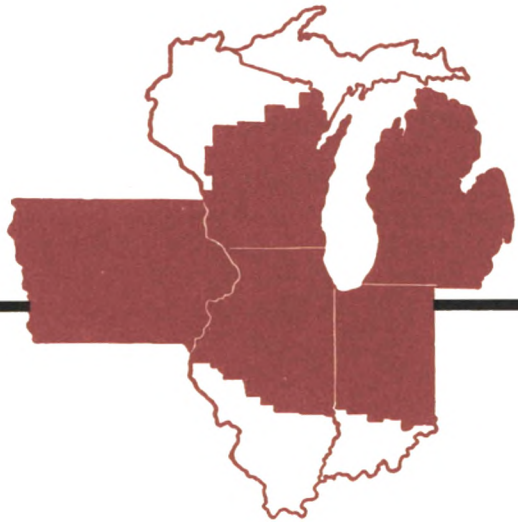
A review by the **Federal Reserve Bank of Chicago**

Business Conditions



September 1969

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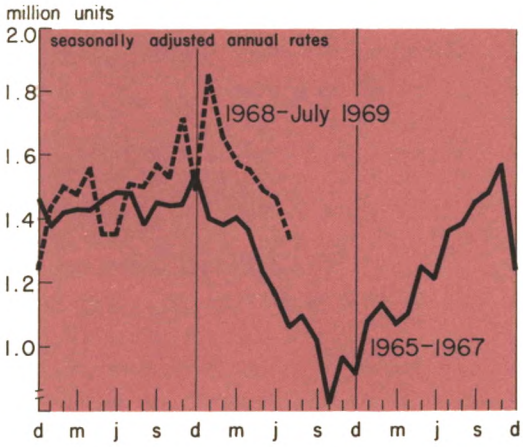
THE Trend OF BUSINESS

Scattered evidence suggests that reduced credit availability and the achievement of a substantial federal budget surplus are moderating the growth in economic activity. Retail sales apparently have been on a plateau since April despite further substantial increases in spendable income. Starts on residential structures have fallen sharply and some other private and public construction projects have been postponed. The long continued rise in defense spending has come to an end, with some decline in future spending a possibility.

But, clear evidence that inflationary pressures have passed their peaks is still lacking. Substantial price increases, especially for metals and metal products, have been widespread in recent months. New labor contracts have provided larger increases in hourly wage rates and fringe benefits. Industrial production and employment continued to rise vigorously through July, and unemployment remained below last year's low level. Except for centers specializing in output of autos and farm machinery, unemployment in most areas of the Midwest continued to be even lower than in the nation generally.

Housing starts have dropped sharply this year



Further income rise

Personal income increased steadily in the first seven months of 1969, more than 8 percent on an annual rate basis. An especially sharp rise in wages and salaries in July resulted from the increase in pay of federal employees.

Increases of wages and other benefits averaged 7.1 percent (commonly for three consecutive years) in major labor-management settlements negotiated in the first half, compared to 6 percent in all of last year and 5 percent in 1967. For construction workers, increases averaged 10 percent.

Employment continued to climb in the early summer. In July, nonfarm wage and salary employment reached a new high of 70.5 million, up 2.5 million from a year earlier—one of the largest increases on record. Employment gains in June and July about matched the 12-month pace after allowance for seasonal factors. Manufacturing employment, which often peaks out earlier than the total, also rose in June and July partly because strikers returned to their jobs.

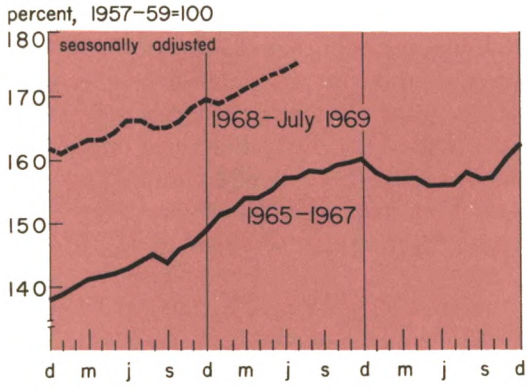
The growth of employment and the rise in worker compensation in the second quarter were associated with a decline in output per manhour for the private economy. The resulting rise in labor costs per unit of output is contributing to a squeeze on corporate profit margins. In contrast to the trend for the entire economy, output per manhour in manufacturing appears to have increased this year.

The continuing shortage of workers is highlighted by trends in turnover in manufacturing employment. In June, the hiring rate was substantially above last year, and the layoff rate was lower. Quit rates were the highest since the Korean War. Clearly, employers are reluctant to release workers, even temporarily, and employees are able to find alternative jobs readily. Rapid turnover of labor, coupled with frequent absenteeism, hampers productive efficiency.

