

Money to spare: excess reserves

Excess reserves of member banks, after their violent gyrations during the 1930's, have in recent years become one of the more stable economic statistics. Always in search of regularities in human behavior, economists take pleasure in such information. Their pleasure is less than complete, however, unless they can formulate a plausible explanation of the regularity. This article seeks to explain some of the reasons why banks keep funds idle.

Individual bank decisions

The explanation begins with an individual banker pondering whether to make an investment. If a loan is made the bank will have a better customer. And increased earnings may be expected whether a loan is made or a security bought. But the bank will have invested funds which cannot then be put to other uses. One of these is to hold funds idle against the ever-present contingency of customers writing checks in greater volume than deposits are made. The possibility of a period of unfavorable clearings is the reason why a banker sometimes is forced to take a more cautious view than the long-run profit expectations of a borrower might suggest. Decisions about lending and investing funds affect a bank almost immediately and the realities of the moment may have to take precedence over the probabilities of the future.

In any case, a banker is daily faced with the particular problem of maximizing profits for his bank's stockholders while keeping within the many-dimensioned limits on the quantity and quality

of the investments and loans he can make. In addition to being limited significantly by his own estimate of the loss of liquidity he is willing to assume in extending credit to customers or in purchasing securities, his own judgment is bounded by the rules and interpretations of the bank regulating authorities.

Laws and regulations also limit the amount of deposits a bank can create by lending or investing. Banks create deposits every time they lend or invest, when they aren't lending or buying securities from one another. But a limit to their creativity exists, since they are required to keep uninvested funds equal to specified fractions of their deposit obligations. Their total legal reserves must equal or exceed their legal reserve requirements, which are defined as a prescribed fraction of net demand deposits¹ plus another fraction of time deposits.

For net demand deposits the legal required reserve ratio is presently 16.5 percent at central reserve city and reserve city banks. The comparable ratio at country member banks is 12 percent. The required reserve ratio on time deposits is 5 percent at banks in each of the three classes. The Federal Reserve Board is authorized under the Federal Reserve Act to establish reserve requirements on net demand deposits within the range of 10 to 22 percent for central reserve city and reserve city banks and 7 to 14 percent for country mem-

¹ Net demand deposits equal total demand deposits less both checks in the process of collection and balances due from domestic banks.

ber banks. The time deposit required reserve ratio can be established within the range of 3 to 6 percent.

Reserve requirements for member banks of the Federal Reserve System can be satisfied with balances kept at the Federal Reserve or with currency and coin funds. For member banks, the federal law requires that reserves in Federal Reserve balances and in cash average at least as much as their average daily requirements over the course of a reserve period. This is seven days for central reserve city and reserve city banks, running from Thursday through the following Wednesday. Country member banks have a two-week legal reserve period which ends on alternate Wednesdays.

Nonmember banks also have legal reserve requirements. These requirements as specified in state laws can be satisfied with reserve balances that include vault cash, deposits at authorized reserve depository banks, and in some states specified kinds of securities as well. Balances at least as large as requirements must ordinarily be maintained day by day, although the regulations vary somewhat from state to state.²

² A discussion of the reserve requirements of nonmember banks appeared in the *Monthly Review* for April, 1959.

Desired levels of excess reserves

Regardless of the length of the legal reserve period, the banker faces decisions each day which affect and are affected by the level of excess reserves. If clearings add more deposits than are lost, a bank gains reserves. On any occasion when accumulated reserve requirements are less than accumulated reserve balances for an elapsed portion of a reserve period, a banker has accumulated excess reserve funds. The likelihood that he will invest those excess reserves grows with his assurance that unfavorable clearings will not occur in the remaining days of the reserve period as well as with an improvement in the investment opportunities that are open. For a particular amount of liquidity in its loan and investment portfolio, one would expect a bank to put idle funds to work in as great a quantity as is profitable. In general, these factors would bear on how fully the banker might utilize his reserves:

- (1) How closely he can predict the direction in which clearings will run during the course of the remainder of each reserve period.
- (2) The costs involved in buying and selling the various classes of investments.
- (3) The profits obtained from such investments.

