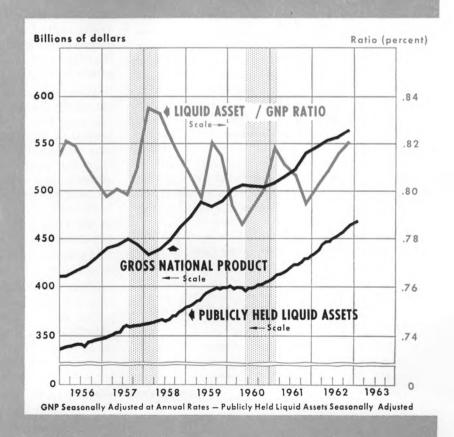
Business Review

FEDERAL RESERVE BANK of CLEVELAND

IN THIS ISSUE

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In the current recovery period, the liquid asset/G.N.P. ratio has deviated from its usual cyclical behavior. Despite the continuation of the recovery. the ratio turned up in the fourth quarter of 1961 and continued on an uninterrupted climb through the end of 1962.



Liquidity And Economic Stability

The amount of liquidity in the economy is a major determinant of both the pace and direction of business activity. Despite the absence of a widely-accepted definition of liquidity, economists and financial analysts agree that liquidity refers to a myriad of factors which determine the extent to which assets may be converted into money and credit may be made available as an alternative to the ownership of liquid assets.

The importance of liquidity in economic activity relates to its influence on spending and investment decisions in the private sectors of the economy. For example, when holdings of liquid assets are in excess of the amounts which they desire to hold, business firms usually restructure their assets by increasing inventories or by investing in additional plant and equipment. When consumers have excess liquidity, they may invest in less liquid, higher-yielding securities, or they may use the liquid assets to purchase additional goods and services. In these cases, the flow of spending and lending is increased, which in turn generates additional demand for existing real assets, current output, and financial assets. If there is unused capacity in the economy, such forces would work in expansionary fashion, and toward higher levels of production and employment. As the economy approaches full employment, a continuation of expansionary pressures may result in price increases, which may be accompanied eventually by an elimination of excess liquidity. This does not necessarily occur through a reduction in the volume of liquid assets, but rather through an expansion in the volume of transactions and price increases which necessitates larger holdings of liquid assets by the public.

When holdings of liquid assets are considered by the public to be at or below desired levels, the reaction is the opposite of that just described. In an effort to maintain de-

sired levels of liquidity, business firms may postpone plans to invest in plant and equipment and reduce investments in inventories. Consumers may also postpone plans for purchases of durable goods and attempt to reduce their indebtedness. The result of such actions is a gradual dampening of expansionary forces.

The Federal Reserve System exercises considerable influence over the level of liquidity through the conduct of monetary policy. By either stimulating or restricting the growth of bank reserves, the Federal Reserve can effect changes in the volume, availability, and cost of bank credit. The resulting variations in the level of bank credit, in turn, provide the means of making adjustments in the supply of money, the largest single component of total liquid assets. Therefore, in exercising control over bank reserves, the Federal Reserve System influences both the level of liquidity and the direction and pace of economic activity.

Monetary policy is usually conducted in a counter-cyclical fashion. That is to say, during periods of recession it is usually directed toward the creation of more money and hence may indirectly provide more liquid assets than the public wishes to hold in order to stimulate spending. In periods of excessive demand, the quantity of liquid assets may be increased at a slower rate, or even reduced, in an attempt to keep the rate of business expansion within sustainable limits.