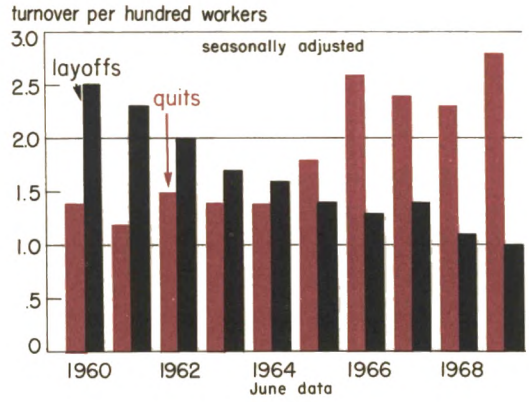
Credit and construction

In each period of credit stringency since World War II, construction activity, and particularly homebuilding, has been curtailed more than other major types of spending.

Industrial production shows strong, steady rise



Factory quits at new high, layoffs at new low



Rigidities, particularly in home mortgage interest rates, sluggish growth in savings available for mortgage investments, relatively heavy use of borrowed funds in residential building and used home sales, and the importance of interest in the total cost of both homes and apartments, along with strong increases in prices of construction labor and materials, have combined to reduce housing starts. This pattern, clearly evident in 1966, is now emerging in 1969.

The current dollar value of total construction changed only slightly in the first six months of 1969, although construction costs continued to increase—i.e., the physical volume has declined. New private housing starts dropped from an annual rate of 1.7 million units in the first quarter to 1.3 million in July. The cut in single family home starts has accounted for about two-thirds of the decline in total starts. Housing starts continued to exceed last year through June, but a sharp decline from last year's level is indicated for July and subsequent months.

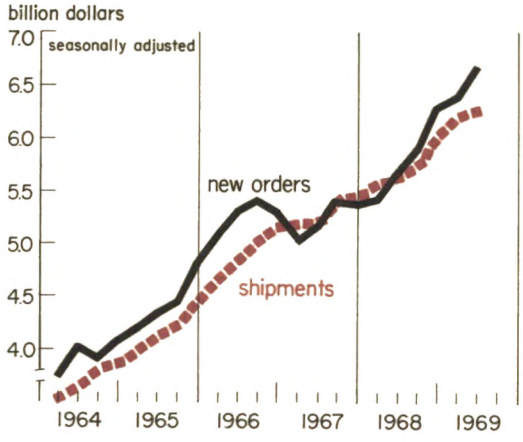
Construction contracts reported by F. W.

Dodge were 10 percent above last year's high level in the January-June period in the Midwest, and up 12 percent for the nation. The margin over last year has tended to narrow, however, especially for housing and public projects. In the commercial sector, new contracts have remained strong, especially for office buildings and stores.

Shortages of construction labor and slow deliveries of some supplies and components have delayed many construction projects. Under these circumstances, additional credit for construction might have served mainly to boost costs even more rapidly.

The decline in housing starts in the face of a rise in family formation and low vacancy rates has been accompanied by vigorous demand for mobile homes. Sales of mobile homes, many of them manufactured in Indiana and Michigan, have exceeded last year's record total by about one-third and dealers' inventories are low. Mobile home sales may reach 400,000 this year, compared with 320,000 in 1968, and less than 200,000 as recently as 1964.

Orders for machinery and equipment rise further but shipments level off



Equipment leads output rise

The boom in capital equipment continues, with the exception of farm machinery. Expenditures on nonfarm business equipment rose at an annual rate of about 15 percent from the fourth quarter of 1968 to the second quarter of 1969. Part of this rise reflected higher prices, but physical output of business equipment rose at an annual rate of more than 7 percent in the same period.

New orders for machinery and equipment were lower in May and June than in April when orders spurted in expectation of the Administration's request for repeal of the 7-percent investment tax credit. But orders continued to exceed shipments in these months. Order backlogs for machinery and equipment have risen each month this year and, at the end of June, were 15 percent above a year earlier.

Orders for machine tools, electrical and non-electrical components, air conditioning equipment, trucks, trailers, and freight cars have been especially strong in recent months. Strength in capital goods accounts for the relatively greater pressure on labor resources in the Midwest. Spending for some types of equipment would have been even greater but for delayed deliveries.

As in the case of employment, continued strength in business equipment is not necessarily inconsistent with moderate slowing in growth in total activity. However, any significant slowing in the economy almost certainly would be accompanied or followed by a decline in spending for equipment.

Steel production rising

Production of steel totaled 71 million tons in the first half of 1969, less than in the first

half of 1968 when strike-hedge inventories were being acquired, but more than in any earlier six months period. Output was reduced in July and August, partly because of labor shortages. The flow of orders suggests a rise in steel output in September.

Strong demand for steel has enabled producers to raise prices—about 5 percent for most products. Not all of the announced increases have "stuck," but the recent firmness of prices stands in marked contrast to the situation last fall following the strike-hedge inventory buildup when substantial price reductions were posted temporarily.

Steel inventories in the hands of users in June were the smallest since January 1968. Moderate inventories and the recent high rate of "cleanup," helps explain the recent rise of steel prices.