Chart 1—Excess reserves ratios by size of bank

Ninth district member banks, 2 weeks ending May 18, 1960

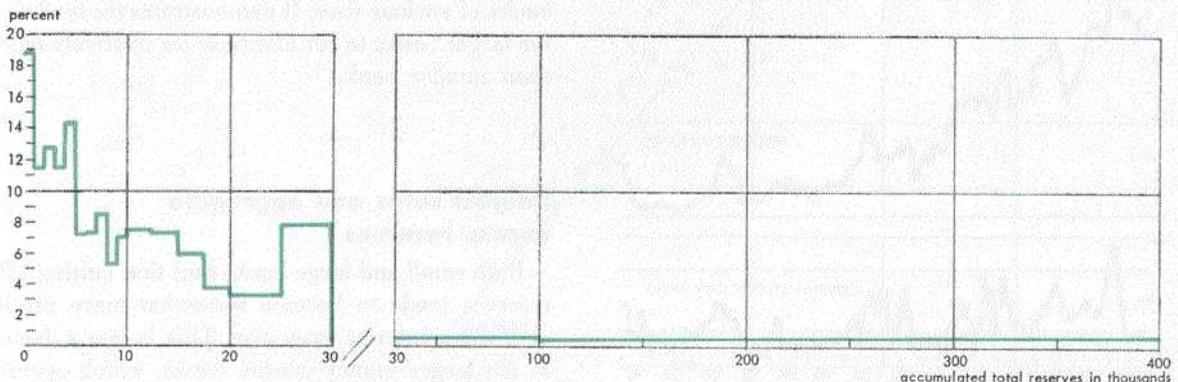
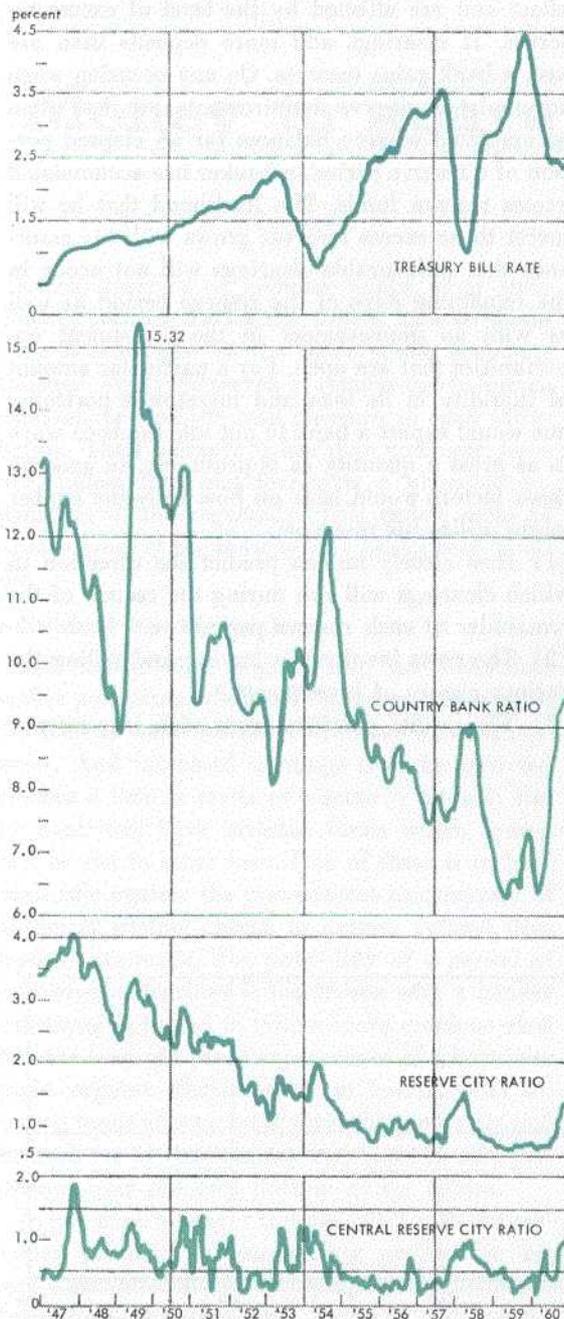


Chart 2—Excess reserves ratios and interest rates

1947-1960 3-month moving averages



(4) The liquidity of such investments.

Small banks tend to have a larger fraction of idle reserves than do large banks because, with fewer customers, small banks cannot predict clearings as accurately as larger ones can. Hence, they need a larger fund of idle reserves to avoid the expenses of borrowing or selling assets if net deposit losses should exceed their excess reserves. Furthermore, trading costs in themselves might restrain their small transactions more than would be the case in a bank of greater size. Economies of size may exist in the management of investments which make it relatively more profitable for large, rather than small, banks to cut their excess reserves. For example, large banks can afford to employ specialists to invest their idle reserves or to sell securities as the occasion demands. Within limits established by top management, such specialists make decisions about borrowing or repaying the Federal Reserve and about buying or selling Federal funds and government securities.

In the two weeks ending May 18, 1960, the 28 Ninth district member banks that held daily reserve balances which totaled \$30 million or more had excess reserves of only 1 percent of their total reserves. The 19 banks in the \$20 to \$30 million range held 6 percent of their funds idle. The 66 banks in the smallest category, those with less than \$2 million in accumulated reserve balance totals in the period, left over 12 percent of their reserves idle. Chart 1 on the preceding page, shows the average ratio of excess reserves to total reserves for banks of various sizes. It demonstrates the tendency for larger banks to cut idle reserves relatively more than smaller banks.