An understanding of liquidity and the factors which influence decisions regarding the amount and composition of liquid assets is thus essential for the formulation, implementation, and evaluation of monetary policy. In attempting to evaluate the state of liquidity in the economy, a number of factors should be considered. For one thing, the increased importance of nonbank financial intermediaries and the changing nature of savings pat-

Composition of the Public's Holdings of Selected Liquid Assets

(Percentage distribution; selected dates)

Type of Asset	Jan. '57	Jan. '59	Jan. '61	Jan. '63
Currency and demand deposits	39.0	37.1	34.7	31.2
Time deposits in commercial banks	15.3	17.6	18.4	21.7
Deposits in mutual savings banks1	9.2	9.3	9.3	9.1
Savings and loan shares	10.8	12.9	15.6	17.5
U. S. savings bonds	15.8	13.4	11.7	10.4
Short-term U. S. Government securities ²	9.9	9.7	10.3	10.1
Total	100.0	100.0	100.0	100.0
Total (billions of dollars)	345.4	374.7	401.9	461.5

¹ Includes deposits in Postal Savings System.

terns require a careful examination of the composition of liquid assets. In addition, the adequacy of a given level of liquid assets is determined largely by the level of output and the volume of transactions in the economy. It is also influenced by the existing levels of short-term debt outstanding in both the business and consumer sectors of the economy. Finally, the availability of short-term credit may be as important in evaluating the liquidity situation as is the existing stock of liquid assets, taken by itself.

The remainder of this article is devoted to a review of the trend of liquidity during the past few years, with emphasis on the current expansion period. It also considers those factors which have served to influence the level and composition of liquid assets held by the public. (1)

Composition of Liquid Assets

If defined narrowly, liquid assets would include only the conventional money supply, i.e., currency in circulation and privately-owned demand deposits. However, a more widely recognized concept includes, in addition to the money supply, time deposits in commercial banks, savings and loan share accounts, deposits in mutual savings banks, U. S. savings bonds, and short-term U. S. Government securities. The above table pro-

vides information concerning both the growth and composition changes in total liquid assets between January 1957 and January 1963.

It is noteworthy that total liquid assets increased 34 percent in the six-year period under review. Furthermore, approximately one-half of the growth occurred after the start of the current recovery in business activity which began in February 1961 — a span of less than two years. Even more interesting, however, is the changing composition of these assets. The most striking change has been the declining proportion of total liquid assets that is accounted for by currency and demand deposits (money supply). The money supply accounted for only 31 percent of total liquid assets in January 1963, which compares with 39 percent in 1957. Over the same period, time deposits in commercial banks and shares in savings and loan associations, taken together, advanced from 26 percent to 39 percent of the total.

This, of course, demonstrates the important role played by interest rates in the public's choice of liquid assets. For example, in 1962, following widespread increases in interest rates on publicly-held time deposits at commercial banks and share accounts at savings and loan associations, time deposits increased \$15 billion (18 percent), savings and loan shares advanced \$10 billion (13.4 percent), and privately-owned demand deposits and currency in circulation increased \$2.2 billion

² Securities maturing within a year. Source: Board of Governors of the Federal Reserve System.

⁽¹⁾ Publicly-held liquid assets include those owned by consumers and business firms with the exception of commercial banks.

(1.5 percent). In contrast, from 1957 through 1961 the average annual increase in time deposits was approximately \$6 billion (9.8 percent) and savings and loan shares moved up at annual rate of roughly \$7 billion (13.8 percent), while the money supply advanced at an annual rate of nearly \$2 billion (1.3 percent).

The changing composition of liquid assets has provided the basis for some objections to the use of the conventional money supply as a measure of liquidity and as a method of measuring the accomplishments of monetary policy. It appears that the impact of monetary policy is more nearly reflected in holdings of interest-bearing liquid assets than in the money supply. For example, in the initial 23 months of the current expansion period, the money supply advanced \$4 billion, an increase of roughly 3 percent, while other liquid assets increased \$52 billion, or nearly 20 percent.

A number of analysts who continue to use the conventional money supply to evaluate monetary policy argue that recent increases in the rate of turnover of money, a measure of the intensity of its use, indicate that the present supply of money is insufficient to support an adequate level of spending and investment; and that there is a need for additional liquidity in the economy. The current level of interest rates on other liquid assets, however, serves as an inducement for the public to use demand deposits and currency more intensively in order to permit larger proportions of total liquid assets to be held in an interest-bearing form. As long as these conditions prevail, it seems reasonable to assume that further increases in liquidity will in large part take the form of interest-bearing assets rather than additions to the money supply.

