 for definition of terms.

TABLE 37.—FARM PRICES OF SPRING WHEAT OTHER THAN DURUM BY MONTHS: MEASURES OF DISPERSION AND PROBABLE ERRORS

1932

(PER BUSHEL)

MONTH	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
JAN.	94	51.07	4.94	9.67	.34	.67
FEB.	90	52.10	4.48	8.59	.32	.61
MARCH	88	52.51	5.76	10.97	.41	.78
APRIL	83	50.35	9.15	18.17	.68	1.33
MAY	65	45.75	5.89	12.87	.43	.94
JUNE	68	39.97	5.70	14.26	.46	1.15
JULY	66	31.41	5.38	17.12	.43	1.43
AUG.	93	36.73	4.05	11.03	.28	.76
SEPT.	100	36.38	4.17	11.46	.28	.78
OCT.	115	51.74	4.29	13.52	.27	.85

See page 2 for definition of terms.

TABLE 38.—FARM PRICES OF HOGS BY MONTHS: MEASURES OF DISPERSION AND PROBABLE ERRORS
1932

(PER 100 POUNDS)

MONTH	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(DOL.)	(DOL.)	(PCT.)	(DOL.)	(PCT.)
JAN.	138	3.19	.32	10.03	.02	.63
FEB.	128	2.98	.36	12.08	.02	.67
MAR.	127	3.41	.39	11.44	.02	.58
APRIL	117	3.14	.41	13.05	.03	.95
MAY	88	2.42	.39	16.11	.03	1.24
JUNE	93	2.18	.37	16.97	.03	1.38
JULY	73	3.77	.54	14.32	.04	1.06
AUG.	79	3.59	.30	8.38	.02	.62
SEPT.	90	3.31	.36	10.88	.03	.76
OCT.	111	2.62	.35	13.36	.02	.76

See page 2 for definition of terms.

TABLE 39.—FARM PRICES OF CATTLE BY MONTHS: MEASURES OF DISPERSION AND PROBABLE ERRORS
1932

(PER 100 POUNDS)

MONTH	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(DOL.)	(DOL.)	(PCT.)	(DOL.)	(PCT.)
JAN.	86	4.34	1.24	28.57	.09	2.07
FEB.	80	4.08	1.35	38.09	.10	2.45
MARCH	75	4.26	1.07	25.12	.08	1.88
APRIL	73	4.36	1.18	27.06	.09	2.06
MAY	51	4.05	1.00	24.69	.09	2.22
JUNE	59	3.68	1.14	30.98	.10	2.72
JULY	53	4.57	1.44	31.51	.13	2.84
AUG.	51	4.61	1.64	35.57	.11	2.36
SEPT.	55	4.62	1.59	34.44	.14	3.03
OCT.	72	3.88	1.38	35.57	.11	2.83

See page 2 for definition of terms.

TABLE 40.—FARM PRICES OF BUTTERFAT BY MONTHS: MEASURES OF DISPERSION AND PROBABLE ERRORS
1932

(PER POUND)

MONTH	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
		(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
JAN.	138	21.45	2.18	10.16	.13	.61
FEB.	143	17.32	2.12	12.21	.12	.69
MARCH	144	18.15	1.31	7.22	.07	.38
APRIL	133	16.02	1.27	7.93	.07	.44
MAY	106	14.79	1.42	9.60	.09	.61
JUNE	108	13.22	1.26	9.53	.08	.61
JULY	86	13.42	1.36	10.13	.09	.67
AUG.	93	17.23	1.79	10.38	.12	.70
SEPT.	104	18.90	1.34	7.93	.09	.53
OCT.	124	17.17	1.52	8.85	.09	.52

See page 2 for definition of terms.

