Bank liquidity improves

An excellent harvest and rising farm incomes are largely responsible for improvement in the liquidity position of district member banks in recent months. During October, for example, bank deposits reached a new high, additions to holdings of securities were at a record level and bank loans declined contra-seasonally at city banks. Loans at the country banks exhibited a normal seasonal increase in October, and the volume of member bank borrowings from the Federal Reserve Bank of Minneapolis during the month and into November continued to decline.

The recent improvement in the economic circumstances of banking and agriculture is not fully paralleled in other segments of the district’s economy. The rate of nonagricultural employment, although up, has not been sufficiently high in recent months to fully absorb normal additions to the labor force. Unemployment therefore has tended to increase, especially in the iron ore and copper producing areas of the district. The current outlook for copper is further clouded by large world surpluses. Activity is also noticeably weak in the lumber producing areas of the region.

District construction work, in general, continues substantially below year-ago levels when measured by the number and valuation of new permits issued. Residential building has been particularly sluggish, and the advent of cold weather will further curtail outside work.

Department store sales have little more than

**In this issue:**

Effects of new reserve regulations on district member banks . . . . . page 6

A record year for the district’s sugarbeet industry . . . . . . . . . . . page 8
held their own in recent weeks, but retailers are anticipating a moderate upturn during the holiday season. An increasing level of personal income is the chief supporting factor for this view.

The impact of the current high level of inventories for both crops and livestock on the district's economy is of significance because, for the district, agricultural income is roughly three times more important in the total personal income picture than it is for the United States as a whole.

In spite of the brighter farm situation, however, some unevenness exists in the region's economy. This unevenness can be traced to the effects of a general adjustment in the total United States economy since about mid-year. United States unemployment at 6.4 percent of the labor force in October was relatively high, and United States industrial production was down from 111 last January to 107 in October (1957 = 100). A principal reason for the decline in the rate of overall economic activity is the decline in the rate of inventory accumulation during the third quarter after substantial increases during the first and second quarters. Construction activity in the nation is on the slow side, as it is in the district. Both non-farm wholesale prices and prices of so-called "spot commodities" have declined slightly in recent months, but the consumer price index continued its upward climb, though at a slower rate of advance.

The following selected topics describe particular aspects of the district's current economic scene:

**FARM REAL ESTATE TAXES INCREASE**

Taxes levied on farm real estate in the United States totaled $1,192 million in 1959, an increase of $89 million, or 8 percent from the amount levied in 1958.\(^1\) This is the sharpest annual rise in levies on farm real estate recorded in the last decade. In 1959 state and local tax levies on farm real estate averaged $1.11 per acre compared with

\(^1\)"Farm Real Estate Taxes, Recent Trends and Developments," ARS 43-130, USDA, August 1960.

The magnitude of the tax from area to area depends on the value of the farmland and the improvements made on it, as well as on the tax system. Thus the states characterized by small, intensively operated farms with a high value per acre and a large investment in improvements tend also to have a higher tax per acre. In contrast, states such as Montana and the Dakotas have much lower taxes due to the fact that much of the land

---

**U.S. farm real estate taxes**

\[\text{\% of 1946-48} \times 100\]

\[\text{Dollars} \]

*Excludes Alaska and Hawaii Source: USDA

$1.03 in 1958. The index of taxes levied rose 15 points over 1958 to a record high of 199 (1946-48=100) in 1959 (see chart).

Taxes were higher in all states in 1959. The table shows how the states in the Ninth district compare with the United States.