Liquid Assets and Gross National Product

Another widely-used indicator of the liquidity position of the public is the relationship between total liquid assets (as previously defined) and GNP. As evidenced by the chart on the cover, holdings of liquid assets by the

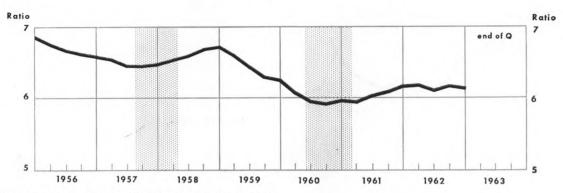
nonbank public have increased at roughly the same pace as GNP over the past six years. The relationship between these two series is more clearly demonstrated by expressing liquid assets as a percentage of GNP, as shown by the ratio line on the cover chart.

Until the current recovery, the liquid asset/ GNP ratio increased during recessions (as shown by the shaded areas on the chart) and subsequently declined during the ensuing recovery periods. In the 1958-60 expansion period, the ratio began to decline after the start of the recovery period in early 1958. The decline continued until the beginning of the steel strike in mid-1959. Reflecting the brief downturn in economic activity which accompanied the steel strike, the liquid asset/ GNP ratio began to rise. After settlement of the strike and a return to higher levels of output, however, the ratio resumed its downward course until the beginning of the most recent recession in the spring of 1960.

In the current recovery period, the ratio has deviated from its usual cyclical behavior. Despite the continuation of the recovery and in marked contrast to what usually happens during an expansion period, the ratio turned up in the fourth quarter of 1961 and continued on an uninterrupted climb through the end of 1962. It is noteworthy that a ratio of 80.9 percent at the close of the fourth quarter of last year exceeded the previous peak which occurred at the beginning of the expansion period in the first quarter of 1961.

The atypical behavior of this ratio in the current expansion period is attributable largely to two factors. First, the maintenance of monetary ease by the Federal Reserve System throughout the current recovery period is in marked contrast to the policy pursued in previous periods. Second, changes in savings patterns by the public have also played a major role. The aforementioned increases in interest rates on both time deposits and savings and loan share accounts at the beginning of 1962 encouraged individuals to hold a larger share of their savings in a liquid form. Moreover, the sharp decline in

Chart 1. CONSUMER LIQUIDITY RATIO



Source of data: Securities and Exchange Commission, and the Board of Governors of the Federal Reserve System,

common stock prices in the second quarter of 1962 and the accompanying uncertainty about the direction of stock prices, have added further to the willingness of individuals to place their funds in savings institutions and commercial banks.

Debt and Liquidity

Just as the amount and composition of liquid assets held by the public affect total liquidity, existing short-term debt represents both an immediate claim against existing liquid assets and a limiting factor on the ability to acquire additional credit. Thus, the repayment of debt with current income serves to increase potential liquidity since it restores borrowing ability and reduces potential claims on liquid assets, while an increase in short-term debt has the opposite effect.

In analyzing the relationship of short-term debt to liquid assets it is helpful to consider the consumer and business sectors separately. Each of these sectors behaves differently in response to changes in the volume of liquid assets and changes in the relationship of debt to liquid assets.

Consumer Liquidity

The ratio of consumer liquid asset holdings to consumer debt is shown in Chart 1. Consumer holdings of liquid assets are shown as a multiple of total consumer debt, with the series plotted quarterly.

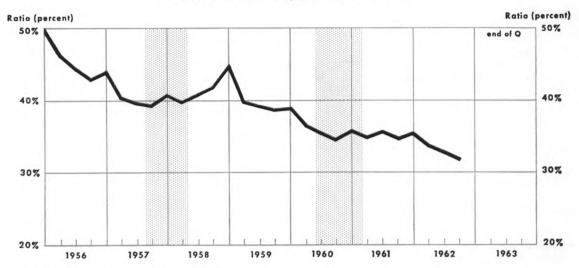
The usual behavior of consumer liquidity over the business cycle is to rise during periods of recessions and to decline in recovery periods. In the current recovery, however, consumer liquidity has remained relatively stable. At the end of 1962, consumer liquid assets exceeded consumer debt 6.1 times, as compared with 6.0 times at the beginning of the recovery period.

