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AGRICULTURAL EXTENSION DIVISION
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F. W. Peck, Director

MINNESOTA FARM BUSINESS NOTES

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VARIATION IN AGRICULTURAL PRICES AMONG DIFFERENT SECTIONS OF MINNESOTA

Prepared by W. C. Waite and W. B. Garver

In a state as large as Minnesota and with as diverse an agriculture, there are two important differences among areas with respect to agricultural prices. In the first place, the prices of individual commodities are higher in some sections than others due to differences in transportation costs, the surplus or deficit of the commodity in that particular region, or because of differences in quality or type of product. In the second place, there is considerable variation between sections in the relative importance of particular products in the total sales, and since the individual products differ in their price fluctuations, the general level of agricultural prices fluctuates differently in the various areas. It is the purpose of this study to show the nature of these differences. The prices used are those reported to the Division of Crop and Livestock Estimates of the Bureau of Agricultural Economics as received by producers on or about the 15th of each month.

The state has been divided into six districts on the basis of agricultural characteristics and price reports have been averaged to obtain the prices for each area. The six areas are shown in Figure 1. District I includes 22 counties located

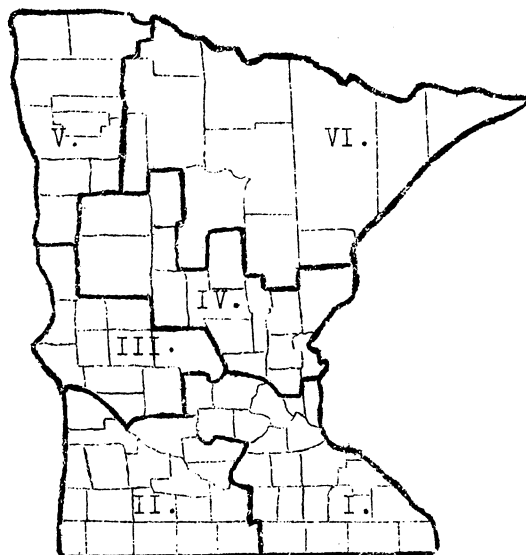


Figure 1. Division of State into Districts.

in the southeast corner of the state, District II includes 19 counties in the southwest, District III 11 counties in the west central part of the state, District IV 15 counties in the north central, District V the 9 counties in the Red River Valley section in the northwest corner of the state, and District VI 11 counties in the north and northeastern section of the state.

Table 1

District Weighted Average Prices for Thirteen Agricultural Commodities
1924-1933 averages

| | Districts | | | | | | State |
|-------------|-----------|------|------|------|------|------|-------|
| | I | II | III | IV | V | VI | |
| Wheat | 1.04 | 1.04 | 1.06 | 1.09 | .98 | 1.02 | 1.04 |
| Corn | .62 | .57 | .62 | .72 | .78 | - | .58 |
| Oats | .35 | .32 | .32 | .35 | .30 | .39 | .33 |
| Barley | .52 | .45 | .48 | .53 | .45 | .53 | .47 |
| Rye | .76 | .70 | .71 | .69 | .79 | .71 | .73 |
| Flax | 1.98 | 1.89 | 1.95 | 2.01 | 1.85 | 1.85 | 1.92 |
| Potatoes | .89 | .73 | .74 | .65 | .60 | .71 | .69 |
| Hogs | 7.86 | 7.69 | 7.66 | 7.60 | 7.51 | 8.00 | 7.73 |
| Cattle | 6.54 | 7.04 | 6.67 | 5.56 | 5.66 | 5.27 | 6.43 |
| Lambs-sheep | 7.90 | 7.89 | 7.76 | 7.82 | 7.66 | 7.82 | 7.82 |
| Chickens | .148 | .151 | .138 | .132 | .129 | .161 | .141 |
| Eggs | .202 | .192 | .191 | .198 | .186 | .216 | .197 |
| Butterfat | .38 | .36 | .37 | .38 | .35 | .37 | .38 |