**TAXES LEVIED ON FARM REAL ESTATE IN DOLLARS PER ACRE**

<table>
<thead>
<tr>
<th></th>
<th>1950</th>
<th>1958</th>
<th>1959</th>
<th>% change 1958 to 1959</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota</td>
<td>1.33</td>
<td>2.00</td>
<td>2.18</td>
<td>9.0</td>
</tr>
<tr>
<td>North Dakota</td>
<td>.43</td>
<td>.60</td>
<td>.52</td>
<td>4.0</td>
</tr>
<tr>
<td>South Dakota</td>
<td>.47</td>
<td>.66</td>
<td>.74</td>
<td>12.1</td>
</tr>
<tr>
<td>Montana</td>
<td>.21</td>
<td>.29</td>
<td>.32</td>
<td>10.3</td>
</tr>
<tr>
<td>Michigan</td>
<td>.77</td>
<td>1.66</td>
<td>1.75</td>
<td>5.4</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1.57</td>
<td>2.18</td>
<td>2.32</td>
<td>6.4</td>
</tr>
<tr>
<td>United States</td>
<td>.44</td>
<td>1.03</td>
<td>1.11</td>
<td>7.8</td>
</tr>
</tbody>
</table>
is suited only for grazing.

An analysis of taxes levied on farm real estate in each type of farming area indicates that in 1959 taxes were highest in the fruit, truck and mixed farming areas, and in the dairy areas. Taxes per acre of farmland in these areas averaged more than three times the national average. They were lowest in the range livestock and cotton farming areas, where the average tax per acre was less than half the national average. This explains in part why Minnesota, Wisconsin and Michigan rank higher in taxes per acre than the United States, and why Montana and the Dakotas are lower.

A similar comparison between farms located in standard metropolitan areas and those outside indicates that on the average taxes per acre on farm real estate located in metropolitan counties were more than double the taxes on farms located in counties immediately adjacent. This is due to several important factors. Suburban development bids up the price of land and forces taxes up due to increased government services demanded as development occurs. Land use is also usually intensified close to cities.

Taxes levied on farm real estate in 1959 absorbed 8.5 percent of total net farm income, including taxes and net rent paid to nonfarm landlords (see map). This was the highest proportion since the early 1930s. In 1958, a relatively better crop year with higher net farm incomes, the proportion was 6.8 percent. Farm real estate taxes as a percentage of net farm income for district states in 1959 ranged from 9 percent in Montana to 17 percent in South Dakota.

The steady rise in farm real estate taxes is a direct result of the steadily expanding revenue requirements of local governments. The general property tax, including farm real estate taxes, is predominantly a local tax source. In 1957, less than 2 percent of the total general property tax in the United States was collected by state governments.

A recent report by the Farm Economics Research Division, USDA Agricultural Research Service, describes the general situation in assessment of farm real estate in the United States. One of the principal findings concerns the marked tendency toward regressivity in assessments—that is, the tendency for higher-valued properties to be assessed at a smaller fraction of their sales price than lower-valued properties. In 1956, for the nation as a whole, the simple average ratio of assessed valuation of farm real estate to its market value was 28 percent. This average in the Ninth district ranges from a low of 10.5 in Montana to a high of 52.3 in South Dakota.

Some of the most difficult problems in assessing farm real estate arise in the rural-urban fringe, where demand for industrial sites, subdivisions, roads, shopping centers and the like exert a pressure on farmland values. Farmland values, however, reflect primarily value if sold rather than

Farm real estate taxes as a percentage of net farm income, 1959

U. S. AVERAGE: 8%

Tax data are based on levies.

Source: USDA.
value if retained as farmland. The same farm property must also contribute, through taxation, to the support of the many governmental services necessitated by metropolitan expansion.

**CATTLE ON FEED ABOVE LAST YEAR**

The number of cattle and calves on feed in the 21 major feeding states totaled 4,853,000 head, according to a recent report of the U. S. Department of Agriculture. This was an increase of 1.5 percent from the number on feed on October 1 a year earlier. Thirteen of these states' accounted for 4,406,000 head, or 91 percent of the total for the 21 states. Several of the north central states reported a sharp cutback, but Texas, Colorado, Arizona and California registered a marked increase in the number on feed.

There were 492,000 cattle on feed on October 1 in the Ninth district; this was about 1 percent above a year ago. The number in Minnesota, the most important feeding state in the district, was up slightly. However, South Dakota, also an important feeding state, reported a 10 percent decrease in the number on feed.