Interest rates and aggregate excess reserves

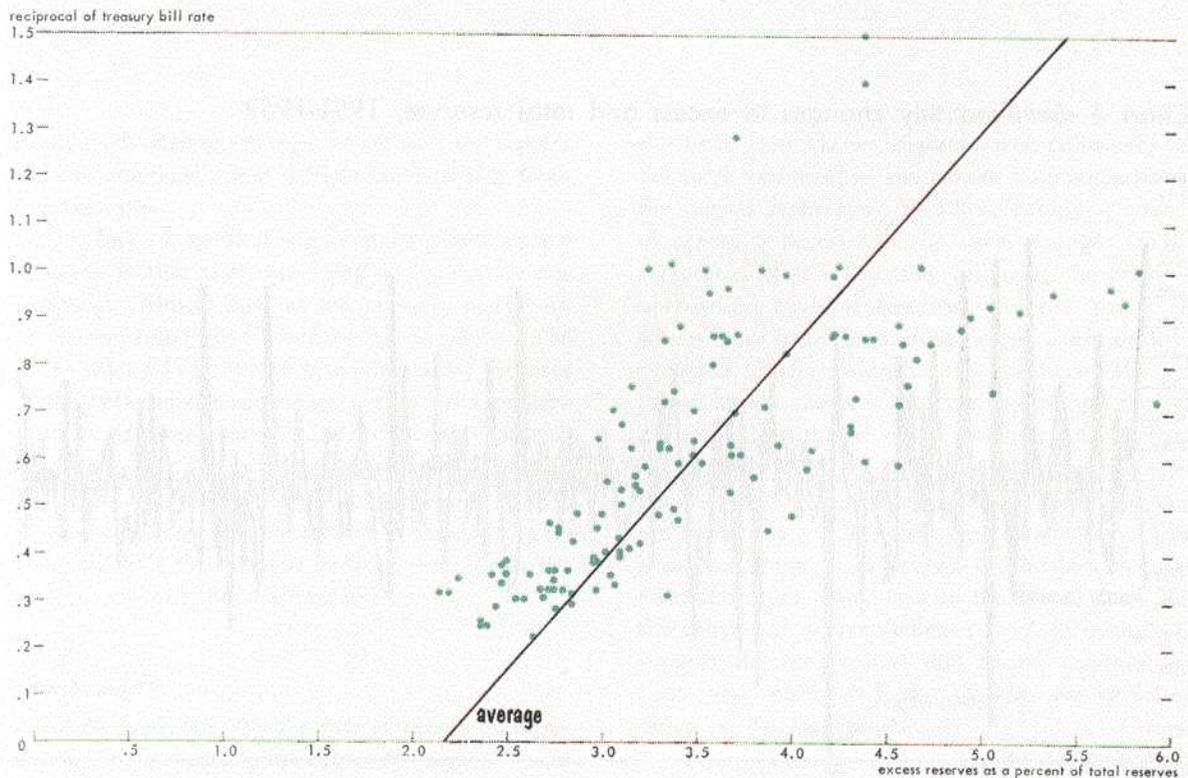
Both small and large banks find that cutting idle reserves tends to become somewhat more profitable when interest rates rise. This is less a factor at the larger money market banks, which operate

at a scale such that they are able to keep excess reserves almost to a bare minimum except in unusual circumstances. On occasions such as the mid-1930's, when the volume of highly liquid secondary reserve investments was very scarce and yielding very little, even these large banks built up excess reserves rather than assume unwanted risks in lending or investing. During periods when earnings on secondary reserve investments are very low, an increasing number of bankers tend to find the rewards of a closely managed reserve position not worth the bother. As a result, excess reserves tend to grow. Chart 2 plots 3-month moving aver-

ages of Treasury Bill rates and excess reserve ratios at the three classes of member banks. It demonstrates that excess reserves are inversely related to rates on highly liquid secondary reserve investments. This relationship is especially strong at the country banks which, of course, tend to be smaller institutions than the central reserve city and reserve city banks.

The fact that excess reserves rise when yields on secondary reserves fall permits one to estimate what the level of excess reserves will be. This proposition is illustrated in Chart 3, which rearranges 1949 to 1959 data in scatter diagram

Chart 3—Excess reserves ratios and treasury bill rate reciprocals, 1949-1959



form. The straight line drawn on the diagram represents the average relationship between Treasury bill rate reciprocals and excess reserves ratios of member banks. The relationship is such that one might expect a change in the bill rate to elicit an opposite change in the excess reserves ratio over 99 percent of the time.

Other factors

A refinement of the above explanation of the aggregate excess reserve ratio results if other factors are considered. Because excess reserves are perfectly liquid, one might expect that banks would want additional excess reserves to offset any loss of liquidity in other assets. Evidence appears to support the contrary proposition that banks seek to cut their excess reserves during periods of declining liquidity. To the extent that

borrowings measure lack of liquidity, this is shown from the fact that in the period 1947-1959 increases in borrowings were associated with cuts in excess reserves. The individual banker facing an impending reserve deficiency may very well borrow but he probably will not borrow so much that he will build up excess reserves of very great magnitude.

There is a further regularity in the variation of the excess reserves ratio that can be accounted for by such factors as seasonal movements of funds and changes in demand for credit. The excess reserves ratio over the period 1929-59 was typically 10 percent above its annual average in December and January and about 15 percent above the average in August and September, while in the period from February through May it was about 10 percent under the annual average. One must note that the seasonal pattern in excess reserves is not a