In ordinary years reported prices of grain tend to be somewhat higher in the eastern part of the state than in the western part and are usually relatively high in District VI which is largely a deficit area. Thus Districts I and VI are likely to be relatively high and Districts II and V relatively low. The differences amount to around five to ten cents in the case of wheat, corn, rye and flax, five cents or less for oats and ten cents or more for barley. Potatoes vary widely between years with differences as large as fifty cents a bushel, but ordinarily Districts I, II, III and VI are above IV and V in price. The differences in hogs and cattle are more marked and are occasioned in a large part by differences in types of animals sold and degree of finish. Hogs show a variation of from 80 cents to a dollar a hundredweight with prices relatively high in District I and low in Districts IV and V. Cattle often vary by as much as \$2.00 a hundredweight with the highest prices generally reported from District II and the lowest prices in Districts IV, V and VI. The variation is small in the case of sheep, usually amounting to only ten cents per hundredweight. Butterfat varies by about four cents or less per pound with the higher prices ordinarily reported in Districts I and IV. With chickens and eggs, the differences amount to five cents or less with higher prices reported from the eastern part of the state in Districts I and VI.

It is impossible to state precisely the significance of these differences in price on the cash income of farmers in the various districts. If, however, we assume that all farmers throughout the state had sold commodities in the same proportion as the state sales in 1924-25-26, and that the quantities of products sold had been equal to the average farm sales for the state, the price differences in these years would have been sufficient to result in a difference of about \$150 in the yearly cash sales per farm in different districts. Farms in District I would have had the largest income and those in District V the lowest. The other districts would have been very close to the state average.

The price indexes for the district include thirteen of the principal agricultural products of the state, namely: wheat, corn, oats, barley, rye, flax, potatoes, hogs, cattle, lambs-sheep, chickens, eggs and butterfat. These thirteen items make up about 90 per cent of the sales of all agricultural products in the state and are the only ones for which prices and reasonably accurate estimates of sales can be computed by sections of the state. The price indexes are probably

not greatly different than they would have been if it had been possible to include the minor items. The excluded items are generally unimportant and a number of them tend to fluctuate in a manner similar to the included items. The prices have been weighted by the estimated marketings of the individual products in each district.

These indexes are shown in Table 2. The general broad movement of prices in all the districts is much the same. There was a sharp decline from 1929 to 1932

Table 2

Annual Indexes of Prices of Thirteen Agricultural Products
for Six Districts of Minnesota, 1924-1935
(1924-1925-1926 = 100)

| Year | Districts | | | | | | State |
|----------|-----------|-----|-----|-----|-----|-----|-------|
| | I | II | III | IV | V | VI | |
| 1924-5-6 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1927 | 103 | 100 | 100 | 104 | 101 | 104 | 101 |
| 1928 | 102 | 100 | 100 | 104 | 95 | 111 | 102 |
| 1929 | 106 | 105 | 105 | 107 | 100 | 112 | 105 |
| 1930 | 88 | 88 | 85 | 92 | 83 | 94 | 88 |
| 1931 | 60 | 59 | 57 | 61 | 52 | 53 | 59 |
| 1932 | 42 | 39 | 40 | 43 | 39 | 45 | 41 |
| 1933 | 47 | 44 | 46 | 48 | 50 | 48 | 46 |
| 1934 | 59 | 61 | 65 | 60 | 69 | 58 | 62 |
| 1935 | 80 | 84 | 80 | 72 | 70 | 71 | 79 |

and a subsequent rise. There were, however, some important differences between districts occasioned largely by the difference in products sold. In District I the price level is influenced chiefly by the sales of butterfat, hogs, cattle, wheat and eggs; in District II by hogs, butterfat, cattle, corn, oats and wheat; in District III by hogs, butterfat, wheat, cattle and flax; in District IV by butterfat, hogs, potatoes, wheat and eggs; in District V by wheat, butterfat, potatoes, hogs and flax; and in District VI by butterfat, potatoes and cattle. The indexes of crop prices in the state were considerably lower between 1927 and 1932 than were the indexes of livestock and livestock products. In consequence, we find the indexes in the districts where a large proportion of the sales are of crops, low relative to the districts in which a large portion of the sales are from livestock and livestock products. For example, the index for District V in which over 50 per cent of the sales were of crops was the lowest district index in the period from 1928 to 1932, while the index for District VI in which over 85 per cent of the sales were of livestock and livestock products was the highest of the district indexes. The difference amounted to as much as fifteen points in 1928 and did not change greatly until 1932. The largest variation in prices occurred in Districts IV and V, where wheat and potatoes are the largest source of crop income. Districts depending more upon livestock products had somewhat smaller variations.

