FEDERAL RESERVE BANK OF NEW YORK

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Contents

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The Business Situation

The pace of the economic recovery seems to have picked up a bit in recent months, but the upward thrust is still coming from only a few sectors of the economy. In August, large and broadly based gains were registered in industrial production, employment, new durables orders, and personal income. In September, moreover, there was a healthy advance in payroll employment and the overall unemployment rate inched down to 8.3 percent. On the other hand, retail sales posted an outright decline in August, while automotive sales have been sluggish since July. In any event, it appears that the stepped-up rates of production and employment in August were outgrowths primarily of reduced inventory liquidation. Elsewhere in the economy, there were some tentative signs of further strengthening. The modest recovery in residential construction is continuing, as housing starts advanced further. In addition, production of business equipment moved ahead in the month. However, capital spending levels seem likely to remain depressed until there is less idle capacity in the economy.

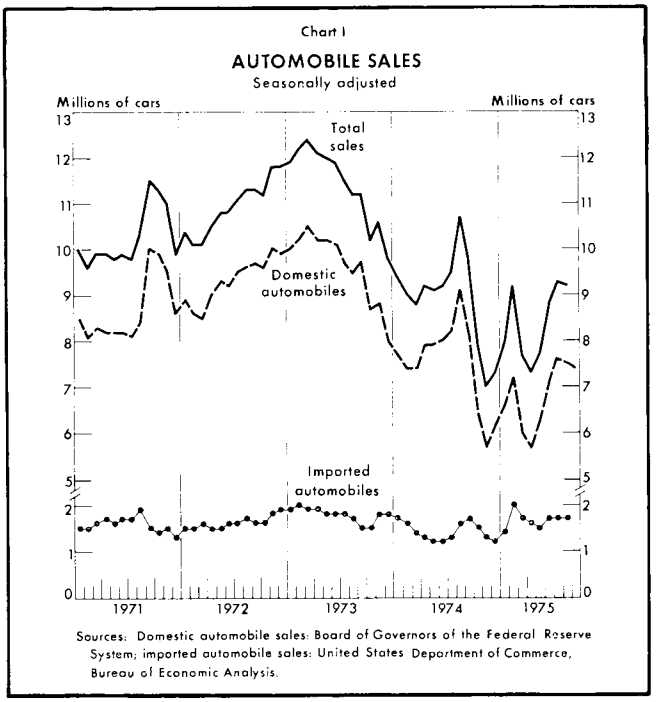
Of late, the erratic monthly movements in the price data have made it unusually difficult to analyze the underlying inflationary situation. This irregular pattern has in part reflected the abrupt spurts and halts in the prices of energy and food. However, it does appear that nonfood, nonenergy prices have been rising at a somewhat faster clip recently than they had in earlier months of the year. This suggests that, while the slowdown in inflation in the current year has been considerable, it had been overstated as some of the earlier data had been heavily but temporarily influenced by the determined efforts of businesses to eliminate their inventory overhangs.

Looking ahead, increases in food and oil prices are likely to play a major role in determining the near-term situation. Among the factors shaping the near-term outlook for food prices are the extent of world demand for United States crops, including the Soviet grain purchases, and the continued adjustments in the livestock feed sector of the agricultural economy. The $1.05 per barrel hike in the price of crude oil instituted by the Organization of Petroleum Exporting Countries (OPEC) at the beginning of October may provide a modest temporary boost in inflation. Also, while price controls on domestically produced oil have been extended through mid-November, the cost of domestic oil to oil refiners will rise further if these controls are lifted, with the timing of the impact of course depending upon whether decontrol is sudden or gradual. It should be noted, nevertheless, that the inflationary impact of these prospective increases in food and oil prices will almost surely be much smaller than those increases which occurred and contributed to the inordinately rapid inflation in 1973 and 1974.

PERSONAL INCOME, CONSUMER SPENDING, AND RESIDENTIAL CONSTRUCTION

Propelled by a record expansion of factory payrolls, personal income jumped by 1.5 percent in August. Wage and salary disbursements shot ahead at an $11.6 billion annual rate, compared with an average increase of $2.2 billion in the first seven months of 1975. Almost half of the August increase was in manufacturing payrolls, which had also shown a healthy rise in the previous month. Transfer payments rose at a $2 billion annual rate, following a large drop in July caused by the sizable one-shot June payment to Federal Government pension recipients. In the first three months of 1975, increases in transfer payments exerted an important stabilizing influence on personal income, as wage and salary disbursements remained below their December 1974 level. Since March, however, increases in wage and salary income have been the mainstay of the revival in personal income, with wage and salary disbursements increasing almost three times as much as transfer payments.

Although retail sales declined in August, they had been advancing strongly. From March to July, total sales grew at a 26.3 percent annual rate, almost quadruple the rise in consumer prices. In the four months ended in July, more than 40 percent of the increase in retail sales was attributable to a rebound in automotive sales. Since July,



however, auto sales have been essentially flat. Sales of domestic models in September were 7.4 million units at a seasonally adjusted annual rate, slightly below the levels recorded in July and August (see Chart I). It remains to be seen to what extent a prospective rebound in automobile sales will follow the typically strong pattern of past recoveries.

Housing starts edged up to 1.26 million units at an annual rate in August. However, permits slipped below the 1 million unit annual-rate mark, though they were still above the levels recorded from August 1974 through the first six months of this year. Thus far, the moderate housing recovery which began in May has been concentrated primarily in single-family units, as multifamily starts have remained at very low levels. The inventory of unsold homes in July rose to 8.8 months of sales, the highest level in four months but still below any reading in the 21-month period ended in March 1975.

To some extent, further recovery in housing may well be limited by the recent run-up in interest rates. Steep mortgage interest costs discourage potential home buyers. At the same time, savings flows to thrift institutions are restrained by higher rates on competing financial instruments. Thrift institutions are, of course, a major source of funds to the housing market, but their deposit rates are constrained by the legally set ceilings.

INDUSTRIAL PRODUCTION, INVENTORIES, AND CAPITAL SPENDING

During August, the Federal Reserve Board's index of industrial production registered a 1.3 percent increase, marking the fourth consecutive monthly increase and the largest advance since October 1972 (see Chart II). The August rise was broadly based across both industry categories and market groupings. Iron and steel production rose for the first time since January of this year. In part, the latter pickup may reflect attempts by steel mill customers to "bunch" purchases prior to the price hikes announced by steel companies for this autumn. Nondurable goods output moved ahead strongly once again, following sizable gains in the previous four months. Across market groupings, production of consumer goods in both the durables and nondurables categories continued a pattern of steady increases. Business equipment output posted a sizable advance in August, following ten months of uninterrupted declines. Production of materials advanced for the third straight month after falling without interruption since September 1974. This movement provides some support for the view that the paring of inventories which has been going on throughout the current year is moderating.