Chart 4—Semi-monthly changes in excess and total reserves, 1951-1959

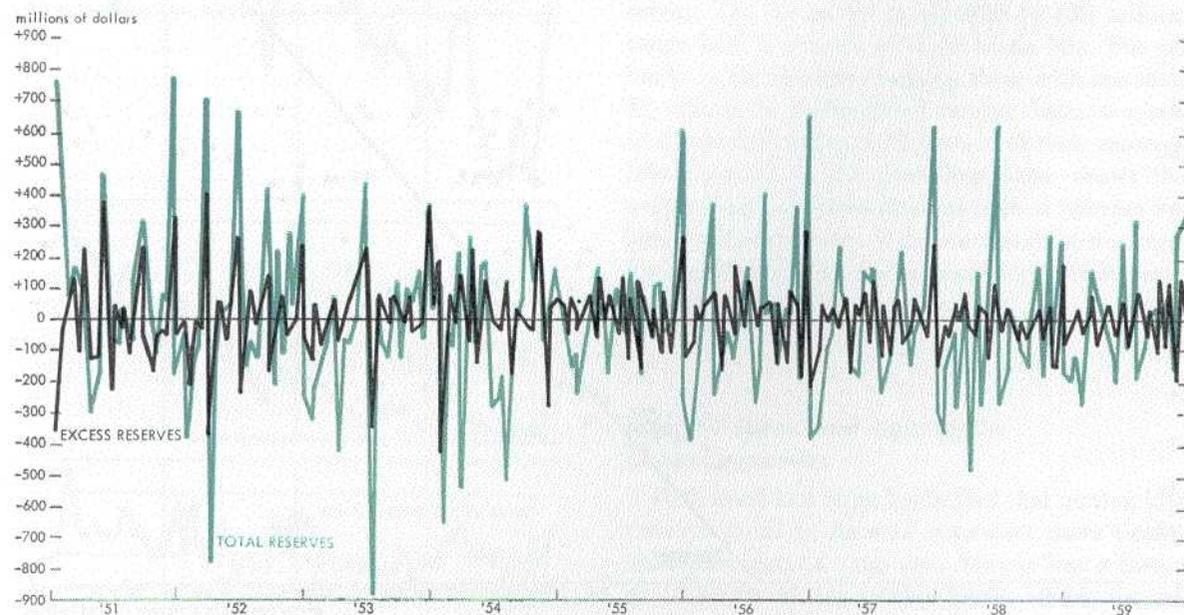
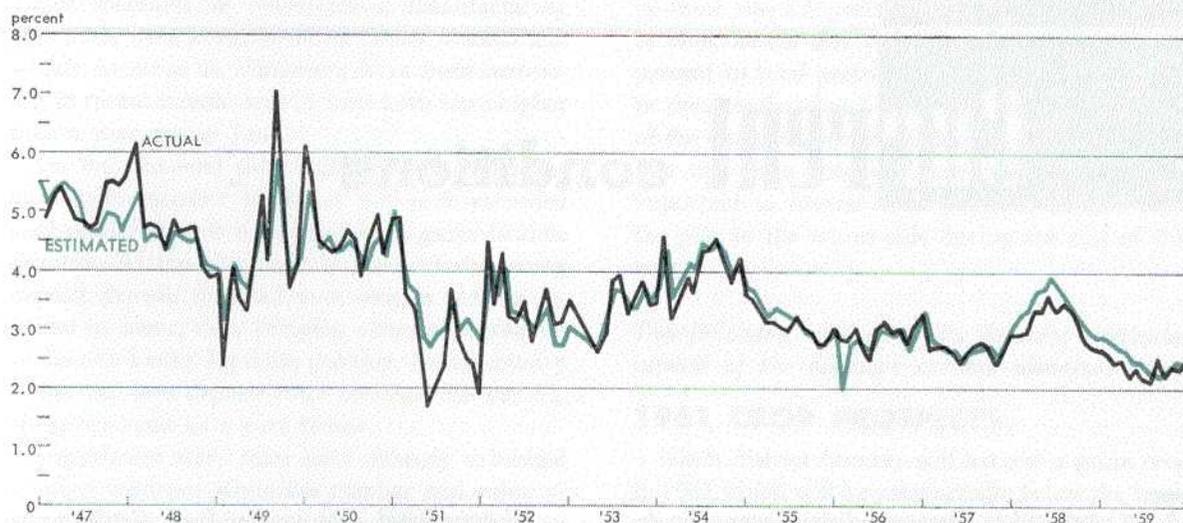


Chart 5—Estimated excess reserves ratios



particularly strong one and as a result the figures for any one year might deviate considerably from the averages.

The fact of greatest significance about excess reserves is that they are relatively stable in the short run. Almost half of the over-all variability in the seasonally adjusted excess reserves ratio in the period 1947-59 can be explained by the level of the ratio in the preceding period. The relative stability of excess reserves is further demonstrated by Chart 4, which records semi-monthly changes in excess reserves and total reserves. In absolute terms the increases and decreases in excess reserves were but half the changes in total reserves in the period to which the chart refers.

Conclusions

All of these factors—the rate of return on alternative investments, liquidity, seasonality, and

short-run invariance—explain over two-thirds of the total variation in the excess reserves ratio in the period from 1947 to 1959. Taking a chance of erring 5 percent of the time, changes in the reciprocal of the Treasury bill rate, the ratio of borrowings to total reserves, and the excess reserves ratio in the preceding period could each be expected to affect significantly the seasonally adjusted excess reserves ratio in the current period. Actual and estimated excess reserves ratios appear on the final chart. To the extent that the estimates parallel the actual values, the explanation presented here might be considered satisfactory. That it is incomplete is evidenced by the fact that the estimates don't coincide with the actual data. But the degree of correspondence is close enough to support the conclusions that excess reserves are reasonably stable and part of whatever variation exists can be anticipated.

—WILLIAM DEWALD

prerecession levels of a year earlier although major increases in construction, manufacturing and trade were noted in June. Hours worked and weekly earnings in Minnesota have been increasing in recent months and in June both were higher than a year ago in June.

On the financial side, both deposits and loans at district member banks at mid-year exceeded year earlier figures with substantial gains in time deposits. At the city banks a particularly strong deposit growth is noted with only a modest increase in loans, thus bringing some improvement in the city banks' liquidity position. At the country banks the loan-deposit ratio on June 28 was 51, about the same as a year earlier.