The lack of a significant decline in consumer liquidity in 1962 is somewhat surprising in view of the fact that consumer debt outstanding rose approximately \$6 billion, as compared with an average annual increase of \$3 billion from 1957 through 1961. The explanation for the continuation of a relatively high level of consumer liquidity during the past two years lies in the fact that, although consumer debt increased substantially, holdings of liquid assets expanded at an equally swift pace, thereby preventing a significant decline in consumer liquidity.

Corporate Liquidity

The conventional analysis of corporate liquidity considers the relationship between holdings of cash and short-term U. S. Government securities (liquid assets) and total cur-

Chart 2.
CORPORATE LIQUIDITY RATIO



Source of data: Securities and Exchange Commission.

rent liabilities (short-term debt). Chart 2 shows corporate liquid assets expressed as a percent of total corporate short-term debt.

The behavior of corporate liquidity has differed considerably from that of consumer liquidity in the past few years. As the chart shows, corporate liquidity has been declining steadily, with an especially sharp decline occurring in 1962. Between the beginning of 1957 and the end of 1961, the ratio of corporate holdings of liquid assets to corporate short-term debt declined from 43.9 percent to 35.3 percent, and by the close of 1962 it had declined further to 33.4 percent. (Not shown on Chart.)

A significant amount of the apparent loss of corporate liquidity during this period reflects an obvious bias in the method of measuring liquidity. The ratio of cash and short-term U. S. Government securities to current liabilities includes accounts payable as a short-term debt, but excludes accounts receivables as a liquid asset. Receivables have grown rapidly in recent years, as the extension of trade credit has been used increasingly as a competitive device, and corporations have used funds that might otherwise be main-

tained as cash balances in order to extend additional trade credit. As a result of this bias in the conventional method of measuring corporate liquidity, it appears to have been reduced far more than would have been the case if a more satisfactory measure were employed.

It is also important to remember that the expansion of trade credit has increased the liquidity of those who receive the credit, namely, consumers and other business firms. It may also provide for improvements in the availability of credit. For example, the extension of trade credit frequently results in a transfer of funds from large corporations, which have access to numerous sources of credit, to small- and medium-sized firms which may have only limited access to shortterm credit to finance their working capital needs. The extension of trade credit thus provides greater mobility and more intensive use of existing sources of funds. In addition, the extension of credit to large segments of the consumer sector may result in a wider distribution of liquid assets, and also aid in maintaining relatively high levels of consumption and investment.

Chart 3.
RATIO OF BANK LOANS TO DEPOSITS



Source of data: The Board of Governors of the Federal Reserve System.

Liquidity and Credit Availability

Still another indicator of liquidity is the ability of the economy to supply sufficient amounts of short-term credit. The ability of both bank and nonbank financial institutions to satisfy the demands for credit is originally determined by the amount of reserves made available by the Federal Reserve System, the composition of the assets of such institutions, and the nature of their liabilities.

One of the measures most frequently used in determining the availability of credit in the commercial banking system is total bank loans expressed as a percent of total deposits, i.e., the loan-to-deposit ratio. Chart 3 shows the behavior of this ratio between the start of 1957 and the close of 1962. The chart is plotted with an inverse scale so that a downward slope of the line indicates an increase in the ratio of loans to deposits, i.e., a decline in liquidity.

Due in part to the cyclical nature of the demands for bank credit and in part to the usual counter-cyclical fashion of monetary policy, the availability of bank credit tends to increase during recessions and decline during recovery periods. In the current recovery, due in large part to the continuation of monetary ease, the rise in the loan-deposit

ratio has not been as wide as in previous expansion periods. For example, in the initial 24 months of the 1958-60 recovery period the loan-to-deposit ratio rose from 48.5 percent to 56.8 percent, as compared with an increase from 55.5 percent to 56.9 percent during the initial two years of the current expansion phase.