Strong demand for domestically produced steel partly reflects conditions abroad. Imports are unlikely to reach the 14 million ton level envisaged in voluntary quotas agreed to by foreign producers (down from 18 million tons in 1968), mainly because of increased steel needs in foreign markets. Exports of steel from the United States, although far below imports, continue to exceed expectations.

Caution on commitments

Despite the continued rise in spending, output, employment, and prices, most projections of business activity suggest a marked slowing in the rate of economic growth, perhaps even a decline in real activity, in the first half of 1970. Decisions based on these projections may help to validate them.

The determination of the fiscal and monetary authorities to restrain the rapid price inflation is increasingly understood. Such policies have been effective in the past and should prove effective again even though inflationary forces have been permitted to gain great momentum.

Rise in farmland values slows in Midwest

Recent evidence points to softness in land values in some areas of the Midwest. Information from the Federal Reserve Bank of Chicago quarterly survey of country bankers indicates the strong upward surge in land values has been slowing down since early 1967 and that values have declined recently in some areas. The annual increase reported by Seventh District bankers was 8 percent in 1966, 6 percent in 1967, and 5 percent in 1968. A July 1 survey this year indicated values in the district averaged 4 percent above a year ago, but had declined in some areas.

Differences in the district

In general, areas in Illinois, Iowa, and Indiana account for the slower rise of land values. In west-central Illinois values were reported to average 3 percent below a year ago; in east-central Illinois, which contains some of the highest priced farmland in the nation, agricultural land values averaged the

same as the year earlier levels.

In Michigan and Wisconsin, on the other hand, land values have continued to rise briskly. Values in Michigan were reported to be 9 percent above a year ago and values in Wisconsin were up 6 percent.

Generally, farmland values in Michigan and Wisconsin are considerably lower than in most areas of the Corn Belt. Therefore, a given dollar change in acre values in these states provides a much larger percentage change than in the Corn Belt states. But more important are the differences in types of farming in the two regions. Because of the greater importance of livestock and fruit and vegetable crops in the Lake states, farmers in these areas—unlike farmers in Illinois, Iowa, and Indiana, where cash grain farming is important—have experienced rising net incomes in the past two years.

Furthermore, the recent tight credit conditions probably have less effect on the demand for land in the Lake states than in the Corn Belt. In the Lake states it is more common for the sellers of farmland to extend credit to purchasers. In 1968, sellers in these states extended credit to 62 percent of the purchasers. This compares with 49 percent in the Corn Belt. In addition, farms are smaller in the dairy regions of Wisconsin and Michigan and require less money to purchase. In 1968 the average farm real estate loan in the Lake states was only about two-thirds as large as the average loan in the Corn Belt.

Finally, bankers in the Lake states report a strong demand for land for recreational purposes and part-time farms. This undoubtedly tends to boost farmland values.

Farm income

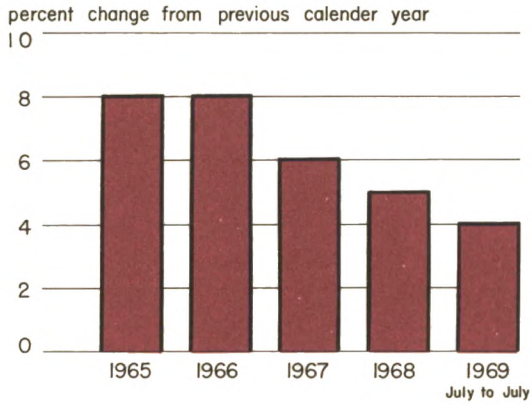
Theoretically, the value of farmland equals the sum of its expected *future* returns discounted to the present. The total expected return includes capital gains resulting from rising prices as well as current income.

Until recently, farmers and investors were apparently very optimistic about future returns from farmland, especially capital gains. The rapid strides in farm technology and continued government programs to support farm income undoubtedly fostered this view.

In the mid-Sixties a severe drought in the Far East coincided with poor crop years in the Soviet Union. The temporary surge of demand was construed by some as heralding a permanent world food shortage and a boon to nations with exportable supplies of grain. However, with the harvest of the bumper 1967 world crop, U. S. farmers found the export market much reduced. Feed grain exports have declined steadily the past two years with the volume of shipments in 1968 about a fourth smaller than in 1966.

In addition, in the past year soybeans—the second most important cash crop in the Seventh District—have encountered a surplus of food fats and oils on the world market. In order to make U. S. soybeans more competitive in world trade, the Department of Agri-

Farm land prices show slower rise in Seventh District



culture lowered the price support from $2.50 per bushel for number 2 grade beans to $2.25 for number 1 beans. Farmers are likely to receive about $8 less per acre than last year for soybeans harvested this fall.

Finally, there appears to be increasing demand to divert government spending from farm income support programs to other sectors. In recent years direct government payments have accounted for about a fourth of net farm income. Most would agree that government support has added stability to the farm economy and stimulated farmers' investment in land, improvements and machinery. The current authorization for some important farm programs expires in 1970.