Department store sales have recently exhibited a rising tendency while the number and value of new building permits have also been on the plus side. Bank debits in June were a plus 8 percent compared with June of 1960. Perhaps the best over-all measure of economic well-being is, how-

ever, the level of total personal income which, in June, was 2.5 percent above a year ago. Farm income, which last year contributed roughly 12 percent to total personal income, may be reduced in the months ahead. Still it is doubtful, in view of the current strength in the rest of the economy, that this farm income factor will be sufficiently important to reverse total personal income from the plus to the minus side during the rest of this year.

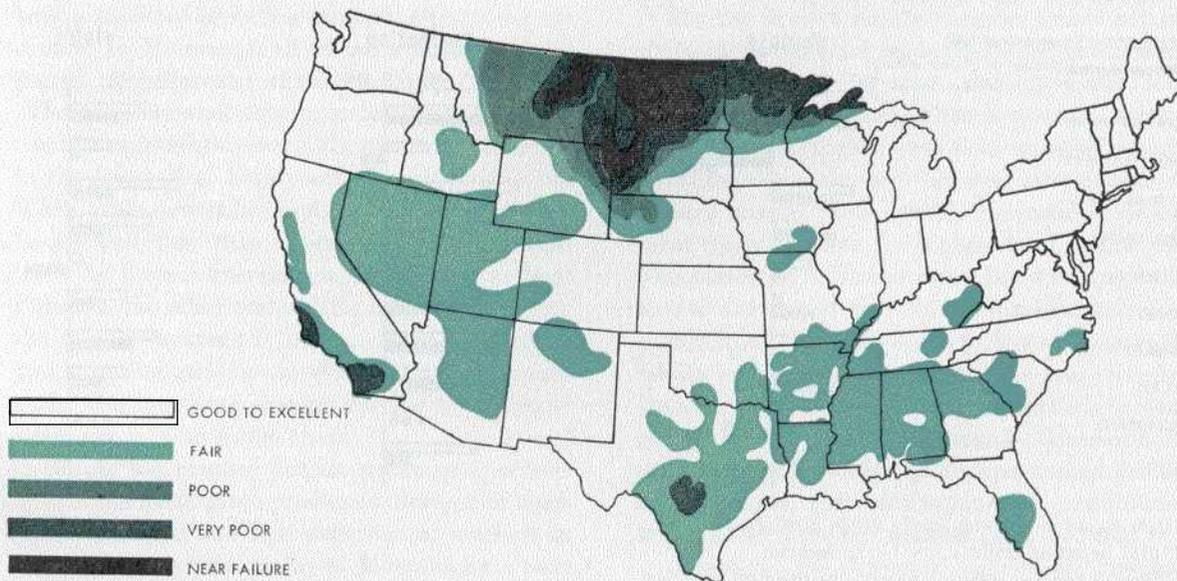
The following selected topics describe particular aspects of the district's current economic scene:

1961 CROP PROSPECTS

Ninth district farmers will harvest a grain crop in 1961 which will be substantially below the levels of a year ago, according to forecasts made by the U. S. Department of Agriculture on July 1. In the areas shown on the accompanying map, small grain producers have lost heavily this year to their nat-

Crop prospects, July 1, 1961

Source: U.S. Department of Agriculture



ural adversaries—drouth, heat and the grasshopper. Scattered reports from throughout the district indicate that the small grain crops have continued to deteriorate since the July 1 forecasts; as a result, the income from these crops is expected to be considerably reduced this year.

An estimate of the income effect of the drouth was made by applying the 1960 crop prices to the small grain crop output in 1960 and expected production in 1961. For the four states, the cash value of grain production due only to drouth is estimated to fall by \$357 million, or 27 percent, from last year's crop value. However, because of short supplies of some crops, price increases may offset part of this loss; recent price advances in flax and durum would seem to be evidence of this. Most severely affected is North Dakota, where drouth is expected to reduce the cash value of crops, in terms of 1960 prices, by 56 percent. The decrease in crop value due to drouth is estimated to be 24 percent in Montana, 17 percent in South Dakota and 11 percent in Minnesota. However,

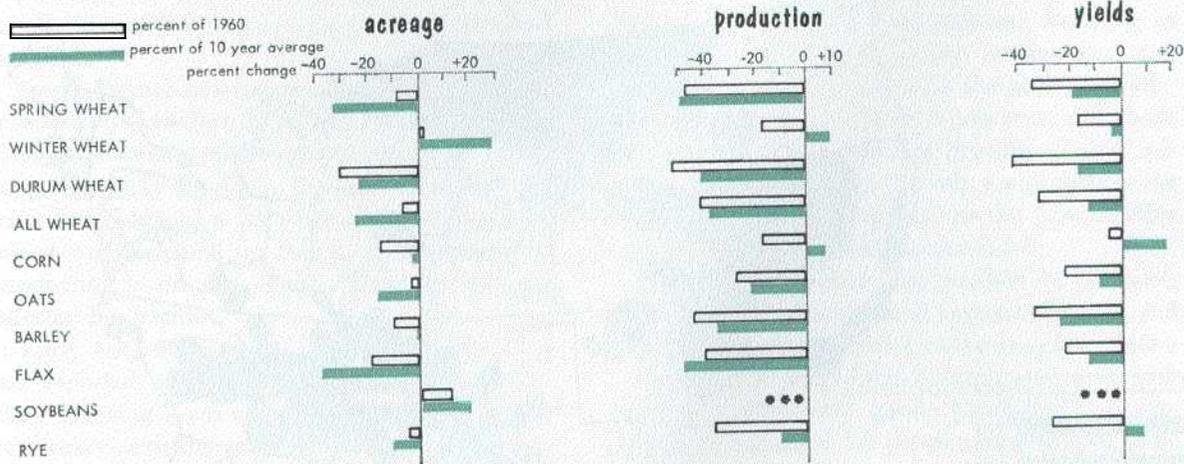
the drouth seems to have had little effect on the corn crop, since the July 1 estimated yield for corn in the district's major corn areas exceeds the 1960 yield by one-half bushel per acre.