**CATTLE AND CALVES ON FEED, OCTOBER 1, 1959 AND 1960**

<table>
<thead>
<tr>
<th>State</th>
<th>1959</th>
<th>1960</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota</td>
<td>250,000</td>
<td>252,000</td>
<td>+ 1</td>
</tr>
<tr>
<td>North Dakota</td>
<td>58,000</td>
<td>64,000</td>
<td>+ 10</td>
</tr>
<tr>
<td>South Dakota</td>
<td>150,000</td>
<td>135,000</td>
<td>- 10</td>
</tr>
<tr>
<td>Montana</td>
<td>27,000</td>
<td>41,000</td>
<td>+ 52</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>485,000</td>
<td>492,000</td>
<td>+ 1</td>
</tr>
</tbody>
</table>

In the 13 states, the number that had been on feed less than three months was about 2 percent below that on October 1, 1959, but the number on feed from three to six months was up 1 percent

The number over six months was up almost 9 percent.

The weights of cattle and calves on feed on October 1 indicated a higher proportion of lighter cattle than a year ago. In the 13 states the number weighing less than 700 pounds was up 11 percent from last year. The 700 to 900 pound group was up about 3 percent, but the weight groups of 900 to 1100 pounds, and 1100 pounds and over, were down 3 percent and 11 percent, respectively, from October 1, 1959.

Cattle feeders in the 13 states reported that of the 4,406,000 head on feed on October 1, they expected to market 2,445,000 head during October, November and December. If these intentions are carried out, the number marketed during these months will be 3 percent greater than the number marketed during the same period last year.

**LARGE OCTOBER DEPOSIT INFLOW**

The deposits of Ninth district member banks rose by more in October than in any previous October since 1946. The $179 million inflow brought district member bank deposits to the highest level ever for the last Wednesday of a month—to $4.925 billion, or $103 million higher than the previous record established in December of 1958. At the same time the loans of district member banks fell by $14 million, in contrast to an average increase of $10.4 million for all October since 1946. City bank loans fell by $26 million, or more than in any of the previous October since 1946 when, on the average, loans changed little. At the country banks, loans rose $12 million—the same as the average increase for October since 1946.

The contra-seasonal loan decline at the city banks together with the more than seasonal deposit inflow at both the city and country banks brought further improvement in district member bank liquidity. This is reflected in postwar record additions for the month to holdings of securities, and by continued reductions of borrowing from

---

1 The 13 states are: Ohio, Indiana, Illinois, Minnesota, Iowa, Missouri, South Dakota, Nebraska, Kansas, Texas, Colorado, Arizona and California. Others included in the 21 major feeding states are: Pennsylvania, Michigan, Wisconsin, North Dakota, Oklahoma, Montana, Idaho and Utah.
the Federal Reserve Bank of Minneapolis. During October reserve city bank borrowing averaged the least in 22 months, while country bank borrowing averaged the least in 25 months. Securities held by the city banks rose $30 million in contrast to no change in October last year; country bank holdings rose $59 million in contrast to a gain of $28 million last October. These gains reflect in part the sale to banks on October 21 of U. S. Treasury tax anticipation bills, paid for by credits to Treasury deposit balances at the banks.

The rate of check writing by district bank customers also rose in October, relative to a year earlier. Despite the fact that October 1960 had one less business day than October 1959, debits to demand deposit accounts at a large sample of banks in the district were up four percent. Gains were registered in every district state or part-state except South Dakota.

**SEASONAL UNEMPLOYMENT RISES**

In the nation, the demand for labor has been on the weak side since May. The seasonally adjusted total of 53.1 million nonfarm workers employed in October was 300,000 below the peak reached in May. The decline in employment between mid-September and mid-October reflects mainly the continued cutbacks in manufacturing industries. Adjusted employment in this period dropped by 100,000.