TABLE 41.—NUMBER OF REPORTS RECEIVED BY MONTHS, JULY 1927—DEC. 1932

COMMODITY	MONTHS											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1927												
CORN							73	101	77	73	113	105
WHEAT							70	127	110	84	113	99
OATS							75	132	118	90	120	116
BARLEY							58	120	107	80	105	102
RYE							44	86	77	55	71	67
FLAXSEED							47	80	74	66	83	70
HOGS							71	105	91	72	112	94
BEEF CATTLE							44	69	65	50	67	61
SHEEP							16	27	27	25	27	28
BUTTER							68	91	85	77	107	90
BUTTERFAT							96	116	107	83	115	88
EGGS							102	114	107	85	120	106
1928												
CORN	130	139	121	133	100	104	122	78	99	90	139	120
WHEAT	120	117	101	123	101	100	126	96	129	103	133	104
OATS	134	139	117	141	111	115	145	99	137	111	152	117
BARLEY	122	126	106	122	97	93	121	90	130	92	138	107
RYE	76	76	61	68	56	60	72	58	79	67	81	64
FLAGSEED	81	84	68	84	70	76	88	60	102	87	103	76
HOGS	124	126	104	116	99	99	134	81	113	86	123	110
BEEF												
CATTLE	83	89	65	67	68	74	94	52	88	61	93	63
SHEEP	35	38	23	25	116	29	30	15	27	27	36	27
BUTTER	101	116	97	111	91	96	107	75	101	84	114	97
BUTTERFAT	118	122	115	131	109	113	139	85	115	100	141	116
EGGS	130	136	120	141	117	116	148	92	118	106	148	117
1929												
CORN	266	193	154	148	201	159	173	141	163	189	218	264
WHEAT	258	179	143	202	206	150	174	163	191	199	208	246
OATS	283	205	157	225	223	166	191	168	212	228	233	272
BARLEY	253	185	146	208	198	149	167	169	205	213	214	263
RYE	143	102	83	116	98	82	94	104	116	143	137	162
FLAXSEED	179	122	93	130	127	94	113	116	146	168	150	174
HOGS	267	192	138	200	189	143	165	147	162	184	194	245
BEEF												
CATTLE	184	134	87	145	134	103	114	103	109	131	133	162
SHEEP	75	64	30	50	39	38	42	41	51	60	70	67
1930												
CORN	235	232	237	210	221	188	139	133	172	172	192	194
WINTER WHEAT	88	78	87	75	86	65	56	72	93	72	78	82
DURUM	165	168	176	151	176	148	104	121	150	153	153	147
OTHER SPRING	188	181	206	171	193	158	115	137	167	54	170	154
OATS	236	227	245	218	238	208	155	159	202	195	207	196
BARLEY	229	228	243	213	229	199	155	162	210	197	200	197
RYE	133	124	128	105	124	112	105	122	153	138	154	145
FLAXSEED	148	148	149	126	142	126	87	118	142	138	137	124
HOGS	223	222	231	197	214	182	132	137	171	174	181	176
BEEF CATTLE	146	148	150	125	140	116	89	96	106	122	103	110
SHEEP	57	68	68	53	58	48	37	45	61	59	60	48
CHICKENS	196	191	190	155	170	157	124	115	154	161	159	158
BUTTER	166	178	171	158	161	138	108	103	130	122	134	124
BUTTERFAT	215	227	230	216	226	194	143	149	191	175	184	172
EGGS	163	164	173	164	172	138	117	119	133	125	126	137

TABLE 41.—NUMBER OF REPORTS RECEIVED BY MONTHS, JULY, 1927—DEC., 1932—(Continued).

COMMODITY	MONTHS											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	1931											
CORN	201	208	176	190	188	177	121	140	153	130	126	120
WINTER WHEAT	66	89	64	71	71	60	51	88	81	64	63	49
DURUM	153	163	128	129	130	120	93	113	113	103	84	86
OTHER SPRING	156	167	146	160	150	153	112	138	149	128	109	103
OATS	204	224	186	208	195	187	134	162	178	145	154	129
BARLEY	203	218	180	200	192	180	131	159	174	144	121	113
HOGS	196	201	154	168	167	138	111	144	152	151	163	136
BEEF CATTLE	122	138	99	111	115	111	74	90	108	108	97	93
SHEEP	51	56	46	50	35	42	23	46	52	48	44	35
BUTTERFAT	206	220	171	199	197	186	139	163	167	169	173	141
EGGS	204	220	168	193	202	184	136	160	174	161	168	141
	1932											
CORN	104	109	102	93	73	82	58	58	66	114	114	168
WINTER WHEAT	56	39	44	46	34	47	44	57	68	75	70	91
DURUM	80	71	69	65	55	59	54	69	81	94	74	104
OTHER SPRING	94	90	88	83	65	68	66	93	100	115	100	135
OATS	116	114	116	102	80	89	79	109	120	133	124	176
BARLEY	105	103	105	97	76	82	76	104	113	130	121	172
HOGS	138	128	127	117	88	93	73	79	90	111	103	167
BEEF CATTLE	86	80	75	73	51	59	53	51	55	72	71	122
SHEEP	35	40	25	26	21	21	15	14	21	88	80	46
CHICKENS	134	114	124	106	78	85	72	76	100	106	102	148
BUTTERFAT	138	143	144	133	106	108	86	93	104	124	119	162
EGGS	147	143	144	141	108	113	92	94	95	126	114	157