It is noteworthy, however, that the level of the ratio at the beginning of the current recovery was much higher than in the initial stages of the 1958-60 recovery period. In evaluating the liquidity of commercial banks, it should be borne in mind that the loan-todeposit ratio fails to reveal (1) the composition of deposit liabilities, (2) the characteristics of earning assets or (3) the interrelationships between these two variables. In this connection, the recent shift from demand deposits to time deposits has permitted larger proportions of total deposits to be used to satisfy credit demands, due to lower primary and secondary reserve requirements associated with time deposits. As a result, the familiar guidelines concerning the availability of credit associated with given levels of the loan-to-deposit ratio may no longer be useful as a means of evaluating bank liquidity. For example, bankers have demonstrated increased willingness to accept higher loan-todeposit ratios and to extend additional credit so long as they believe that time deposits will remain stable and the public will not treat time deposits merely as interest-bearing demand deposits.

Some Concluding Comments

The foregoing analysis provides support for the argument that there is sufficient liquidity in the economy to support a continuation of business expansion, and that monetary policy has contributed significantly to the maintenance of this liquidity. The amount of liquid assets and the availability of credit appear to be adequate to meet the public's demand for funds.

It is widely recognized that public policies should be designed to encourage a fuller utilization of capacity in this economy. It should also be recognized, however, that monetary policy must avoid excesses of liquidity that would result in further untoward pressures on the U. S. balance of payments position and the monetary gold stock. Moreover, a course of action which resulted in excesses of liquidity might seriously blunt the effectiveness of future monetary policy.

Around the Fourth District-

Kentucky was the only state in the Fourth District which recorded a gain in total net income per farm in 1962. The gain apparently was registered in the form of additions to inventory since cash receipts in the state declined.

* * *

In February, the volume of bank debits at 35 Fourth District centers advanced moderately. The month-to-month increase measured 1.5 percent, seasonally adjusted.

* * *

Cumulative sales at Fourth District department stores for the period from January 1 to March 23 trailed year-ago volume by 1 percent. In contrast, total department store sales in the nation showed a 4 percent year-to-year increase for the same period.

* * *

Liquidity in The Agricultural Sector

Since World War II, the amount of debt owed by farmers in the U. S. has increased steadily. By the end of 1962, total farm debt amounted to \$29.3 billion, which compared with a figure of \$8.0 billion at year-end 1945. (1) In comparison with trends in other private sectors of the economy, farm debt has increased at about the same rate as that of corporate debt, but at a slower pace than that of both consumer credit and nonfarm mortgage debt.

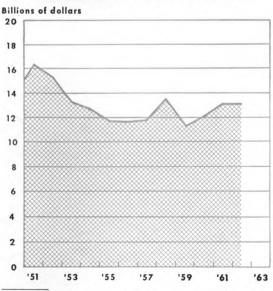
Beyond this point, however, the comparison is not quite so favorable. While the ability of these other sectors to service and repay debts has also grown substantially in the postwar period, gross farm income has advanced only at a modest pace. Moreover, net farm income, which is perhaps a better measure of ability to repay debt, trended downward throughout the 1950's. (See Chart 1.) Thus, we find that a sharp rise in farm debt along with a downtrend in net farm income raises some questions concerning the degree of liquidity in the agricultural sector of the economy.

As suggested in the first article in this review, it is difficult to arrive at agreement concerning a working definition of liquidity. Insofar as we are concerned here, liquidity in the agricultural sector is measured by the ratio of farmer holdings of liquid assets, which includes demand deposits, time deposits, currency, and U. S. savings bonds, to the amount of non-real-estate debt owed by farmers. (2) Some of the problems involved in

 All data used herein, unless otherwise specified, are from publications of the U.S. Department of Agriculture.
 The non-real-estate debt total used excludes obligations to the Commodity Credit Corporation. measuring liquidity in this way are discussed later in the article.