New orders for durable goods manufacturers moved ahead by $0.9 billion or 2.1 percent in August, marking the fifth consecutive monthly increase. The rise in bookings since March has exceeded production growth by a wide margin. As a result, the backlog of unfilled orders posted its second straight monthly advance.

Businesses are still trimming their inventories on balance, but the cutbacks have eased considerably in recent months. Book value inventories in the retail trade sector advanced for the second straight month in July, following declines in book value in the first five months of the year. At wholesale outlets, book value inventories registered a decline in July, after increasing in June and falling in the previous five months. The book value of manufacturing inventories fell in August, the sixth consecutive month of decline. Unlike past months, however, all of the August reduction was concentrated within the durables manufacturing sector.

In inflationary periods, book value data tend to give a distorted picture of the inflationary situation. However, the most recent monthly movements in book value inventories are consistent with the pattern of the ratios of real inventories to real sales in the first half of 1975. Real

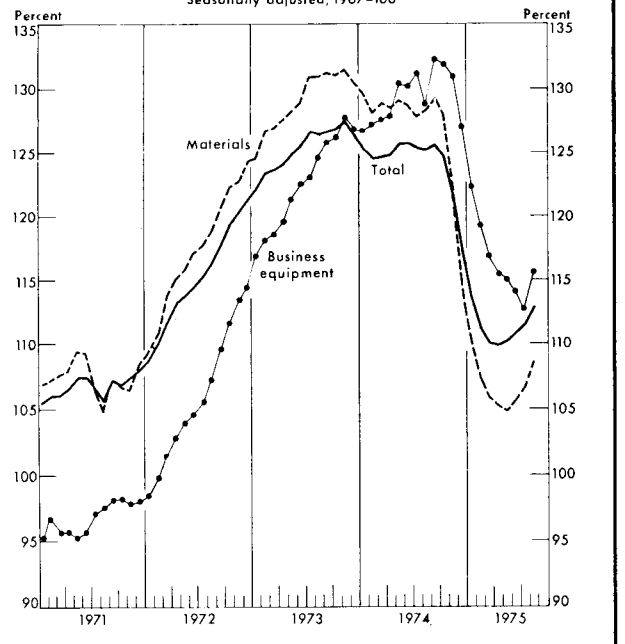
inventory figures for these sectors are available on a quarterly basis through the first half of this year. In the retail trade sector, the real inventory-sales ratio moved down considerably in the first half of the year from the peak attained in the fourth quarter of 1974. When combined with positive book value accumulation in June and July, these data suggest that inventory paring in the retail sector is over. In the wholesale trade sector, the real inventory-sales ratio hardly retreated at all during the first two quarters of this year from its late-1974 peak. Therefore, it is probable that the inventory correction in the wholesale trade sector has not yet been completed, although it has lately been proceeding at a substantially reduced rate. In the manufacturing sector, the ratio of real inventories to real sales had backed off only slightly in the second quarter from the exceedingly high first-quarter level. Thus, the latest monthly book value data suggest that the process of liquidation is continuing unabated for durables manufacturers but has diminished substantially for nondurables manufacturers.

Recent surveys point to continuing declines in the level of real capital spending. The Commerce Department survey of planned plant and equipment outlays taken in July and August showed a projected rise in nominal capital outlays over the second half of 1975 of only 1.9 percent at an annual rate. If this increase in nominal capital outlays is realized, it will mean a further drop in the level of real capital spending over the remainder of the year. In addition, a recent survey by Lionel D. Edie & Company projects an increase in nominal capital spending of only 5 percent for all of 1976. The latter survey probably implies a further reduction in the real capital spending level next year. In previous business cycles during the postwar period, troughs in real capital spending either have been coincident with troughs in industrial production or have lagged the industrial production trough by one quarter. The most recent contraction in industrial production bottomed out in April. Hence, if real capital outlays do in fact fall further in 1976, there would be a significantly more sluggish response for investment than has occurred in past business-cycle upturns. Unquestionably, the course of capital spending will depend on the overall pace of economic recovery, particularly in the crucial consumer spending sector. However, real capital spending is not likely to expand vigorously until there are less slack and idle capacity in the economy.

Chart II

INDUSTRIAL PRODUCTION

Seasonally adjusted; 1967=100



Source: Board of Governors of the Federal Reserve System.