As a result of layoffs in manufacturing industries and of a weakening demand for additional labor in other industries, unemployment in the nation rose by 200,000 between mid-September and mid-October. The seasonally adjusted unemployment rate rose from 5.7 to 6.4 percent of the labor force. The latter rate was above the peak reached during the 1953-54 recession. In the 1957-58 recession, it rose to 7.5 percent.

Unemployment in the nation normally is at a seasonal low for the year in October. Unemployment begins to rise in November, as winter weather curtails outdoor activities, and reaches a seasonal peak in February. The actual number of persons unemployed in October was 3.6 million. If only seasonal changes occur, unemployment will rise to 5.4 million in February 1961.

In the Ninth district, nonagricultural employment has also declined from May and June on a
seasonally adjusted basis. The adjusted number employed in October was down approximately 10,000 from the peak reached last June.

Meat packing, poultry dressing, vegetable canning and dairy processing constitute a large share of manufacturing in the nondurables field. The yields of vegetable crops and the marketings of livestock and livestock products have a bearing on the volume of processing. The seasonally adjusted employment in this field was at a relatively high level from January through May and then began to decline. In October, the seasonally adjusted number of workers employed in the district in nondurable manufacturing was down 5,000 from May.

The manufacture of durable goods is more subject to cyclical swings than are other sectors of the economy. Seasonally adjusted employment in the district rose slowly through the first part of the year, reaching a peak of 145,300 workers in May. Since that time, the adjusted employment has contracted slowly, with the total in October down 4,000 from May.

A reduction in the output of durable goods in the nation affects the district’s mineral output, especially iron ore. As the production of steel was cut back from the first of the year, demand for iron ore fell off sharply. Iron ore shipments from U. S. mines in the Lake Superior region aggregated 64 million gross tons on November 1. This was nearly twice the 1959 tonnage, when shipments were interrupted by the steel strike; however, it fell short of the tonnage shipped in former prosperous years. During the 1957 navigation season, 77 million tons were shipped.

A comparison of employment in the district’s mining industry during the current year with the prosperous year of 1957 indicates how employment has slipped in this field. Employment in the current year rose from 34,300 in January to 42,000 in August and then began to decline. In 1957, employment in January was at 46,300 and during the summer rose to 49,300.

In the construction field, district employment has held up well despite the slump in residential building. Employment rose from 63,000 during the winter of 1960 to 115,000 in August. Construction undertaken in nonresidential building and in heavy engineering projects has more than offset the decline in residential building.

Unemployment in most district states during the latter half of this year has been higher than a year ago. In August, 49,000 people in the district filed unemployment insurance claims, thus exceeding the 1959 figure for the first time this year. The number filing claims declined in September and October, but not as much as it did last year.

New reserve regulations

In late October the Board of Governors of the Federal Reserve System announced the final steps for implementing certain member bank reserve legislation enacted by Congress in 1959. The legislation required that the difference between reserve requirements at member banks in central reserve cities and in reserve cities be eliminated. The Federal Reserve Board was also granted authority to count member bank vault cash as a part of legal reserves. Prior to this legislation, only member bank deposits at Federal Reserve banks could satisfy legal reserve requirements.

The first move to bring equality between reserve requirements at reserve city and central reserve city banks was taken September 1 this year when requirements for net demand deposits at the latter
class were reduced from 18 percent to 17.5 percent; on December 1 they were further reduced to 16.5 percent, which is equal to the requirement at reserve city banks. The one percent reduction lowered required reserves about $250 million, since net demand deposits at central reserve city banks have recently averaged approximately $25 billion.

In December last year, country banks and other member banks were allowed to count as reserve their vault cash in excess of 4 percent and 2 percent, respectively, of net demand deposits. The respective deposit percentages were further reduced to 2.5 percent in August and to 1 percent in September 1960. For September 1960, “countable” vault cash at all member banks averaged approximately $870 million while total vault cash averaged approximately $2.3 billion. The difference between these two amounts was the approximate addition to the reserve base on November 24 when all member bank vault cash became countable.