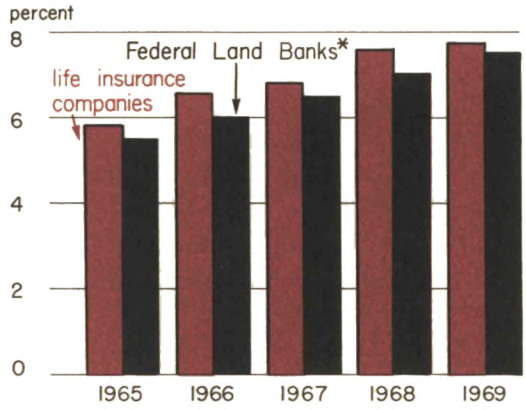
Funds disbursed under government farm programs have been closely related to amount of cropland and, therefore, have tended to raise land values. Now, there are suggestions that farm programs may be reoriented with emphasis on rural community development and assistance to the rural poor, and a gradual withdrawal from direct support of commodity prices. Although no specific programs have been proposed, these suggestions could dampen expectations concerning future farm income and land values.

Credit and land values

Outstanding debt secured by mortgages on farm real estate has more than doubled since 1960, concurrent with and perhaps giving added impetus to the sharp rise in land prices. Many farmers have borrowed substantially in order to purchase additional land. About 42 percent of land purchases in the U. S. were financed with borrowed funds in 1957-59 compared to about 80 percent in 1968. In the Seventh District farm real estate debt has increased at a similar pace.

Shifts among lenders. The rapid rise of total spending and accompanying inflation has called forth restrictive monetary and fiscal policies in the interest of reestablishing economic stability. With the burgeoning demand for credit and restraint on the growth of credit, interest rates have increased sharply.

Farm mortgage rates up sharply+



+Rates for 1969 are as of March 31; other years December 1.
*Rate charged by majority of Federal Land Banks.

This "tight money" situation has been reflected in the farm mortgage market. Life insurance companies have curtailed their farm lending as credit demands from other more profitable sources have increased. In 1968, new money loaned on farm real estate by 19 major life insurance companies declined 7 percent from 1967 and the number of new mortgages acquired declined over 17 percent. The greatest decrease occurred the last half of the year when new money loaned was over a fourth less than in the comparable period a year earlier. New money loaned at Federal Land Banks declined over 9 percent in 1968, probably reflecting primarily the effects of the higher interest rates. Most of the Federal Land Banks are now charging 7.5 percent or more on farm real estate loans, compared with 7 percent last year and 6.5 percent two

years ago. Commercial banks also appear to be less active in lending on farm real estate. In 1968, about 11 percent of all credit financed land transfers used funds provided by commercial banks, down from 20 percent the year before.

Sellers role increases. Because sellers of farms often extend credit on more favorable terms than institutional lenders, farmers have turned increasingly to these individuals for financing of real estate purchases. In 1958-59, seller-financed sales of land accounted for about 42 percent of total farm-mortgage debt outstanding; by 1968 the sellers' share had increased to 53 percent. About 80 percent of all seller-financed transactions is by land instalment contract.

Prominence of the land contract. Many buyers do not have enough equity capital to obtain a conventional mortgage and some prefer to utilize borrowed funds to the maximum. The land contract is well suited to both purposes. A farmer, by holding his equity in real estate to a minimum, often can utilize his equity capital to acquire more of the other items needed for efficient farm operation.

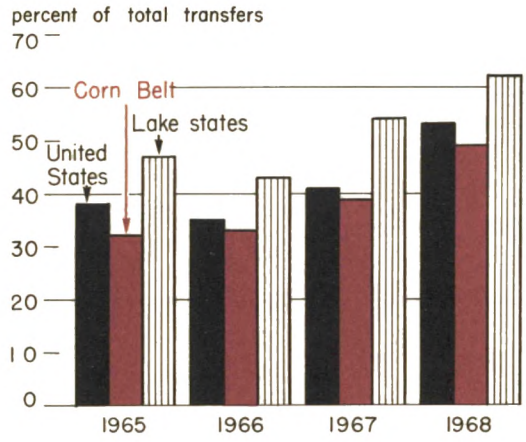
On the other side, because of the large and fairly continuous increase in land values over the past 30 years, most sellers of farm real estate are faced with a sizable tax on capital gains. If the seller receives more than 30 percent of the sale price in any one year, the entire capital gain is taxable in that year. Many sellers prefer, therefore, to receive less than 30 percent downpayment on land sales and do not want to transfer title to an owner with a small equity. In these circumstances, the land contract provides advantages.

Since the small purchaser's equity implies a greater risk of default, the interest rate might be expected to be higher on land contracts than conventional mortgages. In some instances this is observed, but the available information indicates that, in general, there is little difference in rates. With a land contract the seller retains title to the property and may obtain quick possession at minimum expense in case of default. Furthermore, land sold on contract averages higher in price than that financed by conventional mortgage. The sale price may contain some element of financing charges.