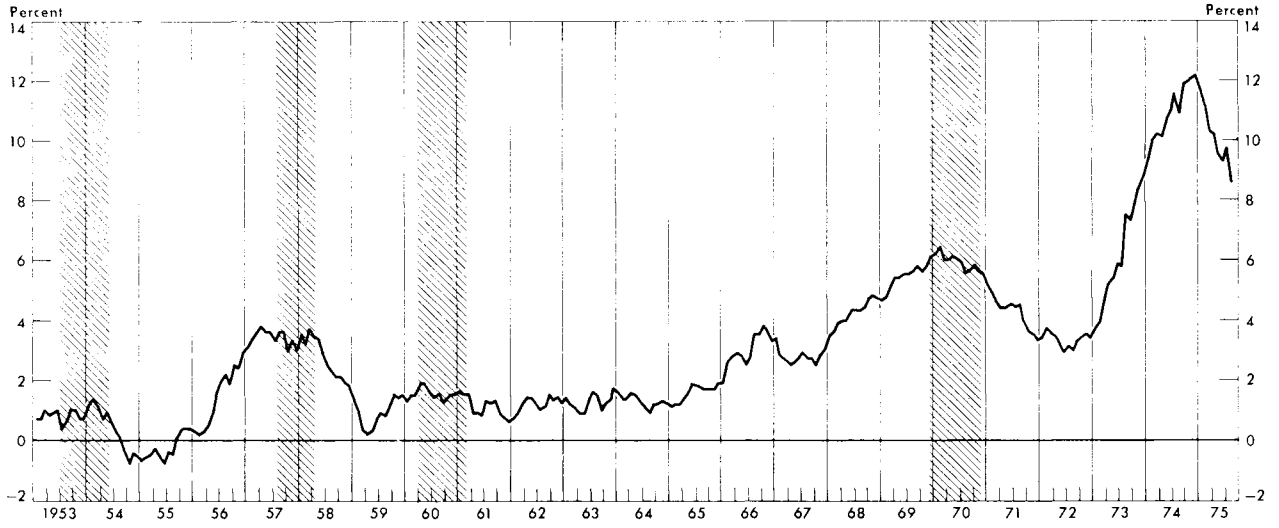
LABOR MARKET DEVELOPMENTS

Although the evidence is somewhat mixed, it appears that labor market conditions showed some further signs of strengthening in September. According to the payroll survey of establishments, seasonally adjusted payroll employment expanded by 182,000 workers in September, on the heels of the large 350,000 advance in August. The entire September increase was attributable to higher payrolls in the manufacturing sector, while other sectors were little changed on balance. Manufacturing payrolls had shown a similar gain in the previous month and have accounted for almost two thirds of the payroll gains since July. In the separate survey of households, labor market conditions were essentially unchanged as nonagricultural employment edged down slightly in the month. Nevertheless, the civilian unemployment rate fell to 8.3 percent of the labor force, down from 8.4 percent in July and August. Large gains in payroll employment in the two most recent months have helped reduce the discrepancy that had developed since March between the recorded increases in employment in the two surveys. While such divergences are not uncommon on a monthly basis, they do tend to be close to zero over longer periods. On the other hand, the increases in the unemployment rate for adult males as well as in the number of job losers were disquieting signs of

Chart III

CONSUMER PRICES

Twelve-month growth rate



Note: Shaded areas represents recession periods, indicated by the National Bureau of Economic Research (NBER) chronology. The latest recession has not yet been dated by the NBER.

Source: United States Department of Labor, Bureau of Labor Statistics.

weakness in the September household survey.

The pace of wage-rate increases in the private nonfarm economy has remained moderate in recent months. Since movements in the average hourly earnings series reflect not only wage-rate changes but also changes in manufacturing overtime and interindustry shifts in employment, a better measure of wage-rate changes is the adjusted hourly earnings index. Adjusted for changes in overtime in manufacturing and interindustry employment shifts, average hourly earnings in the private nonfarm economy advanced at a 6.0 percent annual rate between July and September. This recent rate of gain compares favorably with increases of 8.0 and 6.9 percent posted in the first and second quarters of this year, respectively.

PRICES

Lately there has been a good deal of uncertainty and uneasiness over the near-term inflationary outlook. Indeed, the sudden flare-up in the rate of inflation in the midsummer months at both the wholesale and retail levels prompted concern that a resurgence in inflation was in the offing. Moreover, the recent oil price hike by the OPEC cartel, the possibility of some form of domestic oil price decontrol before the end of the year, and the Soviet grain sales have added to the worry about the price outlook. However, several considerations suggest that a return to the inordinately high rates of inflation experienced in 1974 is not likely. On the one hand, such an eventuality at the current stage of the business cycle would be a marked departure from past experience. During the first year of recovery in the past four postwar recessions, the growth of consumer prices did not accelerate from the rates experienced during the latter part of the recessions (see Chart III). In addition, analysis of the special factors relating to food and energy suggests that any acceleration in inflation coming from these sources is likely to be much more modest than last year's experience.

Following the acceleration in consumer prices in June and July, the consumer price index inched up a mere 0.2 percent in August, the slowest rate of advance this year. Food prices were unchanged in the month, reflecting offsetting increases and decreases for various food categories. Prices of meats, poultry, and fish registered sizable increases, while prices of fruits, vegetables, cereals, and bakery products fell. Nonfood commodity prices posted a moderate rise, following a rapid increase in the previous

month which was spurred by gains in consumer energy prices. Prices of consumer services also registered a bit smaller gain.

Wholesale prices rose at a 0.6 percent seasonally adjusted rate in September. Fuel and power prices moved ahead at about a 1.6 percent rate, only slightly below the average rate of increase posted over the three previous months. Excluding the fuel and power component, industrial commodity prices rose about 0.6 percent. The latest advance for nonfuel industrial commodities was well above gains in the previous six months and marked the fifth consecutive month of accelerating price increases. In part, the relatively moderate price increases posted from March through August may have reflected the elimination by firms of a substantial inventory overhang. Prices of farm products and processed foods and feeds jumped 2.3 percent after having fallen nearly 1 percent in the previous month. The increase was paced by higher prices for hogs, cattle, wheat, milk, and eggs.

Were it not for questions about the food and energy areas, the near-term outlook for inflation would almost surely have entailed rates of inflation well below the double-digit range. The sharp run-up in inflation during 1973 and 1974 can be traced, in large part, to exceptional factors, such as depreciation of the United States dollar in the foreign exchange markets, the termination of wage and price controls, the quadrupling of foreign oil prices, and worldwide crop failures. Most of these factors have now run their course and have had their full impact on inflation. In addition, in early stages of past recoveries, the excess capacity and slack within the economy have tended to restrain the rate of growth of prices. In the current recovery, however, it does seem as though consumer prices outside the food and energy areas have lately tended to rise at somewhat faster rates than those experienced earlier in the year, despite the pronounced slack. Considering the unusually heavy inventory liquidation that was occurring at that time, perhaps businesses were temporarily keeping a very tight lid on price increases until they had managed to eliminate the inventory overhangs. In that event, the rates of inflation recorded earlier in the year would have been below the levels consistent with the underlying cost trends. This would explain the current anomalous situation in which nonfood, nonenergy prices appear to be accelerating somewhat in the face of the high unemployment rate and low rates of capacity utilization.

The July sale of 9.8 million tons of grain to the Soviet Union plus possible Government approval of further sales later this year has triggered fears of food inflation similar to that experienced after the 1972 Soviet purchases. However, the overall agricultural situation is quite different from 1972 when in addition to the Soviet purchases there were poor crops here and abroad, a sharp cutback in the output of Peruvian fish meal, and a burst in agricultural exports. The wheat harvest this year is a record, while the corn crop recovered sharply from last year's disappointing performance. Therefore, before the Soviet grain sales, there had seemed to be a good chance that food price rises would moderate markedly from those recorded in the past few years. Since then, however, the United States Department of Agriculture has estimated that already consummated export sales might add 1.5 percentage points to retail food inflation in 1976. The impact of such a rise in the price of food, which constitutes around one fourth of the total consumer price index, on overall consumer price inflation would amount to less than 0.5 percent. With respect to the timing of the increase, higher wheat prices could put pressure on retail prices for cereal and bakery products in coming months. Higher corn prices could raise feed costs and stimulate the slaughter of beef. In that event, meat price increases would temporarily moderate, followed by some reacceleration when beef supplies tighten in early 1976.