As can be noted in Chart 2 on page 10, liquidity in agriculture has declined substantially from the high level that prevailed at the end of World War II. This decline has resulted from the consistent increase in non-real-estate liabilities. In contrast, the amount of liquid assets held by farmers remained fairly stable from 1947 through 1959, and then declined somewhat. Nevertheless, the liquid assets held by U. S. farmers still exceed the non-real-estate liabilities, with the liquidity ratio amounting to 1.08 on January 1, 1963. (3) Although this figure may seem high in comparison with, say, the corporate liquid-

Chart 1. TOTAL NET FARM INCOME



(3) This ratio would be expected to vary during the year.

ity ratio, it is necessary to keep in mind that hazards of the weather and the wider fluctuations in agricultural prices, along with the high proportion of fixed costs in farming, demand relatively more liquidity in the agricultural sector.

Higher Production Expenses

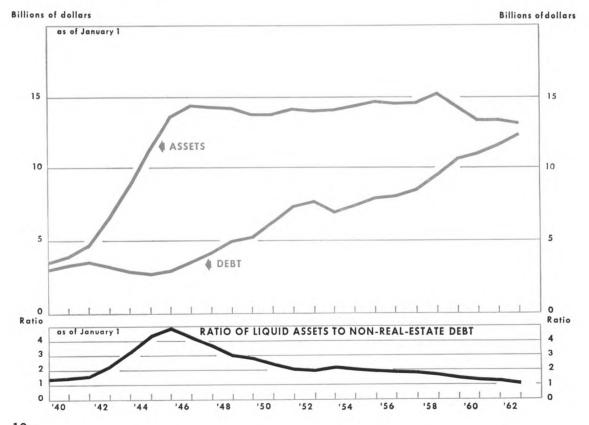
A number of factors are responsible for the growth in non-real-estate liabilities of farmers. These include mainly increases in farm working capital needs, as well as a considerable expansion in investment by farmers in equipment, livestock, and crops.

Farm working capital needs have increased along with the rise in farm production ex-

penses, as shown in Chart 3 on page 11. Higher farm costs, in turn, reflect the general expansion in farm production. We can thus attribute some of the increased costs to increased output, i.e., farmers are experiencing larger expenses now relative to earlier years because they are buying more feed, more livestock, more fertilizer, and other items necessary to expand production. As is shown in Chart 3, since 1951 advances in farm output have in general out-distanced the rise in farm expenses, with the exception of the past two years. In 1961 and 1962, farm programs were successful in curtailing grain production, and this was a significant factor in reducing the rate of advance in total farm output. At the

Chart 2.

Non-real-estate debt of farmers has grown steadily since World War II. In contrast, liquid assets remained stable until 1959, but have since declined. Liquidity in the agricultural sector is now slightly less than in 1940.



same time, however, farm costs of such producers did not turn down correspondingly, in part due to the large amounts of fixed costs involved as well as to the tendency to apply more fertilizer per acre on a smaller planted

In addition to increased outlays associated with larger farm output, other trends in agriculture also play an important role in increased costs. Farmers today are buying a great deal more of inputs than they did in earlier years. This is true in the case of both farm-produced inputs as well as nonfarm inputs. The trend toward specialization in farming is one cause of these higher outlays. Looking first at farm-produced inputs, purchases of feed have moved up more than any other farm expense in recent years. (4) Larger feed costs stem in part from an expanded volume of livestock production by U. S. farmers. At the same time, specialized livestock operations often result in larger feed purchases than those experienced with a "general farm operation," which was more characteristic of farming in earlier years. Likewise, specialization is also a factor in the larger livestock outlays. For example, it is common practice for dairymen to purchase, rather than to raise, their herd replacements.

Farm mechanization has played a very fundamental role in increased farm production costs. The replacement of animal power with "tractor power," and subsequent further increases in mechanization, have brought about a steady rise in depreciation charges, fuel and other power expenses, and repair costs. In addition, adoption of new technology has resulted in farmers purchasing many items which were not on the market several years ago, e.g., new pesticides and feed additives. Outlays for hired labor, another important nonfarm purchased input, have also moved up moderately; this rise is due to higher farm wage rates as farmers are employing less hired labor. Taxes on farm property are another farm expense which has moved up substantially. In addition, the

Chart 3. TOTAL FARM OUTPUT AND FARM PRODUCTION EXPENSES



sharp increase in farm debt referred to earlier has meant a corresponding increase in interest charges paid by farmers.