The growth of contract financing serves to increase the demand for land by lowering the equity required and adjusting other terms to the needs of individual buyers, thereby enabling more persons to participate in the market. However, the effects on land values during the last year and a half probably have been more than offset by the difficulty in obtaining conventional financing and the associated higher interest rates.

High interest rates restrain price rise. The sharp increase in interest rates reduces the amount of credit a farmer can service from a given income and, therefore, the

Sellers finance large proportion of land transfers



amount of land he can purchase on credit. When higher interest expense is accompanied by lower farm income, as has been the case for the past two years in the cash-grain areas of the Seventh District, the combined impact on the current debt-carrying capacity of land, and, consequently, on the trend of land values is even greater.

Furthermore, the higher interest rates discourage many farmers from refinancing mortgages obtained at lower rates in earlier years. In the Seventh District, as well as the nation, over half the land purchases are to enlarge the acreage of another farm. By using their equity in farm land they already own as a basis for credit to buy additional land, farmers can bid aggressively for parcels that come on the market. But with interest rates well above earlier levels, the probable gains to be derived from refinancing existing mortgages to obtain funds for new purchases are reduced and this too may have caused some farmers to defer purchases of additional land. Finally, the current level of interest rates is considerably higher than has been experienced previously by some potential buyers and may cause them to take a "wait and see" posture, expecting lower rates soon.

The trend of farm land values is influenced by many factors and these shift in relative importance with changes in the economic environment. The cost and availability of credit, always an important factor, has assumed an even greater role in recent years under conditions of strong inflationary pressures and the attendant monetary restraint.

Consumer instalment loans: a profile from Detroit

A pilot study of consumer instalment loans made by commercial banks in the Detroit area has been underway since April 1968. Cooperating with the Federal Reserve in this undertaking have been 9 Detroit and suburban banks with deposits of roughly $10 billion, or all but a small portion of total bank deposits in the area.

The banks have supplied information on the major characteristics of each of a monthly sample of new loans and loans paid off or charged off. From this information it is possible to draw a profile—although a somewhat sketchy one—of both the loans and the persons obtaining them. For this purpose, information on loans made in the third and fourth quarters of 1968 has been used.

Altogether, more than 6,700 loans were included in the sample for this study. Of these, roughly two-thirds were auto loans, with the remainder made up of loans for a variety of purposes including medical, dental and funeral expenses, vacations, tax payment, loan consolidation, education, furniture, appliances, and home improvement.

Nearly two-thirds of the auto loans reported were for new car purchases. In both the new and used car categories, the great bulk of the loans were originated by dealers and sold to the banks—close to 90 percent of the new car loans, 80 percent of the used-car loans. The remainder represented "walk-

in" loans—credits extended by banks.

Characteristics of the loans

Borrowings for the purchase of new cars averaged considerably larger than those in any of the other loan categories. Also, the monthly payments were larger for these loans, notwithstanding that the average maturity was much longer.

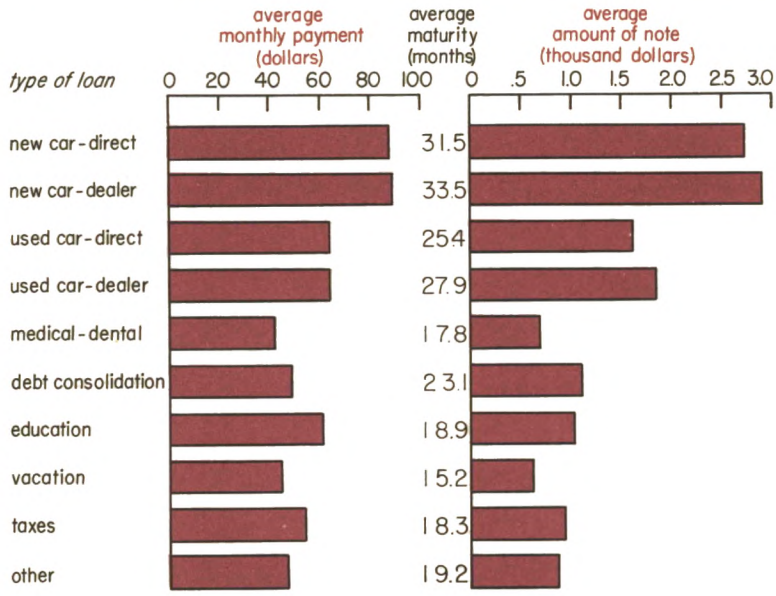
New car loans originated by dealers averaged somewhat larger than those extended directly by the banks, with 44 percent of the dealer originated loans exceeding $3,000, while only one-third of the direct loans were of this size. The dealer loans were more commonly written for 36-month terms than those made directly by the banks. Loans in this maturity category accounted for 79 percent of all dealer loans and 64 percent of all direct loans for the purchase of new cars.