Presently, it is far from certain that energy prices will experience any sustained rapid rise. The recent OPEC decision to raise foreign oil prices by 10 percent or $1.05 per barrel, effective October 1, is a far cry from the approximately $7 run-up that occurred in late 1973 and early 1974 when energy prices soared in response. In addition, the impact of the most recent OPEC price hike on domestic oil prices may be blunted to some extent by price shading by some members of OPEC. Furthermore, in view of the recent weak domestic demand for some refined oil products, it is unclear how much and how fast the increase in crude oil prices will be passed along to consumers. Of course, a good deal of uncertainty also exists about the exact nature of possible domestic oil price decontrol after the recently extended November 15 termination of controls. Sudden decontrol would concentrate the price impact over a short time span, while phased decontrol would spread the impact over a longer period. In the event that the $2 duty on imported oil is removed, some of the impact from the OPEC oil price rise and the possible termination of controls would be offset. Clearly then, the outcome with respect to domestic price controls and tariffs is one of the major uncertainties of the near-term inflation outlook.

The Money and Bond Markets in September

Short-term interest rates were little changed over the month, although some upward pressure emerged around the quarterly statement date. The continued moderate growth reported for the monetary aggregates reduced the concern of market participants over a near-term tightening of money market conditions by the Federal Reserve. Nevertheless, further signs of a strengthening economy and prospects of heavier credit demands weighed on market sentiment.

In the Government and corporate securities markets, opposing forces left yields somewhat higher on balance by the month end. Fears of renewed inflation deepened with news of the developing economic recovery. An announcement by the Treasury of enlarged borrowing needs with more emphasis on selling longer term issues to finance them also was a depressing influence. On the other hand, the consumer price index for August showed a low rate of increase, and substantial demand emerged in the auctions for Treasury securities. Developments in the corporate market were also greatly aided by a relatively small amount of new issues offered during the month and expected in the near future. This partly reflected the massive corporate debt financing earlier in the year and the cancellations or postponements of issues due to current levels of interest rates.

Meanwhile, yields in the municipal market rose sharply in September to record levels, as New York City's fiscal crisis continued to weigh heavily on this sector. Legislation to provide additional revenues for the city was passed by the New York State legislature early in September, but investors remained concerned over the financing needs of state and local government borrowers and their access to the market. Investor concern deepened at the close of the month when a section of the legislation which required the use of pension funds of state employees was declared unconstitutional by New York State's highest court.

According to preliminary data, which now reflect recent bench-mark revisions, growth in the narrow money stock (M_1) remained moderate in September for the third straight month. Growth of the more broadly defined money stock (M_2), though more rapid than that of M_1, was also moderate when compared with recent historical patterns. The bank credit proxy halted its recent decline and grew modestly during the month.

THE MONEY MARKET AND THE MONETARY AGGREGATES

The Federal funds rate and other short-term rates were stable over most of the month, although increased churning in the money market put some upward pressure on rates toward the month end (see Chart I). Many large banks apparently sought to add to certificates of deposit (CDs) before the quarterly statement publishing date, and rates on these instruments started rising around the middle of the month. For September as a whole, the effective rate on Federal funds averaged 6.24 percent, compared with a 6.14 percent average in August. Member bank borrowings from the discount window continued to be modest on average over the month (see Table I), as the rate on Federal funds remained only slightly above the discount rate. Rates on 90- to 119-day dealer-placed commercial paper were raised during the month ¼ percentage point to 6⅞ percent, while rates on bankers' acceptances were approximately unchanged. In the secondary market, the rate on large negotiable CDs maturing in ninety days closed the month at 7.03 percent, up 8 basis points from the end of August.

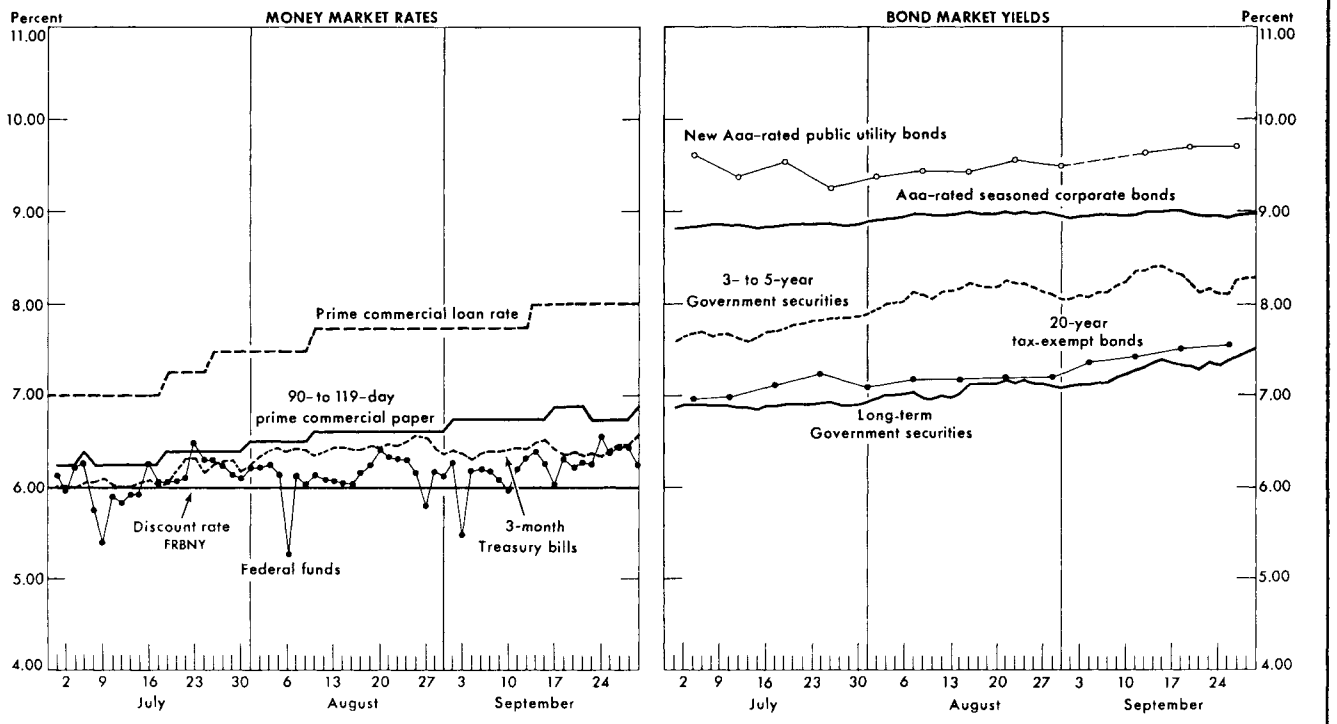
The demand for bank loans by businesses, in decline since last December, remained weak during September. Commercial and industrial loans at large commercial banks rose only $4 million in the first four statement weeks in September, compared with a $1,330 million average increase over similar periods in the previous four years. Nevertheless, most money center banks raised their prime lending rate ¼ percentage point to 8 percent.