MINNESOTA FARM PRICES FOR OCTOBER 1936
Prepared by W. C. Waite and W. B. Garver

The index number of Minnesota farm prices for the month of October, 1936 was 96. When the average of farm prices of the three Octobers 1924-25-26 is represented by 100, the indexes for October of each year from 1924 to date are as follows:

| | |
|-------------------|-------------------|
| October 1924 - 93 | October 1931 - 52 |
| " 1925 - 104 | " 1932 - 38 |
| " 1926 - 104 | " 1933 - 52 |
| " 1927 - 98 | " 1934 - 67 |
| " 1928 - 95 | " 1935 - 73* |
| " 1929 - 107 | " 1936 - 96* |
| " 1930 - 82 | |

*Preliminary

The price index of 96 for the past month is the net result of increases and decreases in the prices of farm products in October 1936 over the average of October 1924-25-26 weighted according to their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index,
October 15, 1936, with Comparisons*

| | Oct. 15, 1936 | Sept. 15, 1936 | Oct. 15, 1935 | Av. Oct. 1924-25- 26 | % Oct. 15, 1936 is of Sept. 15, 1936 | % Oct. 15, 1936 is of Oct. 15, 1936 | % Oct. 15, 1936 is of Oct. 15, 1924-25-26 |
|-------------|------------------|-------------------|------------------|----------------------------|-----------------------------------------------|----------------------------------------------|----------------------------------------------------|
| Wheat | \$1.25 | \$1.18 | \$1.05 | \$1.28 | 106 | 109 | 98 |
| Corn | .94 | .98 | .56 | .78 | 96 | 168 | 120 |
| Oats | .37 | .38 | .22 | .38 | 98 | 168 | 98 |
| Barley | .98 | .93 | .38 | .61 | 105 | 258 | 161 |
| Rye | .73 | .71 | .39 | 1.01 | 103 | 187 | 72 |
| Flax | 1.87 | 1.88 | 1.56 | 2.15 | 99 | 120 | 87 |
| Potatoes | 1.00 | 1.30 | .24 | .71 | 77 | 416 | 141 |
| Hogs | 9.20 | 10.00 | 9.90 | 10.68 | 92 | 94 | 86 |
| Cattle | 6.30 | 6.20 | 6.50 | 5.97 | 102 | 97 | 106 |
| Calves | 7.30 | 7.60 | 8.00 | 9.36 | 96 | 91 | 78 |
| Lambs-sheep | 7.55 | 7.87 | 7.86 | 11.03 | 96 | 96 | 68 |
| Chickens | .119 | .132 | .14 | .166 | 90 | 85 | 72 |
| Eggs | .243 | .209 | .246 | .35 | 116 | 99 | 69 |
| Butterfat | .35 | .37 | .27 | .44 | 95 | 130 | 80 |
| Hay | 8.26 | 8.90 | 5.38 | 11.90 | 93 | 154 | 69 |
| Milk | 1.97 | 1.98 | 1.56 | 2.26 | 99 | 126 | 87 |

*Except for milk, these are the average prices for Minnesota as reported by the United States Department of Agriculture.

Indexes and Ratios of Minnesota Agriculture*

| | Oct. 1936 | Sept. 1936 | Oct. 1935 | Av. Oct. 1924-26 |
|---------------------------------------------|--------------|---------------|--------------|---------------------|
| U.S. farm price index | 88.0 | 91.0 | 79.0 | 100.0 |
| Minnesota farm price index | 96.0 | 99.0 | 73.0 | 100.0 |
| U.S. purchasing power of farm products | 105.0 | 108.0 | 98.0 | 100.0 |
| Minnesota purchasing power of farm products | 114.0 | 119.0 | 90.0 | 100.0 |
| U.S. hog-corn ratio | 9.4 | 9.2 | 13.3 | 12.8 |
| Minnesota hog-corn ratio | 9.8 | 10.3 | 17.7 | 14.6 |
| Minnesota egg-grain ratio | 14.1 | 12.4 | 19.9 | 21.7 |
| Minnesota butterfat-farm-grain ratio | 23.2 | 24.4 | 34.1 | 38.3 |

*Explanations of the computation of these data are given in Farm Business Notes No. 144.