While the loans made to finance purchases of used cars were generally much smaller than those granted to buyers of new cars, there still were significant proportions of relatively large used-car loans. For the dealer loans, 13 percent exceeded $3,000, in the case of direct loans, 8 percent. In addition, a sizable proportion of the used car loans carried maturities of 3 years. The most common maturity in new car financing, on both dealer and direct loans, was 36 months. For used-car loans originated by dealers the most common maturity was also 36 months, while it was 24 months for direct loans.

Loans for purposes other than purchase of automobiles were considerably smaller on average than the auto loans but varied greatly, running from $629 for vacation loans to $1,112 for debt consolidation loans. Loan terms for these nonauto loans also varied greatly with the average maturity ranging between 15 months and 2 years. The comparatively small vacation loans carried the shorter average maturities and the large debt consolidation loans the longer maturities. Loans for educational purposes ranked second highest in average amount, but were written for comparatively short terms, with the result that average monthly payments were the highest for the categories reported and were nearly as large as the average monthly payment on loans to used car buyers.

Prepayment and refinancing make the ef-

Loan characteristics—averages for all reported loans



fective maturities of some instalment loans shorter than the periods specified in the contracts. Of persons obtaining auto loans, between 11 and 19 percent—depending on the source of the loan and whether for a new or used car—had in excess of 12 monthly instalment payments to make on outstanding auto loans at the time they applied for and received new loans. These obligations presumably were "paid off" (refinanced) with the proceeds of the new loans they were granted. Upwards of one-fourth of those obtaining non-automobile loans had more than a year's payments to make on previous auto debt.

The borrowers

The persons obtaining instalment loans in the Detroit area during the second half of 1968 were only slightly younger on average than the area's total population aged 21 and over. The average ages of borrowers ranged between 37 and 40 years. The median age of all Detroit-area residents 21 and older was about 41 years in 1960 and it was probably somewhat lower in 1968.

Of the new car loans extended directly by banks, 50 percent went to persons over 40. This age group also accounted for 40 percent, or slightly more of each of the other major types of loans. Within the over-40 age group, persons 61 and older accounted for less than 5 percent of the instalment loans, although they made up about 17 percent of the area's (1960) adult population.

Depending on the type of credit, 35 to 45 percent of the borrowers had held their "present" jobs for 3 years or less. At the other extreme between 27 and 34 percent had been on their present jobs for at least 10 years. A big majority of borrowers were employed wage or salary workers, with a small proportion—from 5 percent to 11 percent—self-employed, and a negligible proportion either unemployed or retired.

Family incomes reported for those obtaining new car loans directly from the banks were the highest for any of the principal loan categories and averaged close to $1,000 monthly; about one-eighth had family income in excess of $1,500 monthly. Used-car loans generated by car dealers went to persons reporting on average monthly incomes of $771; only 2½ percent reported monthly incomes in excess of $1,500.

One-fifth to one-fourth of the Detroit borrowers had repayment obligations that exceeded 20 percent of their incomes. At the other extreme, instalment payments took 10 percent or less of income for one-third to two-fifths of the borrowers.

The Detroit Area Survey

Information on the "qualitative" characteristics of consumer credit is intended to provide a factual basis for further study of the role of consumer credit in the economy. The interaction of consumer credit terms and lending standards with fluctuations in economic activity and the response of consumer credit availability to changes in monetary policy will be analyzed. As a by-product, the studies will permit analysis of the relationships of loan terms and borrower characteristics to repayment experience, which may be of assistance in evaluating bank instalment loan policy.

Loans repaid in accordance with the contract terms are being compared statistically with defaulted loans for indications on how certain characteristics are related to repay-

ment experience. Comparison of characteristics of new loans and matured loans (that is, either paid off or charged off) should identify changes not only in lending policy and credit conditions but also in some relevant characteristics of borrowers, e.g., income, that take place with the passage of time.

The present article focuses solely on loans newly granted during the period covered. For all practical purposes, these loans may be taken to have been made within a single set of credit market conditions. Loans paid off or charged off during this period typically were made in earlier periods.

Consumer credit outstanding climbed from $5.7 billion at the end of 1945 to $113 billion at the end of 1968. Of the 1968 total, $90 billion was in the form of instalment loans; the remainder in single-payment loans. More than one-third of the instalment loans, or $37 billion, were oustanding at commercial banks, where they amounted to roughly 10 percent of total earning assets. The banks, as well as the other sources of consumer credit, have an obvious interest in the soundness of the loans they grant. Furthermore, to the extent that the soundness of financial institutions and the stability and growth of the economy are of general concern, interest in the nature and the conduct of consumer lending spreads beyond the financial sector and into the community at large.