Offsetting somewhat the expansionary potential of this addition to countable vault cash was a 1 percent increase of reserve requirements against net demand deposits at country member banks on November 24. Since these deposits recently averaged $38 billion, required reserves are estimated to have risen about $380 million on this score. Countable vault cash at the country banks rose by much more than this—by an estimated $900 million, as indicated in Table 1.

At individual country banks where vault cash averaged more than 2.5 percent of net demand deposits, total reserves rose by two and one-half times as much on November 24 as did required reserves, since the former rose 2.5 percent and the latter 1 percent of net demand deposits. Only if a country bank held vault cash amounting to less than 1 percent of net demand deposits, would its actual reserves rise by less than required reserves because of the November 24 changes. In the district, only 6 of the 464 country member banks were in this group; only 93 had vault cash amounting to less than 2 percent of demand deposits in the reserve period ended November 2. Table 2 shows the number of country member banks in the district by state and by the ratio of vault cash to net demand deposits for the reserve period ended November 2.

At the ten reserve city banks in the Ninth district, only $6 million of their average vault cash holdings of $10.3 million in the period ended November 2 was countable as reserve. Thus almost $9 million of reserves will become available to these banks due to the new vault cash regulation.

### TABLE 1: EFFECTS OF NEW REGULATIONS ON EXCESS RESERVES

<table>
<thead>
<tr>
<th>Change of Countable Vault Cash</th>
<th>Central City Reserve</th>
<th>Reserve City Reserve</th>
<th>Country Reserve</th>
<th>All Member Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change of Reserves Required</td>
<td>+150</td>
<td>+380</td>
<td>+900</td>
<td>+1,430</td>
</tr>
<tr>
<td>Minus</td>
<td>-250</td>
<td>+380</td>
<td>+130</td>
<td>+110</td>
</tr>
<tr>
<td></td>
<td>+400</td>
<td>+380</td>
<td>+520</td>
<td>+1,300</td>
</tr>
</tbody>
</table>

### TABLE 2: NUMBER OF DISTRICT COUNTRY MEMBER BANKS BY STATE AND BY RATIO OF VAULT CASH TO NET DEMAND DEPOSITS

<table>
<thead>
<tr>
<th>Percent</th>
<th>Minn.</th>
<th>Mont.</th>
<th>N.D.</th>
<th>S.D.</th>
<th>Wis.</th>
<th>Mich.</th>
<th>9th District</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1 - 2</td>
<td>25</td>
<td>20</td>
<td>21</td>
<td>20</td>
<td>1</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td>2 - 3</td>
<td>46</td>
<td>36</td>
<td>14</td>
<td>23</td>
<td>5</td>
<td>125</td>
<td></td>
</tr>
<tr>
<td>3 - 4</td>
<td>51</td>
<td>9</td>
<td>7</td>
<td>13</td>
<td>5</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>4 - 5</td>
<td>33</td>
<td>8</td>
<td>3</td>
<td>8</td>
<td>5</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>5 - 6</td>
<td>12</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>6 - 7</td>
<td>11</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 - 8</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 - 9</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 - 10</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 - 11</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 - 12</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 - 13</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 - 14</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 - 15</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 - 17</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 - 18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 - 19</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 - 20</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Data for reserve period ended November 2.
District has record year in sugarbeets

In the Ninth district as a whole, and in each of its sugarbeet producing states, receipts to farmers for the 1960 beet crop hit all-time records. Montana produced its biggest crop since 1940. Minnesota and North Dakota, which planted more acres to sugarbeets than ever before, produced the biggest crops of their history. They also achieved state records in yields of almost 13 tons to an acre.

The district sugarbeet crop this year accounted for over $38 million in cash receipts, out of the nation’s total—also a record—of $240 million. In the Red River Valley alone, receipts to farmers totaled $18 million.