During the month, the Board of Governors of the Federal Reserve System released revised estimates of the money stock measures for the period beginning January of this year for M_1—private demand deposits adjusted plus currency outside commercial banks—and beginning October 1974 for M_2—M_1 plus time deposits other than

Chart I

SELECTED INTEREST RATES

July-September 1975



Note: Data are shown for business days only.

MONEY MARKET RATES QUOTED: Prime commercial loan rate at most major banks; offering rates (quoted in terms of rate of discount) on 90- to 119-day prime commercial paper quoted by three of the five dealers that report their rates, or the midpoint of the range quoted if no consensus is available; the effective rate on Federal funds (the rate most representative of the transactions executed); closing bid rates (quoted in terms of rate of discount) on newest outstanding three-month Treasury bills.

BOND MARKET YIELDS QUOTED: Yields on new Aaa-rated public utility bonds are based on prices asked by underwriting syndicates, adjusted to make them equivalent to a standard Aaa-rated bond of at least twenty years' maturity; daily averages of yields on seasoned Aaa-rated corporate bonds; daily averages of yields on long-term Government securities (bonds due or callable in ten years or more) and on Government securities due in three to five years, computed on the basis of closing bid prices; Thursday averages of yields on twenty seasoned twenty-year tax-exempt bonds (carrying Moody's ratings of Aaa, Aa, A, and Baa).

Sources: Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System, Moody's Investors Service, Inc., and The Bond Buyer.

large negotiable CDs. The revisions reflect data obtained from the April 16 call report for nonmember banks and from reports from foreign agencies and branches. The major effect of the revisions was to lower the average level of M_1 during 1975 by about $1 billion. As a result, growth of M_1 from 1974 has been lowered slightly. All money stock data in this article reflect these revisions.

Preliminary data indicate that growth in the monetary aggregates remained moderate in September. During the four-week period ended September 24, seasonally adjusted M_1 averaged 2.6 percent at an annual rate above its average during the four statement weeks in August. This brought the growth in M_1 from its average level in the four weeks ended thirteen weeks earlier to 3.0 percent at an annual rate (see Chart II). Consumer-type time and savings deposits at commercial banks continued to grow somewhat more slowly than their rapid pace in the first half of the year, partly in lagged response to the run-up in market interest rates in recent months. During the first four statement weeks of the month, these deposits averaged 6.9 percent at an annual rate above their level in the period ended four weeks earlier. Over the same period, M_2 increased at a 5.0 percent rate. CDs, reversing a steady decline since January, grew at a 3.3 percent annual rate in September. The bank credit proxy—total member bank deposits subject to reserve requirements plus certain nondeposit sources of funds—rose in September for the first time in three months.

Table I

FACTORS TENDING TO INCREASE OR DECREASE MEMBER BANK RESERVES, SEPTEMBER 1975

In millions of dollars; (+) denotes increase and (−) decrease in excess reserves

Factors	Changes in daily averages—week ended				Net changes
	Sept. 3	Sept. 10	Sept. 17	Sept. 24	
"Market" factors					
Member bank required reserves	− 42	+ 118	− 188	− 293	− 405
Operating transactions (subtotal)	− 899	+1,153	− 257	−3,381	−3,384
Federal Reserve float	− 62	+ 546	− 194	+ 158	+ 448
Treasury operations*	− 607	+ 433	+ 245	−3,829	−3,758
Gold and foreign account	− 62	− 51	+ 26	+ 41	− 46
Currency outside banks	+ 9	− 115	− 73	+ 208	+ 29
Other Federal Reserve liabilities and capital	− 177	+ 339	− 262	+ 42	− 58
Total "market" factors	− 941	+1,271	− 445	−3,674	−3,789
Direct Federal Reserve credit transactions					
Open market operations (subtotal)	+ 748	−1,757	+ 677	+3,399	+3,067
Outright holdings:					
Treasury securities	+ 116	− 55	− 186	+1,907	+1,782
Bankers' acceptances	+ 10	− 20	− 7	+ 32	+ 15
Federal agency obligations	− 23	—	− 1	—	− 24
Repurchase agreements:					
Treasury securities	+ 474	−1,410	+ 783	+1,173	+1,020
Bankers' acceptances	+ 86	− 166	+ 51	+ 123	+ 94
Federal agency obligations	+ 85	− 106	+ 37	+ 164	+ 180
Member bank borrowings	− 50	+ 163	− 58	+ 68	+ 123
Seasonal borrowings†	+ 11	+ 3	+ 7	+ 3	+ 24
Other Federal Reserve assets‡	+ 265	+ 27	+ 88	− 35	+ 345
Total	+ 963	−1,567	+ 707	+3,432	+3,535
Excess reserves‡	+ 22	− 296	+ 262	− 242	− 254

	Daily average levels				Monthly averages§
Member bank:					
Total reserves, including vault cash‡	34,544	34,130	34,580	34,631	34,471
Required reserves	34,223	34,105	34,293	34,586	34,302
Excess reserves	321	25	287	45	170
Total borrowings	222	385	327	395	332
Seasonal borrowings†	51	54	61	64	58
Nonborrowed reserves	34,322	33,745	34,253	34,236	34,139
Net carry-over, excess or deficit (−)‖	177	170	4	108	115

Note: Because of rounding, figures do not necessarily add to totals.
* Includes changes in Treasury currency and cash.
† Included in total member bank borrowings.
‡ Includes assets denominated in foreign currencies.
§ Average for four weeks ended September 24, 1975.
‖ Not reflected in data above.

THE GOVERNMENT SECURITIES MARKET

Yields on coupon-bearing Treasury obligations rose on balance during September, while rates of return on Treasury bills fluctuated in a narrow range. During the first half of September, investors became increasingly concerned about inflation and the financing needs of the Treasury. With these considerations weighing on the market, prices of longer maturity issues weakened substantially. After midmonth, some good news on the price front and massive retail interest in a Treasury auction precipitated a short rally, but most coupon issues ended the month with higher yields on balance. Relatively stable dealer financing costs supported the Treasury bill market and, with supply pressures potentially easing, rates were fairly steady over most of the month.

On September 10, the Treasury announced its overall cash needs for the remainder of the year and its financing plans for September. With expenditures continuing to run above earlier projections, with the possible suspension of oil import fees, and with a decision to maintain a higher average cash balance, the Treasury raised its estimates of needed financing. Borrowing requirements in the second half of 1975 are now expected to total $44 billion to $47 billion, up from the $41 billion figure estimated in August. The Treasury also indicated that its financing plans would place less emphasis than previously on the bill market in order to minimize any disintermediation effects of the borrowing program. The September component of the Treasury's borrowing was $4 billion in new cash raised by the auction of an additional $1 billion of two-year notes (part of a $3 billion financing) on September 16, by the addition of $1 billion to the auction of 52-week bills on September 17, and by an auction of $2 billion of 29-month notes on September 24.