Bank float: by-product of collecting checks

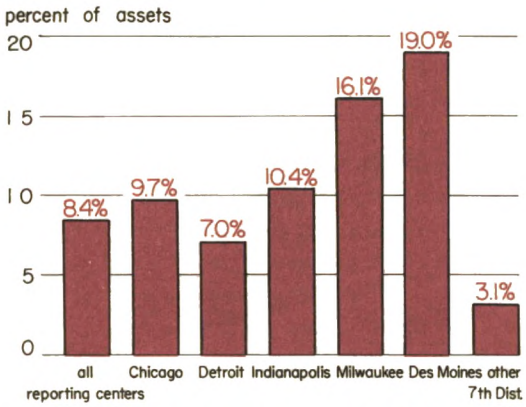
"Cash items in process of collection" appears on the balance sheet of every commercial bank. Commonly called bank float, this asset item is a by-product of commercial bank accounting and collection practices. Banks customarily credit depositors' accounts at the time deposits are made. But a number of days may pass before a bank receives the funds represented by checks (or other cash items such as drafts, or matured bond coupons) received as deposits. Commercial bank float at any given time is the dollar volume of items credited to customer accounts but not yet collected from the banks on which they are drawn. This delay between deposit and collection is significant to collecting banks since they can invest new deposits in earning assets—loans and securities—only after the funds are received.

Similarly, float originates at Federal Reserve Banks as they process checks delivered to them by member banks for collection. But unlike most commercial banks, the Reserve Banks do not give immediate credit for all checks. Accounts are credited according to a time schedule based largely upon transportation between the bank on which the check is drawn and the Reserve Bank initiating its collection. After the scheduled number of days for collection, the reserve account of the bank that deposited the item is credited whether or not the Reserve Bank has re-

ceived the funds from the payer bank. Whenever a check is not collected within the scheduled period, Federal Reserve Bank float is incurred; that is, a member bank's reserve account is credited with funds not yet received from another bank. This procedure means that until the check can be collected from the payer bank, the "same funds" appear in the accounts of both the payee and payer banks. While commercial bank float reflects the delays in redistribution of existing funds among banks, Reserve Bank float produces an increase in the total reserves of the banking system unless offset by Federal Reserve open-market sales of securities. Depending upon current objectives of monetary policy, changes in Federal Reserve float may or may not be offset.

A customer of a commercial bank also experiences float in the sense that his checkbook may show a different balance than is shown on the bank's books. This, too, results from the time required for checks to be collected. While customers usually reduce the balance shown in their checkbook when they write a check, the balance on the bank's books is reduced only when the check is presented for payment, in most instances several days later. This article, however, is concerned only with commercial bank float.

Float is greatest in large cities



Annual averages of weekly figures, July 1967-June 1968.

The growth of bank float

Check collection has improved greatly in the Twentieth century. Improvements in transportation, communications, and banking operations have reduced the time required to collect checks. In the early part of this century, local clearing houses served most major communities. By providing the facilities for the transfer of checks among a number of banks in an area, clearing houses helped to expedite the collection of checks drawn on the participating banks. The introduction of the Federal Reserve check-clearing facilities in 1914 facilitated the collection of out-of-town checks. In recent years, the increasing use of high-speed check processing equipment and checks printed with "magnetic ink" have further expedited the collection of checks.

Despite these developments, bank float has continued to increase rapidly. In the post World War II period, float has increased faster than total bank assets. In 1968, "cash items in process of collection" at all commercial banks totaled $33.6 billion, or more than 7 percent of total bank assets, up from $5.3 billion, or less than 3.5 percent in 1946.

The faster rise in float can be explained by the tremendous increase in the volume of checks requiring processing. Bank debits to demand deposits—a measure of the dollar volume of checks written—grew sevenfold between 1946 and 1968, more than twice as rapidly as total bank assets. But as a result of gains in check collection efficiency, float has increased less rapidly than debits.

Float at individual banks

Float varies greatly among individual com-

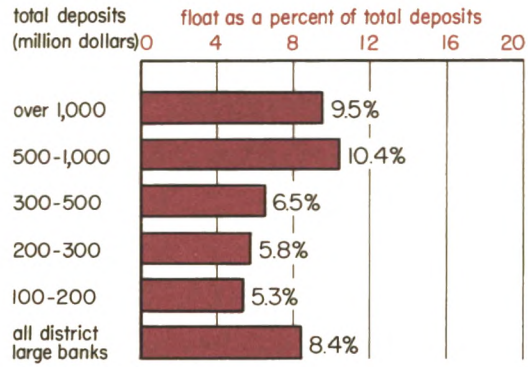
mercial banks. In 1968, float was equal to 8 percent of total deposits at the 55 large Seventh District banks that report weekly to the Federal Reserve Bank of Chicago. For individual banks, however, float ranged from .01 percent of deposits to 32 percent. At 8 of the banks, float represented less than 1 percent of deposits, while for 13 banks it exceeded 10 percent.

The ratio of float to total deposits appears to be strongly related to the location of the bank. Banks located in the five major centers in the district—Chicago, Des Moines, Detroit, Indianapolis, and Milwaukee—tend, on average, to have greater float relative to their deposits than reporting banks outside these cities. But float varies also among these five major cities. Float is equal to almost 20 percent of deposits at the large banks in Des Moines but only 7 percent of deposits in Detroit. Float usually relates to bank size; the larger the bank, the greater its ratio of float to total deposits. For district banks with total deposits over $500 million, float accounts for 10 percent of deposits, about twice as much as for reporting banks with deposits between $100 million and $200 million.