In almost every aspect, it's been a record year for sugarbeets.

The adaptable beet

A sturdy, awkward plant with a thick fleshy taproot and ample floppy stem, Beta vulgaris—the sugarbeet—originated somewhere in eastern Asia. The adaptable beet now grows as far south as Spain and Iran and as far north as central Sweden, though it is concentrated in the temperate zone stretching from northern France to the Ukraine. An average beet is 15 to 18 inches long, weighs two pounds and produces 14 teaspoons of sugar.

The beet demands a long growing season with temperatures around 65 to 70 degrees, and a regular water supply—natural or irrigated—of over 20 inches annually. Sugarbeets account for a third of world sugar production (second to the tropical and semi-tropical sugarcane), and for two-fifths of the sugar grown in the United States.

Development in the district

South Dakota, currently the district’s smallest producer of sugarbeets, was first to experiment with them in the 1880s, some two decades after the U.S. sugarbeet industry was born in California. It was not until the 1920s, however, that beets were grown commercially in the state.

Minnesota farmers grew the district’s first commercial crop in 1892, when two carloads were harvested near Minneapolis. The district’s first beet sugar factory was built nearby, at St. Louis Park, in 1893. Montana’s sugarbeet industry opened with a factory at Billings in 1906. Minnesota and Montana now rank fourth and fifth, respectively, among the nation’s sugarbeet-growing states. (California, Colorado, and Idaho are the top three.)

North Dakota farmers grew that state’s first crop in the 1920s, during an expansion period that saw four new plants built in the district. Since then, three new plants have been built, bringing Montana’s daily processing capacity to 9,200 tons of sugarbeets, and Minnesota’s to 10,900 tons. (Some sugarbeets from southern Minnesota are processed at Mason City, Iowa.) South Dakota’s only plant, which also handles sugarbeets from northwestern Nebraska, gives the district a total daily processing capacity of 21,900 tons.

Growing and processing methods

In the western Dakotas and Montana, beet crops are generally irrigated; in southern Minnesota and the Red River Valley they are not. Valley farmers plant beets only on land which has laid fallow
the preceding year. Because the roots penetrate to a depth of six or seven feet, loosening soil and leaving rootlets to decay, the beet is an excellent rotation crop with grasses and other shallow-rooted plants.

Sugar beets are planted in April or early May, and harvested over a six-week period ending about November 1. During the “campaign”—the refining process which follows—plants operate on a 24-hour-a-day schedule, usually for 60 to 100 days. The current campaign will end around the first of the year in the Red River Valley, and a few weeks earlier elsewhere in the district. Plants in Montana will employ 1,200 to 1,500 workers during this processing period.

Beets arrive at the processing plants with the foliage and top of the crown removed. The beet top is used for cattle feed, sometimes as silage.

Sugar is extracted from beets in one continuous operation which uses, for each 100 pounds of refined sugar, 35 pounds of coke and limework and 80 pounds of coal. The sugar juices, extracted in heating and soaking processes, are purified, thickened, and then crystallized.

The resulting pure sugar is exactly identical with pure sugar made from cane, or from palm trees, maple trees, sorghum, watermelons or several other plants. Beet pulp, left after the extraction process, is used as cattle feed.

**Trends in growing and processing**

Production at processing plants has increased with the advent of improved machinery. The number of beet sugar plants in the United States decreased from 83 in 1943 to 65 at present, due to shifting production, increased efficiency of new plants, and obsolescence of old ones.

Sugar beet field work has become increasingly mechanized. As recently as 1944, only 2.5 percent of the beet acreage was harvested by machine. Now the industry is virtually 100 percent mechanized. With modern machinery, only slightly more than one hour of field work will produce enough beets for a 100-pound bag of refined sugar. Single machines can plow up the beets, slice off their tops and load them onto trucks in one operation. Since 1948, labor productivity in sugar beet production has risen 30 percent. Spring field work has been reduced by mechanical beet thinning, and by a new single-germ seed which holds promise for eliminating much of the need for thinning.