Higher prices paid for production items have also played a part in the increase in farm costs. Prices of motor supplies, motor vehicles, farm machinery, building and fencing materials, and other farm supplies have moved up in nearly every year since 1940.

Larger Investment

Along with the need for additional working capital, a steady rise in farm investment has also played a primary role in the enlarged demand for non-real-estate credit by farmers. Mechanization, once again, has been an important factor here as the tremendous growth throughout the postwar period in the number of tractors and field machines on farms, along with substantial increases in investment in "barn" equipment in recent years, have brought a considerable expansion in investment in machinery and equipment. Larger investment also reflects the impact of

⁽⁴⁾ See "1962: A Year of Stability in Agriculture," Monthly Business Review, Federal Reserve Bank of Cleveland, De-cember 1962.

increased production, i.e., the "inventory" of crops and livestock on farms tends to increase as output increases.

In addition to the increase in total capital needs, the reduction in the number of farms has also had a notable impact on farm credit demand. In 1962, the number of farms in the U. S. was estimated at 3.7 million, or 29 percent less than in 1952 and 38 percent less than in 1946. This downtrend in farm numbers coupled with the increase in total farm investment, as previously discussed, has brought about a sharp rise in investment per farm. On January 1 of this year, investment in livestock per farm totaled \$4,426, approximately twice that of the \$2,283 total in 1950. Over the same period, the amount of investment per farm in machinery and motor vehicles more than doubled, rising from \$1,756 to \$4,310. This concentration of investment in fewer farms has no doubt been an important factor in the enlarged use of credit, since many of the operators leaving farming would tend to take equity funds out of agriculture. Thus, the farmer who acquires the livestock. machinery, or other assets of the seller would need to use additional credit in enlarging his farm operation. (5)

Problems in Measurement

Several considerations are significant in measuring liquidity in agriculture. First, all non-real-estate liabilities are not short-term liabilities that should be compared with liquid assets. For example, farmer borrowings for the purchase of new machinery or other assets that are financed on an intermediate-term basis without farm mortgage security are included in non-real-estate liabilities. (Some lenders do finance these types of purchases on a short-term basis.) Thus, while it would be

desirable to exclude intermediate-term credit outstanding in measuring liquidity in agriculture, such data are not available.

It is quite clear that farmers hold liquid assets in addition to those identified earlier in this article. For example, a portion of farm crop and livestock assets could be converted into cash at a reasonable price. It is impossible, however, to determine just how much. Another farm asset which no doubt provides some additional liquidity are the investments by farmers in cooperatives. Such investments were estimated to have totaled \$4.7 billion on January 1, 1963, or approximately the same in amount as holdings of U. S. savings bonds by farmers. Farmer investments in various marketing, purchasing, electric, credit, and other cooperatives have risen steadily since 1940. Inclusion (or exclusion) of the items mentioned here, i.e., farm crop and livestock assets, investments in cooperatives, intermediate-term credit, would tend to raise the liquidity ratio of the agricultural sector, if accurate measures of total farm liquid assets and short-term debt were available.

Another aspect of liquidity in agriculture that is significant, but is difficult to measure, concerns the concentration of farm debt relative to holdings of liquid assets. A recent study by the Bureau of the Census showed that farm operator debt in this country is concentrated in the hands of relatively few farmers. The study indicated that, in 1960, 25 percent of the nation's farm operators had 69 percent of the non-real-estate and related debt outstanding. (6) Whether these same operators hold a corresponding proportion of total liquid assets would seem to have serious implications for the liquidity position of the agricultural sector of the economy.

⁽⁵⁾ The concentration of farmland among fewer farmers would have a similar impact on farm real estate debt.

⁽⁶⁾ See "A New Look at the Farm Debt Picture," Federal Reserve Bulletin, December 1962.