TABLE 42.—FARM PRICES OF CORN BY DISTRICTS; MEASURES BY DISPERSION
(Per Bushel)

DISTRICT	NUMBER OF REPORTS	ARITHMETIC MEANS	WEIGHT	S.D.	C.V.
		(Cents)		(Cents)	(Percent)
December 15, 1930					
1	4	48.50	3	2.60	5.36
2	27	44.70	12	4.80	10.74
3	29	46.27	11	3.36	7.26
4	13	54.92	2	11.59	21.10
5	28	46.68	14	3.77	8.08
6	49	49.00	22	6.25	12.75
7	3	40.00	1	8.16	20.40
8	15	44.53	11	3.98	8.98
9	26	56.81	24	6.09	10.72
State	194	48.59		7.15	13.29
January 15, 1932					
1	3	39.33	3	7.38	18.76
2	16	31.60	12	6.69	21.17
3	14	32.86	11	7.81	23.77
4	5	43.80	2	11.16	25.48
5	14	39.78	14	9.18	23.08
6	22	36.40	22	7.41	20.35
7	4	44.50	1	8.41	18.90
8	12	44.41	11	4.44	10.00
9	14	43.64	24	8.45	7.91
State	104	38.30		8.63	22.5

TABLE 43.—FARM PRICES OF SPRING WHEAT OTHER THAN DURUM BY DISTRICTS; MEASURES OF DISPERSION

(Per Bushel)

DISTRICT	NUMBER OF REPORTS	ARITH- METIC MEANS	WEIGHT	S.D.	C.V.
		(Cents)		(Cents)	(Percent)
August 15, 1930					
1	6	60.16	6	7.66	12.73
2	25	69.72	47	4.69	6.73
3	9	70.33	20	2.56	3.64
4	11	66.09	2	5.42	8.20
5	29	72.00	12	4.29	5.96
6	16	71.75	5	4.96	6.91
7	6	57.83	1	8.14	14.07
8	17	60.29	1	9.35	15.51
9	18	69.53	6	9.60	13.80
State	137	68.06		7.99	11.74

TABLE 44.—FARM PRICES OF BARLEY BY DISTRICTS; MEASURES OF DISPERSION

(Per Bushel)

DISTRICT	NUMBER OF REPORTS	ARITH- METIC MEANS	WEIGHT	S.D.	C.V.
		(Cents)		(Cents)	(Percent)
August 15, 1930					
1	5	35.40	3	2.12	5.99
2	26	37.31	29	5.28	14.15
3	18	37.67	29	2.80	7.43
4	9	36.22	2	9.81	17.08
5	29	35.59	13	3.49	9.80
6	32	39.19	11	3.06	7.80
7	5	34.00	1	10.02	30.00
8	19	33.89	7	5.48	16.16
9	19	42.79	5	4.23	9.89
State	162	37.43		5.51	14.72

TABLE 45.—FARM PRICES OF HOGS BY DISTRICTS; MEASURES OF DISPERSION

(Per 100 Pounds)

DISTRICT	NUMBER OF REPORTS	ARITH- METIC MEANS	WEIGHT	S.D.	C.V.
		(Dollars)		(Dollars)	(Percent)
January 15, 1930					
1	7	7.95	3	.39	4.90
2	37	8.41	12	.40	4.76
3	27	8.49	10	.51	6.00
4	9	8.02	3	.33	4.11
5	35	8.59	14	.14	1.63
6	50	8.90	21	.36	4.04
7	7	8.36	1	.10	1.20
8	13	8.15	9	.39	4.78
9	38	8.72	27	.26	2.98
State	223	8.56		.50	5.84

TABLE 46.—FARM PRICES OF BEEF CATTLE; MEASURES OF DISPERSION
(Per 100 Pounds)