Reflecting these trends, beet acreage per farm
Sugarbeet growing areas of the 9th district

in the nation increased from 24 acres in 1947 to 32 in 1956. The number of farms growing beets dropped by 15,000—to 25,000—over the same period.

The trend toward fewer, larger sugarbeet farms has also been clear in the district. Acres per farm planted to sugarbeets increased in every district state since 1940, although in North Dakota there was a drop from 1950 to 1957. Minnesota has had the largest increase, from 30.6 acres per farm in 1940 to 77.4 acres per farm in 1957.

ACRES PER FARM IN SUGARBEETS

<table>
<thead>
<tr>
<th>Year</th>
<th>S.D.</th>
<th>N.D.</th>
<th>Mont.</th>
<th>Minn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>25.6</td>
<td>37.8</td>
<td>29.4</td>
<td>30.6</td>
</tr>
<tr>
<td>1945</td>
<td>27.8</td>
<td>51.2</td>
<td>33.0</td>
<td>49.6</td>
</tr>
<tr>
<td>1950</td>
<td>30.2</td>
<td>69.5</td>
<td>33.8</td>
<td>74.3</td>
</tr>
<tr>
<td>1955</td>
<td>37.6</td>
<td>63.6</td>
<td>37.7</td>
<td>78.1</td>
</tr>
<tr>
<td>1957</td>
<td>43.4</td>
<td>66.7</td>
<td>43.2</td>
<td>77.4</td>
</tr>
</tbody>
</table>

Trends of planted sugarbeet acreage in the district states have been mixed during the last two decades. The trends in Minnesota and North Dakota are somewhat similar, exhibiting a strong upward movement since the 1940s. The acreage in the two states is largely in the Red River Valley, where growers have made the greatest strides toward mechanization, in turn increasing acreages per farm.

The Valley area is served by three large, modern plants belonging to one processing firm. The firm’s desire to utilize its most efficient plants to the maximum may explain the strong upward trend in acreage in the valley from the mid 1940s to 1954, the first year of acreage allotments.

The Minnesota planted acreage trend line has exhibited greater variation than has North Dakota’s. North Dakota’s beet acreage is confined to the Valley to a greater extent than is Minnesota’s. And, in the southern Minnesota beet area, there are relatively better alternative crops—corn and soybeans—than there are in North Dakota. Thus more acreage tends to move in and out of sugarbeets in Minnesota.

South Dakota’s beet acreage, concentrated in the Belle Fourche area, has been plagued by irrigation water shortages. Some land formerly used for crops, including sugarbeets, has been turned to grazing. Thus beet acreage has declined over the past 20 years.

Montana, a state served by three sugar processing firms, has experienced a pattern in sugarbeet acreage much different than that of other district states. The marked variations in acreage may be partially explained by the alternative crops available in Montana’s irrigated valleys and the re-

Complete Seaway series available

The series on the effects of the St. Lawrence Seaway on the Ninth district economy was presented in the following Monthly Review articles:

Seaway and Ninth district economy:
Port development March 1960
Agricultural exports and the Seaway May 1960
Seaway and iron ore August 1960
General cargo and the Seaway October 1960

Copies of each of the articles are still available. Please address requests to:
Monthly Review, Research Department, Federal Reserve Bank of Minneapolis.
turns received from the sale of these crops. Prior to the years of acreage allotments, some of the variations may be explained by the contracting activities of the sugarbeet companies serving the state.

**Cash receipts from sugar beets**

Sugarbeet cash receipts as a part of total cash receipts to district farmers increased from a .6 percent average in the 1940-44 and 1950-54 periods, to .9 percent is 1955-59.

Sugarbeet cash receipts, as a part of total cash farm receipts, are highest in Montana, at 2.5 percent, and lowest in South Dakota, at .2 percent. Of all Montana field crops, sugarbeets are third in cash receipts. They rank sixth in North Dakota, eighth in Minnesota and eleventh in South Dakota. Although far outdistanced by other commodities in state totals, they rank high in importance for the 58 district counties in which they are grown.