In North Dakota, the most hard-hit state in the district, production is off more than 50 percent for most small grains. Only flax is expected to produce as much as one-half of last year's output. Production of all varieties of wheat, including spring and durum, is estimated at 43 percent of last year's and 48 percent of the average wheat production of 1950-59. While the acreage of wheat was down 12 percent from 1960, the average yield per acre dropped 52 percent, moving from 13.5 bushels per acre in 1960 to 6.5 bushels per acre estimated for this year. Yields for other small grains were off similar amounts.

In Montana, the outrun of all wheat is expected to be about 25 percent less than 1960 and 38 percent less than the 10-year average. A fair degree of success was experienced in winter wheat production; however, spring wheat and durum are ex-

Prospective changes in crop averages, production and yields in Ninth district,* 1961**

Compared with 1960 and 1950-59 averages



*Data based on 4 states wholly within district only

**1961 based on USDA's July 1 crop forecast

***Production and yield estimates to be released in August

pected to fall 38 and 51 percent, respectively, from 1960 total production. Barley production in Montana is expected to be 23 percent less than in 1960. The acreages of most crops remained at about the 10-year average level except for flax and oats, where acreage was reduced, and winter wheat, where acreages are 24 percent greater than the 1950-59 average and 4 percent higher than a year ago. Crop yields per acre are estimated to be lower for almost all grains, the greatest decrease being a 30 percent drop in the spring wheat yield relative to last year.

ESTIMATED 1961 YIELDS PER ACRE AS A PERCENT OF 1960

	Spring Wheat	Winter Wheat	Durum	All Wheat	
Minnesota	65	92	44	66	
North Dakota	49	—	48	48	
South Dakota	73	74	74	74	
Montana	71	84	72	77	
	Corn	Oats	Barley	Flax	Rye
Minnesota	102	88	64	77	86
North Dakota	89	54	45	65	50
South Dakota	91	71	67	94	83
Montana	90	100	85	71	67

Grain production in Minnesota and South Dakota is expected to be less strongly affected by the drouth. In Minnesota, all wheat production is expected to be greater than the 10-year average, although somewhat less than last year. The dry conditions in northwestern Minnesota are reflected in the lower flax, barley and durum production. While grain output in South Dakota is expected to be generally less than a year ago, the deviations from the 10-year average are not so great as those found in the other states. The biggest drop from the 1950-59 average is in flax, down 25 percent, and in spring and durum wheat, down 20 percent each. The aggregate changes for the four district states can be seen in the chart.

Drouth has plagued district stockmen as severely as it has small grain producers. Because of stock water shortages and feed deficiencies, ranchers in the Dakotas and the plains of Montana have been

moving cattle to market early and in substantial numbers. Calves and yearlings are being marketed at much lighter weights than normal, which is cutting into this year's income stream of district ranchers. Prices have held relatively well, as the widely publicized drouth has attracted considerable buying interest to the auction rings throughout the drouth area.

In addition to the early sales of the cattle normally marketed, this year many ranchers are finding it necessary to cull foundation stock sharply in order to adjust to water supplies and prospective feed supplies. The necessity of reducing herds will probably have its effect on ranchers' pocketbooks in 1962 and later.

RETAIL SALES

In the nation, retail sales continued to show encouraging improvement in June. According to the U. S. Department of Commerce report, seasonally adjusted sales were up 1 percent in both May and June. The increase in sales during the latter month, however, extended to a wider range of merchandise. Sales of most major lines were either maintained or advanced from the May volume.

The rise in sales during May was traced primarily to increased sales made by automotive dealers. Sales movements in other durable goods were mixed and canceled out, while nondurable sales in May rose only slightly, less than one-half percent.

In June, the demand for new automobiles remained strong, while sales in the nation's department stores reached the highest level of the year. The seasonally adjusted index for the month rose to 149 percent of the 1947-49 base period, up 5 points from May and 7 points from January, the month in which the low for the year was recorded. Department store sales were influenced, to some extent, by extremes in temperature. Unseasonably cool and damp weather in May postponed the sale of sportswear, summer clothing, air conditioners and fans until the hot weather came in June.

In general, the consumer demand for merchan-

dise improved during the first half of 1961 but no real buoyancy was apparent by mid-July. Retail sales in the nation during the second quarter as a whole were about 1 percent above the first quarter volume, seasonally adjusted, with department store sales rising by about 2 percent.