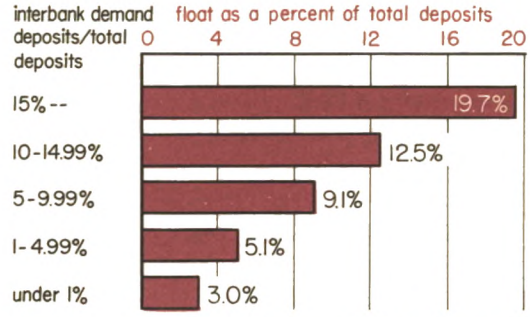
Since bank float arises from the use and collection of checks, it would appear that the size of float would be related to the types of deposit accounts and the availability of clearing facilities. Banks that tend to serve customers that deposit many items to their accounts or deposit checks drawn on out-of-town banks would be expected to have a large ratio of float to deposits. Likewise, banks that are furthest from clearing facilities are likely to have higher ratios of float to deposits.

Because float is affected by a large number of variables, many of which are interrelated, examination of these variables one at a time yields results that are both incomplete and difficult to interpret. For example, is the

Float tends to be greater at larger banks . . .



and at banks with more interbank deposits



Annual averages of weekly figures, July 1967-June 1968.

higher ratio of float to deposits in major centers attributable to the larger size of these cities or the fact that larger banks tend to be located in these cities? The impact of all variables affecting float concurrently and of each of these variables separately holding all others unchanged can be identified statistically through the use of multiple regression analysis. This technique was applied to weekly information on float and a large number of deposit and other characteristics for the 55 weekly reporting banks. These banks range in total deposit size from $100

million to about $5 billion and the results apply only to these or similar large banks. The period studied is July 1967 through June 1968. The variables included in the equation together explain statistically almost 90 percent of the interbank variation in the ratio of float to total deposits.

Interbank deposits important

The analysis indicates that the ratio of interbank demand deposits to total deposits is the most important determinant of the relative size of a bank's float. The greater the proportion of interbank to total deposits, the greater is the ratio of float to total deposits.

If two large banks are equal in size, location, and all deposit characteristics other than interbank balances, the one with the larger interbank deposits would tend to have larger float. If its interbank deposits accounted for 10 percentage points more of total deposits, its float would tend to be 5 percentage points greater than the other bank's.

The strong relationship between interbank balances and float is evident even when other factors are not held constant. Float is equal to 20 percent of the deposits at banks at which interbank deposits account for at least 15 percent of total deposits and only 3 percent at banks at which interbank balances represent less than 1 percent of total deposits.

To a considerable extent, interbank deposit liabilities are held by the larger banks and reflect their role as correspondent banks. Smaller banks often use large correspondent banks as collection agents and deposit their collection items with these banks. In effect, this transfers float from the smaller to the larger banks. Like other depositors, the smaller banks receive credit to their accounts at the correspondent bank when the items are deposited although the depositing bank is usually not permitted to draw upon uncollected funds. The volume of deposits to interbank accounts is large, with many of the items drawn on banks outside the area and, consequently, requiring considerable time for collection.

Private demand deposits are the next most important deposit category affecting float. On the average, for every 10 percentage point increase in the proportion of private demand deposits to total deposits, float as a percent of total deposits is 1 percentage point higher. Because total private demand deposits include a large number of different types of accounts, it would be desirable to separate out important component categories. Unfortunately, such data are not available on a weekly basis. However, as most loan customers also hold demand deposits, a breakdown of a bank's loan portfolio may be used to reflect its demand deposit structure. On this basis it appears that banks that do relatively more business with financial firms and individuals have relatively higher levels of float. Nonfinancial business firms appear to generate less than the average amount of float relative to their deposits.

As might be expected from their relatively low rates of turnover, savings and time deposits create little float. The higher these deposits are as a proportion of total deposits, the less is float as a percentage of total deposits. A similar relationship was found for demand deposits of governments.

The importance of float is also related to bank size, even after accounting for the composition of deposits, although the effect is small. For every additional $100 million of deposits, the ratio of float to deposits increases by one-tenth of a percent.

Location remains an important determinant of the size of bank float. Holding all other factors constant, float is larger in relation to deposits at banks in the five major

district cities than at the large banks outside these cities. Among banks in the major centers, float is relatively greatest in Des Moines, Indianapolis, and Milwaukee. Other things equal, the ratio of float to deposits at banks in these three centers is between 3 and 5 percentage points higher than at the Chicago banks. In part, this may be attributed to the availability of Federal Reserve check clearing facilities in Chicago and Detroit. Outside the major centers, float is smaller by some 2 percentage points than in Chicago.

Note: The regression formula mentioned in this article is available from the Research Department, Federal Reserve Bank of Chicago, Box 834, Chicago, Illinois 60690.

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