The Treasury announcement had a depressing effect on the coupon market which was still assimilating the news of a bulge in energy and food prices in July and August. However, in the September 16 auction of two-year notes, an unexpectedly large amount of noncompetitive tenders resulted in about 45 percent of the $3 billion issue being purchased by individual investors and smaller financial institutions. At 8.44 percent, the average yield on these notes was less than anticipated although 19 basis points above the average yield at the auction of similar notes on August 14. The relatively small proportion of the issue taken by dealers left the notes in a favorable technical position. The improved market tone following the auction was reinforced on September 18 by the release of the consumer price index for August which rose at only a 2.0 percent annual rate, the smallest

monthly increase in three years. In the auction of $2 billion of 29-month notes on September 24, aggressive bidding resulted in an average yield for the notes of 8.10 percent, with a sizable portion awarded to noncompetitive tenders.

In the final week of the month, the market resumed the downward course that had been followed during the first half of the month. Accompanying this decline was a request by Treasury officials, in testimony before the Congress, to extend to ten years the maturity on securities that can be issued without restrictions on the interest rate and to provide authority to sell longer term issues without regard to the interest rate ceiling. Over the month as a whole, the index of yields on intermediate-term Government securities rose 26 basis points to 8.28 percent. The yield on the 8½ percent Treasury bond of 1994-99 rose to 8.64 percent at the end of September, up 21 basis points from its level at the end of August. Lower coupon bonds showed a more pronounced trend. The yield on the 4¼ percent Treasury bond of 1987-92 rose to 6.42 percent, up 54 basis points from the end of August.

With short-term rates remaining relatively stable over most of the month, inventory financing costs did not apply significant pressure on Government securities dealers. In addition, the outlook for supply in the bill market was improved by the Treasury's stated intention to rely to a lesser extent on short-term issues to finance the deficit. As a result, bills traded in a narrow range until the last two days of the month when yields on three-month bills rose 15 basis points. At the weekly auction of September 29, the average yields on three- and six-month bills were 6.55 percent and 6.98 percent (see Table II), compared with 6.38 percent and 6.87 percent, respectively, in the last auction of August. Over the month as a whole, yields on most bills rose 10 to 29 basis points.

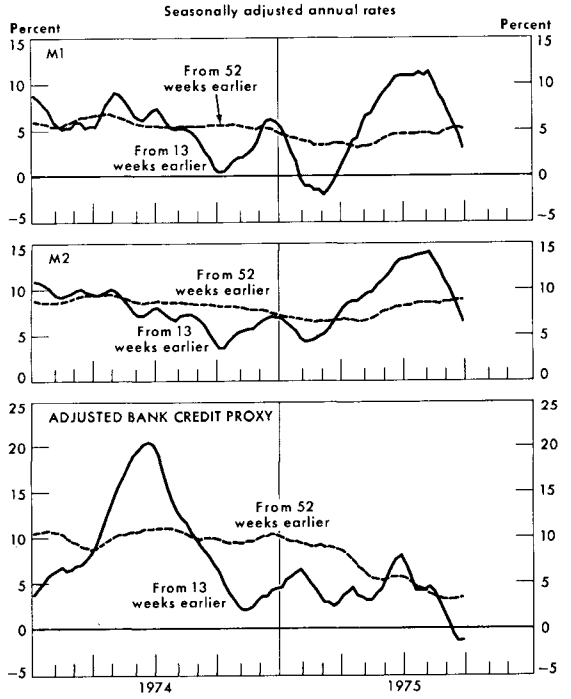
On September 4, the Treasury auctioned $1.5 billion of cash-management bills, with $800 million to mature on September 18 and $700 million to mature on September 25. Like a similar issue in August, these thirteen- and twenty-day bills were designed to dampen fluctuations in the Treasury's balances at Federal Reserve Banks.

In the major agency issue of the month, the Federal National Mortgage Association (FNMA) issued $400 million of four-year debentures at 8½ percent and $300 million of seven-year debentures at 8.60 percent. Both issues were well received. In August, FNMA had issued $650 million of five-year debentures at 8¾ percent.

Chart II

CHANGES IN MONETARY AND CREDIT AGGREGATES

Seasonally adjusted annual rates



Note: Growth rates are computed on the basis of four-week averages of daily figures for periods ended in the statement week plotted, 13 weeks earlier and 52 weeks earlier. The lastest statement week plotted is September 24, 1975.

M1 = Currency plus adjusted demand deposits held by the public.

M2 = M1 plus commercial bank savings and time deposits held by the public, less negotiable certificates of deposit issued in denominations of $100,000 or more.

Adjusted bank credit proxy = Total member bank deposits subject to reserve requirements plus nondeposit sources of funds, such as Euro-dollar borrowings and the proceeds of commercial paper issued by bank holding companies or other affiliates.

Source: Board of Governors of the Federal Reserve System.

THE OTHER SECURITIES MARKETS

Competition from the Treasury for long-term funds and uncertainty about the outlook for inflation dominated sentiment in the corporate bond market during September. Few new issues were brought to market, and the calendar was lightened further by postponements due to market conditions. Prices eroded steadily in light trading over the first half of the month. However, after midmonth the good reception in a Treasury note auction and the small increase in the consumer price index were viewed very favorably, and a short, sharp rally ensued. Some profit taking occurred later in the month, but corporate prices generally held steady as the forward calendar for new debt financing appeared manageable.

Developments in the corporate market in September were reflected in the bellwether financing of the month,

a two-part offering of Aaa-rated telephone utility debt. The financing totaled $200 million: $75 million of six-year notes yielding 8.70 percent and $125 million of forty-year bonds yielding 9.70 percent. Although the return on the bonds compared very favorably with a similar issue yielding 8.80 percent when brought to market in mid-July, the market had deteriorated significantly before the offering date of September 17. Dealers encountered initial investor resistance to the terms set for the bonds. However, after the results of the Treasury auction became known, the bonds quickly sold out. With the additional impetus of the small increase announced for the consumer price index, the bonds traded above their issue price when released from syndicate restrictions on September 22. During the ensuing week, the market retreated again so that, at the month end, the price of the bonds was 1½ points below their high of the previous week.