The increase in personal consumption expenditures since the beginning of 1960 has been concentrated in services. There has been a steady rise in the outlay for such services as medical and dental bills, vacations, and rent payments, amounting to an increase of \$8 billion, annual rate, between the first quarter of 1960 and the first quarter of 1961. In contrast, the amount spent for nondurable goods rose at a much slower rate of \$2.5 billion. Expenditures for durable goods declined following the second quarter of 1960, reaching a low point in the first quarter of this year which was \$5 billion below the annual rate of a year ago.

Consumer buying power has increased as a result of a rise in personal income and a decline in consumer debt. Personal income in the nation declined to a low of \$406.2 billion in February, seasonally adjusted annual rate. By May it had risen to \$413.7 billion, which was 1 percent above the peak reached last October before it turned down in the recent recession. Consumer credit outstanding declined in each of the first three months of this year, then rose in April and increased by \$418 million in May. On a seasonally adjusted basis, consumer credit outstanding in May rose for the first time this year; in April, it rose substantially less than the usual seasonal amount.

According to the Survey of Consumer Attitudes and Buying Inclinations conducted by the Survey Research Center of the University of Michigan, consumers in May and June were more optimistic about economic prospects in the following twelve months and planned to increase their purchases moderately. Plans to buy automobiles were reported somewhat more frequently in May and June than a year earlier, with a particularly large proportion of plans to purchase new cars reported for the fourth quarter of this year. Plans to buy houses

were also expressed more frequently than a year earlier, although substantially less frequently than in May-June 1959. Intentions of homeowners to make expenditures for home repairs and alterations were about the same as in May 1960, but plans to buy major household durable goods continued well below year-earlier levels.

According to trade reports, merchants in most regions of the nation anticipate a further improvement in sales and many have placed larger orders with their suppliers. Orders outstanding for merchandise at department stores have risen more sharply than is normal at this time of year.

Ninth district

During the first six months of 1961, retail sales in the district followed the national trend. Department store sales improved in most areas of the district. In the second quarter as a whole, the adjusted sales rose over 3 percent above the first quarter volume, while the seasonally adjusted index in June rose to the highest level of the year.

Although district department store sales continued to increase in late June, there seemed to be signs of a leveling off. In the first half of July, department store sales continued to improve in the Twin Cities metropolitan area but were weak in the Duluth-Superior area and, according to information available on general economic conditions, sales have also fallen off in many smaller district cities.

The sale of new automobiles in the district during May did not improve so much as it did in the nation. In the four district states, the registrations in May increased less than usual. In both April and May, registrations were 13 percent below a year ago.

In this district, consumer buying power has not increased since the first of the year as it has in the nation. In Minnesota, Montana and South Dakota personal income, seasonally adjusted annual rate, declined between January and June and in North Dakota remained fairly stable.

Merchants in many regions of the district are

pessimistic in their outlook for sales during the latter half of the year. A major drouth extends over most of northern Wisconsin, northern Minnesota, North Dakota, western South Dakota and the eastern two-thirds of Montana. In the western Dakotas and eastern Montana some localities have also been plagued by grasshoppers. At the beginning of July, emergency farm programs were in operation in 109 counties in Minnesota, the Dakotas and Montana and additional counties were added during the month. The drouth has not only reduced the yield on grain crops but has destroyed pastures and meadows, the source of feed for cattle now and next winter. Even more serious is the water shortage that has developed in some regions. It seems probable that farm income in many regions will be drastically reduced for a year or longer.

Under these circumstances farmers have tightened their purse strings. Farm equipment business in some urban centers has declined to the bare essentials that farmers must have to maintain their operations. Some dealers in eastern Montana and western North Dakota have reported a decline in sales of as much as 70 percent. Department store sales in some cities in this area in June were down from 3 percent to 25 percent from last year.

In the Lake Superior iron mining regions, personal income in the aggregate has been low since 1957 and no improvement is again in sight for this year. As a result, retail sales have been depressed for some time and the outlook remains unaltered.

Since industrial firms in this region supply farm merchandise, as well as other products used by both urban and rural families, the reduction in personal income over such vast stretches of the district will also have its effect on the volume of business in the district's industrial centers.

MID-YEAR CONDITION REPORT

The principal changes in the condition of Ninth district member banks in the first halves of this year and last are revealed by the table below. At both city and country member banks, the addition

to loans in the first half of this year was little more than two-thirds of the year-earlier increase. The seasonal loss of demand deposits this year was virtually identical with the year-earlier loss at both groups of banks. But time deposit growth was much larger, with the result that total deposits of all district member banks fell only \$62 million in the first six months of 1961. This was in contrast to a decline of \$145 million in the comparable period last year.

CHANGE OF DISTRICT MEMBER BANK LOANS AND DEPOSITS (millions of dollars)

	First Half 1960	First Half 1961
City Banks		
Loans*	+ 41	+ 26
Deposits	- 65	- 11
Time	- 1	+ 51
Demand	- 64	- 62
Country Banks		
Loans*	+ 82	+ 56
Deposits	- 80	- 51
Time	+ 10	+ 39
Demand	- 90	- 90