Estimates of cash receipts to farmers for the 1960 sugarbeet crop are $14,333,000 in Minnesota; $14,368,000 in Montana; $7,778,000 in North Dakota; and $1,077,000 in South Dakota.

**Regulation of the sugar industry**

Because costs are higher for sugar produced from beet than from cane, the sugar beet industry is protected almost everywhere by tariffs and subsidies. Because of large capital investments in processing plants which stand idle much of the year, and which most efficiently handle large quantities of beets, processing has become highly concentrated (there are only 65 beet sugar plants belonging to 16 companies in the United States) and strictly regulated.

The U. S. sugar industry has been regulated since 1934 by the Sugar Act and its numerous amendments. The Act provides for determination of total U. S. sugar requirements year by year, and establishes quotas to fill it. Foreign suppliers are usually allotted about 55 percent of the total, and domestic suppliers 45 percent. Non-quota purchases may be made as required. The Act also sets payments to domestic sugarbeet and sugarcane growers, and prescribes labor, wage, price and marketing requirements.

The U. S. Department of Agriculture set the 1960 requirement for sugar at 9,400,000 tons. U. S. beet growers were allotted 2,043,500 tons. Cane growers in Florida, Louisiana and Hawaii were allotted 1,789,000 tons, and in Puerto Rico 1,192,000 tons. Cuban cane formerly supplied

---

**Planted acreage of sugarbeets in the 9th district**

![Graph showing planted acreage of sugarbeets in the 9th district]
96 percent of the foreign quota, amounting to 3,120,000 tons in 1960. This figure was reduced after the quotas were allotted, however. The Philippines and several Central and South American countries were allotted the remaining 4 percent of the foreign quota.

Allotments based on the total domestic quota are given to U.S. processing plants. The plants in turn contract for the given amount, dividing it up among beet farmers in their areas. This vertical integration through contract arrangements gives the farmer an assured market, and the processor an assured supply of beets.

Initial payments to beet farmers are made by the processing plants in November or December. A second payment, conditional upon compliance with regulations on child labor, minimum wages and maximum marketings, is made by the government. A company payment in March is based somewhat on sales, and a final September payment depends on net returns of the processors.

Government payments to beet growers are more than covered by a special tax of 50 cents per hundredweight of sugar, raw value, which is imposed on all sugar processed in the United States or imported for direct consumption.

National trends and district outlook

Consumption of sugar in the United States has increased at about the same rate as population. About 92 pounds per person are now consumed annually—well below the level in such countries as Iceland, England and Denmark.

While total sugar production and consumption have increased, the uses of sugar have progressively shifted from the household to industry. Relatively less is used for home canning and baking as more is used for industrially canned and frozen foods, and for food mixes, beverages and bakery goods. These trends are expected to continue.

The cutoff of Cuban sugar supplies led to removal of all acreage allotments on sugarbeets for the coming year, to encourage domestic production. Substantial increases are planned in the Ninth district, although acreages are still tied to the processing capacities of plants, and to their marketing restrictions, which remain in effect. The plants can increase the amounts of their contracts only because they have been operating below capacity.

Increases of 10 to 15 percent are expected next year in Minnesota, which this year planted 80,350 acres to sugarbeets, and in North Dakota, which planted 41,871 acres. Indications point to an increase in southern Minnesota acreages during the next few years. Montana expects a 20 to 25 percent increase, from the present 61,319 acres. South Dakota acreage will jump 100 percent, from the present 6,440 acres. This expansion will likely occur around Huron, in the east central part of the state, and around Elk Point in the extreme southeast. The decline in acreage in the traditional Belle Fourche beet producing area is expected to continue. Total district beet acreage beyond next year, however, highly dependent as it is on the international situation, is necessarily a matter of considerable uncertainty.