DISTRICT	NUMBER OF REPORTS	ARITH- METIC MEANS	WEIGHT	S.D.	C.V.
		(Dollars)		(Dollars)	(Percent)
May, 1930					
1	4	8.50	8	1.50	17.64
2	25	8.29	11	1.33	16.04
3	14	8.28	11	1.10	13.28
4	7	8.68	10	1.42	16.36
5	24	9.81	13	1.31	13.35
6	26	9.30	17	2.01	21.61
7	5	8.35	4	1.97	23.59
8	16	8.91	10	1.09	12.23
9	19	10.71	16	1.34	12.51
State	140	9.16		1.71	16.67

TABLE 47.—FARM PRICES OF BUTTERFAT BY DISTRICTS; MEASURES OF DISPERSION

(Per Pound)

DISTRICT	NUMBER OF REPORTS	ARITH- METIC MEANS	WEIGHT	S.D.	C.V.
		(Cents)		(Cents)	(Percent)
June 15, 1930					
1	5	26.60	8	.80	3.00
2	34	28.20	11	1.74	6.17
3	30	30.00	22	1.53	5.10
4	12	27.25	6	1.42	5.21
5	29	28.95	8	1.64	5.65
6	44	28.70	19	1.97	6.84
7	5	28.80	1	1.72	5.97
8	12	27.42	6	2.92	10.65
9	23	29.52	19	3.09	10.47
State	194	28.73		2.16	7.52

TABLE 48.—FARM PRICES OF CORN IN A SURPLUS PRODUCING AREA: MEASURES OF DISPERSION AND PROBABLE ERRORS
(PER BUSHEL)

AREA	YEAR	MONTH	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
				(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
DISTRICT 6 and 9	1928	DEC.	49	61.94	4.93	7.96	.47	.76
STATE	1928	DEC.	120	64.18	8.43	13.13	.52	.81
DISTRICT 6 and 9	1929	JAN.	110	67.62	5.18	7.66	.33	.49
STATE	1929	JAN.	266	67.08	7.19	10.72	.30	.45
DISTRICT 6 and 9	1930	DEC.	75	51.71	7.21	13.95	.56	1.08
STATE	1930	DEC.	194	48.59	7.15	13.99	.35	.49
DISTRICT 6 and 9	1932	AUG.*	64	29.30	5.41	21.88	.46	1.86
STATE REGULAR	1932	AUG.	58	23.22	8.06	34.71	.71	3.06
STATE COMBINED*	1932	AUG.	149	22.99	6.89	29.97	.38	1.65

* Special price inquiry—combination of Elevators, Creameries, Banks, and Regular Reporters.

TABLE 49.—FARM PRICES OF SPRING WHEAT OTHER THAN DURUM IN SURPLUS PRODUCING AREAS: MEASURES OF DISPERSION AND PROBABLE ERRORS

(PER BUSHEL)

AREA	YEAR	MONTH	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
				(CENTS)	(CENTS)	(PERCENT)	(CENTS)	(PERCENT)
DISTRICT 2 and 3	1930	AUG.	34	69.88	4.76	6.81	.55	.79
STATE	1930	AUG.	137	63.96	7.99	11.74	.46	.67
DISTRICT 2 and 3	1931	AUG.	42	43.07	4.31	10.00	.44	1.02
STATE	1931	AUG.	138	41.77	5.59	13.38	.32	.76
DISTRICT 2, 3, SULLY, HUGHES, HYDE, AND HAND COUNTY	1932	AUG.	113	37.93	2.90	7.64	.18	.47
STATE REGULAR	1932	AUG.	93	36.73	4.03	11.03	.28	.76
STATE COMBINED*	1932	AUG.	232	36.40	3.77	10.36	.15	.41

* Special price inquiry.

TABLE 50.—FARM PRICES OF HOGS IN A SURPLUS PRODUCING AREA: MEASURES OF DISPERSION AND PROBABLE ERRORS

(PER 100 POUNDS)

AREA	YEAR	MONTH	NUMBER OF REPORTS	ARITH- METIC MEAN	S.D.	C.V.	P.E.	R.P.E.
				(DOL.)	(DOL.)	(PERCENT)	(DOL.)	(PERCENT)
DISTRICT 6 and 9	1930	JAN.	88	8.82	.40	4.53	.03	.34
STATE	1930	JAN.	223	8.56	.50	5.84	.02	.23
DISTRICT 6 and 9	1932	AUG.	71	3.78	.37	9.79	.03	.79
STATE REGULAR	1932	AUG.	79	3.58	.30	8.38	.02	.62
STATE COMBINED*	1932	AUG.	199	3.60	.41	11.40	.02	.56

* Special price inquiry.