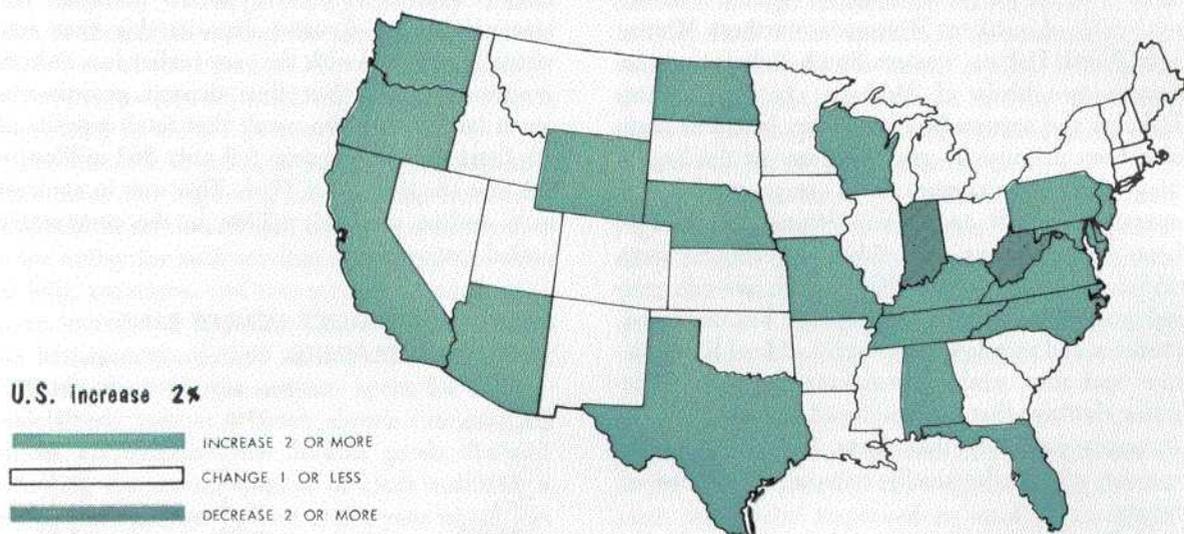
*Excluding loans to commercial banks and valuation reserves.

FARMLAND PRICE DROP EASED

The decline in land prices that occurred last fall appears to have been arrested or at least greatly modified, according to a recent U. S. Department of Agriculture report. During the last four-month reporting period ended March 1, 1961, farmland price increases, most of which were small, were reported for 21 states; these were sufficient to raise the national average 2 percent above that of last November. Although the March 1 national index reached a new high of 175 percent (1947-49=100), this was only 1 percent above a year earlier. Farmland prices in North Dakota increased during the four-month period while those in Montana and Minnesota fell slightly. South Dakota reported no change in farmland prices during the four months ended March 1, 1961.

The corn belt region has shown the most sig-

Percent change in value of farmland, November 1960 to March 1961



nificant price developments since last fall. During 1960, prices turned downward, particularly in Iowa and Illinois; by last November, they were down an average of 4 percent from a year earlier. Although the downward trend has continued since last fall in Indiana and Ohio, Iowa shows a slight increase in the latest four-month period, while values in Illinois have remained unchanged.

Several reasons are cited for the movement in land prices. Most important is the improved outlook for national farm prices in 1961 due to the proposed higher price supports for many major crops and the payment made to farmers participating in the feed-grain program. The upturn in general business conditions has also been a factor, for the rise in prices of common stocks thus far in 1961 reflects strong optimism as to business prospects. With further declines in dividends in relation to market prices of stocks, the relative position of farmland as an investment has also improved.

However, over the last decade, capital appreciation of farmland has been substantially less than that of industrial stocks.

Although the prospect of higher farm prices for 1961 provides some short-term support for an increase in land values, it does not greatly alter the longer term inconsistency that has developed between net farm income and land values since 1954. If realized net farm income reaches \$12.6 billion in 1961, as is anticipated by USDA economists, this would be about the same as in 1954, yet prices of farm real estate have advanced by more than a third since then. Consequently, the rate of return on current market values has declined steadily in recent years. For the last two years, it has remained at about 3 percent.

The sharp rise in the use of land contracts in recent years has facilitated purchases with low down payments. Thus, many recent buyers of farms have substantially larger debts to repay than did the typical purchaser in the early fifties,

when land prices were substantially lower and farm income was slightly higher than it is now.

Land prices during the last two decades have increased steadily in the Ninth district (see table). Prices in Minnesota were off during the past year, but were steady or higher for the other states. Opinions reported to the USDA on national land price trends for the next six-month period were somewhat more optimistic than they were before the six-month period just ended. However, the consensus at present still leans heavily toward little change, or even a decline, in market prices.

The rate of voluntary transfers in the United States in the year ended March 1, 1961, was 8 percent below the previous year and the lowest since the early thirties. The rate of sales was lower in all except six states. It was down by a third in Iowa where the largest decline in market prices occurred last year. USDA economists indicate that with the total number of farms at a record low,

INDEX NUMBERS OF AVERAGE VALUE PER ACRE,
MARCH 1 (1947-49 = 100)

	1940	1950	1955	1960	1961
Minnesota	55	109	135	182	178
North Dakota	48	107	132	182	186
South Dakota	47	111	139	173	173
Montana	43	104	146	191	191
United States	49	103	133	173	175

the rate of 28.1 farm transfers per 1,000 farms probably represented the smallest total number of farm sales in many years. Real estate reporters concurred that the drop in number of sales resulted chiefly from weaker demand, rather than from fewer farms being available. The number of farms on the market has remained at a low level in recent years and no change can be observed in 1960-61. The rate of farm foreclosures and distress transfers continued at about the same low rate in 1960-61 as has prevailed for the last 10 years.





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