The financial problems of New York City dominated the market for state and local government debt issues in September. During the first week of the month, the increasing difficulties in arranging a timely aid package for New York City caused price quotations on Municipal Assistance Corporation (MAC) issues to drop sharply. The tax-exempt market received some respite on September 9 when the New York State legislature provided additional funds for the city and established an Emergency Financial Control Board to oversee the city's fiscal operations. Under the legislation, the state would provide $750 million (to be financed by state borrowing) to the city by purchasing $250 million of MAC bonds and $500 million of city and MAC notes. Another $725 million was to have been obtained from city and state employee pension funds, with the remainder coming from tax prepayments, net new purchases or underwritings of $250 million of MAC issues by New York banks, and other sources.

Shortly after the enabling legislation passed, the 9 percent MAC bonds due in 1985, which had fallen to 84 at the end of the preceding week, rose to 89½. Nevertheless, considerable uncertainty still prevailed. On the day after the passage of the legislation, New York State, presumably because of the increased burden of its financial commitment to New York City, encountered investor hesitancy when it offered $755 million of short-term notes in a negotiated offering. Of those notes, $105 million due in December was offered to the public at a 6 percent yield, $400 million due in six months was offered to yield 7½ percent, and $250 million of one-year notes was priced to yield 8 percent. During the following week, two other New York State borrowers also encountered considerable reluctance from lenders and could borrow only at very high yields through private placements. Interest charges on one-year notes were reported to be 9.5 percent for the New York State Housing Finance Agency and 9¾ percent for the New York State Dormitory Authority.

Table II

AVERAGE ISSUING RATES AT REGULAR TREASURY BILL AUCTIONS*

In percent

Maturity	Weekly auction dates—September 1975			
	Sept. 8	Sept. 12	Sept. 22	Sept. 29
Three-month	6.389	6.444	6.316	6.547
Six-month	6.889	6.901	6.824	6.980
	Monthly auction dates—July-September 1975			
	July 24	Aug. 20	Sept. 17	
Fifty-two weeks	6.782	7.331	7.338	

* Interest rates on bills are quoted in terms of a 360-day year, with the discounts from par as the return on the face amount of the bills payable at maturity. Bond yield equivalents, related to the amount actually invested, would be slightly higher.

At the close of the month, the highest court in New York State declared unconstitutional the mandated investment of state employee pension funds to aid New York City. The decision affected the use of $125 million of funds, which was part of the aid package passed earlier by the state legislature. In the wake of the court decision, price quotations on MAC issues plunged to new lows as concern developed over whether enough funds to stave off a default by the city would be forthcoming.

The problem of dwindling investor confidence extended to other state and local government borrowers as well. In mid-September, the Massachusetts Housing Finance Agency was able to sell about $128 million of bond anticipation notes only after the full faith and credit of the state was placed behind the notes, which were priced to yield from 5.75 percent for December 1975 maturities to 6.75 percent for September 1976 maturities. When marketed at the end of the month, $50 million of Aaa-rated bonds of the State of California encountered investor resistance despite generous yields. The Bond Buyer index of twenty bond yields on twenty-year tax-exempt bonds on October 1 rose to a record 7.67 percent from its level of 7.18 percent on August 28. The Blue List of dealers' advertised inventories rose by $4.5 million and closed the month at $635 million.

A Primer on Federal Reserve Float

By ARLINE HOEL*

Federal Reserve float arises in connection with collections and transfers of funds through the Federal Reserve System when credit is passed to an institution receiving funds on a different day than the corresponding charge is made to the institution making payment. This can occur for a variety of reasons, but generally the cause is a slowdown or speedup *vis-à-vis* the usual time schedule in the complex processing of check collections and funds transfers.

Both the Federal Reserve System and Federal Reserve member banks are keenly interested in Federal Reserve float because it influences the amount of reserves available to member banks to support outstanding deposit liabilities, and it is subject to wide short-run variations which sometimes are difficult to anticipate and interpret. In 1974, for example, Federal Reserve float provided a daily average of $2.3 billion in member bank reserves—about 6 to 7 percent of the roughly $36 billion of total member bank reserves—and day-to-day movements averaged over $500 million.

Since the specifics of the arrangements for collections and transfers through the Federal Reserve are continually evolving to meet the needs of the economy, Federal Reserve regulations and practices that bear on Federal Reserve float are continually being reviewed and adjusted. Changes in recent years have resulted in a sharp decline in the level of Federal Reserve float and shifts in the pattern of day-to-day changes. This article describes some of the main mechanics of Federal Reserve float to provide a background for evaluating ongoing events. In addition, it describes some of the broad developments recently in the behavior of Federal Reserve float.

WHAT IS FEDERAL RESERVE FLOAT?

Each day the Federal Reserve System transfers many billions of dollars on behalf of depositors at Federal Reserve Banks. These deposits are held primarily by the commercial banks that are members of the Federal Reserve System and also by the United States Treasury, various United States Government agencies, foreign governments, foreign central banks, and international organizations. Similar to the way in which customers at commercial banks deposit funds into and make payments out of their checking accounts, depositors at Federal Reserve Banks transfer funds into and make payments out of their accounts at Federal Reserve Banks.

In the majority of transfers through the Federal Reserve, a depositor receiving funds is credited on the same day that the institution paying the funds is charged. For a variety of reasons, however, the crediting and charging may not be accomplished on the same day. In these circumstances, Federal Reserve float is created. Depending on whether the receiving institution is credited before or after the paying institution is charged, the Federal Reserve float created may be either positive or negative. If the receiving institution is credited *before* the paying institution is charged, debit (or positive) Federal Reserve float results. If the receiving institution is credited *after* the payor is charged, then there is credit (or negative) Federal Reserve float. At any time, of course, both

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circumstances are occurring. In the aggregate, therefore, Federal Reserve float is the difference between two quantities—positive Federal Reserve float and negative Federal Reserve float. In practice, positive Federal Reserve float is almost always much larger than negative Federal Reserve float.[1]

While this general explanation of Federal Reserve float generation is quite simple, in practice float is created by a wide variety of specific and different problems which affect various aspects of the collection and transfer processes. The Federal Reserve collection process is concerned primarily with checks drawn on commercial banks, while the main transfer processes are for wire transfers of deposits at Federal Reserve Banks and United States Government and Federal agency securities. The following sections, therefore, describe first the check processing system and then the wire transfer network, showing the relevant details that bear on float creation. Where appropriate, brief historical descriptions are included.

CHECK PROCESSING AND FEDERAL RESERVE FLOAT CREATION

Prior to the establishment of the Federal Reserve System in 1913, there existed no centralized check-clearing mechanism. Many banks were affiliated with local clearing associations and cleared checks drawn on more distant banks through correspondent banks or by means of direct presentation. All these arrangements were complicated and had drawbacks. For checks cleared locally, settlement was accomplished in a variety of ways. In some clearing associations, for example, settlement had to be in gold or with drafts drawn on one large bank doing business with other local banks. In other cases, local clearing associations permitted banks to carry accounts with the association itself.

The clearing of checks outside local areas was commonly accomplished through a network of correspondents. Banks sent out-of-town checks to their correspondents and received payment through credits to their accounts at the correspondent banks. To cover expenses, correspondents charged customer banks fees for collection services. An alternative for collecting banks was to mail the checks directly rather than presenting them through a correspondent. In such cases, the bank on which the check was drawn acted as its own collection agent and remitted slightly less than the full face value of the check as a service charge. This latter practice was known as nonpar check collection. In attempting to minimize these charges, banks frequently developed lengthy, circuitous clearing routes. In one notable instance, a southeastern bank in collecting payment for checks drawn on a bank four miles away routinely shipped the checks over a 2,250-mile route.

When the Federal Reserve System was formed, check collection was one of the major responsibilities assigned to it, with the objective of providing efficient, centralized payment at par for checks drawn either locally or on distant banks. After the first few years, no charges were made for check collection, even for checks traveling across the country. The mechanism for clearing checks among local banks followed the pattern set earlier by some clearing associations; payments and charges were made to member banks' accounts with the District Federal Reserve Bank.

For checks drawn on banks in other Federal Reserve Districts, a new mechanism was created where settlement among Federal Reserve Banks was made through the Gold Settlement Fund, which was administered by the Board of Governors of the Federal Reserve System. Each Federal Reserve Bank deposited gold with the United States Treasury, and gold certificates were issued in receipt. Ownership in the Gold Settlement Fund, subsequently called the Interdistrict Settlement Account, was maintained by entries on the books of the Board of Governors and on the books of each Federal Reserve Bank.

Initially, the Federal Reserve attempted to avoid all float on local items by establishing a voluntary plan involving simultaneous credits and charges. This plan had a major shortcoming, however, in that checks were charged to paying banks before physical presentation was made. This made it necessary for paying banks to hold greater reserve balances than desired in order to avoid overdrafts as a result of unanticipated check payments. Few banks joined the plan, therefore, and the system was replaced in 1916 by a countrywide clearing arrangement which is the basis of today's system.

The new arrangement was based on the principle of deferred credits and charges. The depositing bank re-

[1] From an accounting point of view, Federal Reserve float does not appear as a separate item on the consolidated balance sheet of the Federal Reserve Banks. Rather, it is calculated as the difference between the asset account "Cash items in process of collection" and the liability account "Deferred availability cash items". In addition, any balance in another liability account entitled "Due to other Federal Reserve Banks—collected funds" also is deducted. This account does not appear separately on the Federal Reserve Banks' Consolidated Statement of Condition as reported in the *Federal Reserve Bulletin* but is included in "Total deposits". The balance in this account is zero except, for the most part, in circumstances where some Federal Reserve offices are open and others are closed.

ceived delayed credit, and the paying bank was allowed time to remit. The delays set on both sides of the transaction allowed sufficient time for the paying bank to receive notice that payment was due. Each Federal Reserve Bank developed its own time schedule for deferred credits covering the entire country, based on shipment times between Federal Reserve Banks and banks on which the checks were drawn. As shipment times changed, the deferment schedules were appropriately adjusted.

As in the past, today's check collection cycle is initiated by the deposit of a check at a commercial bank. If a check is drawn on the same bank at which it is deposited, the collection cycle is completed internally. If the check is drawn on another bank, however, one or more other procedures must be employed to complete the collection cycle.

Under one common arrangement, checks are sent directly to the bank on which they are drawn and the banks settle with each other. Alternatively, checks may be sent to correspondents which provide clearing services or may be cleared through a clearing association of which the bank is a member. Finally, the checks may be cleared through the Federal Reserve System. To demonstrate how most check-related Federal Reserve float is generated, only the fourth method—clearing through the Federal Reserve System—is described.

A Federal Reserve office receives checks from other Federal Reserve offices and directly from commercial banks both in its own territory and in other territories.[2] The checks received from senders in other territories are payable at banks in its own territory, while checks received from banks in its own territory may be payable at banks either within or outside its territory.

Commercial banks usually sort checks into categories as specified by each Reserve office, according to availability of credit and condition. Transmittal letters—called cash letters—are prepared indicating the total dollar amount for each category and are sent with the checks by first-class mail, messenger, or courier service. On arrival at Federal Reserve Banks, the cash letters are marked to indicate the date on which the depositing bank will receive reserve credit according to published time schedules. This can range from the same business day the items are received to two business days later.

Depending on their physical condition, checks are processed either on computers or on manually operated proof machines that list and cumulate the values of the checks in a deposit and sort the checks according to the banks on which they are drawn. Checks drawn on banks in other territories are simply sorted to the Federal Reserve offices serving those territories. The cumulated totals are verified against the amounts calculated by the depositing banks and discrepancies are resolved. Accounting data, indicating the dates and amounts by which depositors are to be credited and payors are to be debited, are generated during the processing cycle and are submitted to a computer for final entry to member bank reserve accounts. On the day credit is due, the depositors' reserves are automatically increased and, on the day that payment is made, the payors' reserves are reduced.

Checks drawn on banks in the same territory are delivered to paying banks by first-class mail or courier service, while those drawn on banks in other territories are dispatched to the appropriate Federal Reserve offices where they are further processed and delivered to the paying banks.[3] Separate daily statements are delivered to each bank showing the items that the Federal Reserve office has received from and sent to the bank. When discrepancies of significant magnitude arise, the banks notify their Federal Reserve offices so that adjustments can be made to their reserve accounts.

As noted earlier, credit for items deposited at Reserve offices is passed on a deferred basis in accordance with published schedules. The credit availability date is established to correspond to the date payment is *expected* to be received, assuming the collection process goes smoothly. However, it is important to note that credit is passed regardless of whether or not the collecting Reserve office actually has received payment. Consequently, on those occasions when credit is passed before payment has been received, float is generated.[4]

[2] A "territory" is the area assigned to a particular Federal Reserve office within a Federal Reserve District.

[3] About 55 percent of the checks (72 percent of the dollar volume) shipped between Federal Reserve offices is directly controlled by the Interdistrict Transportation System. This organization, headquartered at the Federal Reserve Bank of Chicago, was formed in 1971 to improve interterritory check deliveries. As a result of its investigations, an air charter service was made available to Federal Reserve offices in 1973. The organization also collects comprehensive data on interterritory check shipments and maintains close contact with the Federal Reserve Bank of New York, informing forecasters when possible of major transportation delays which can affect daily movements in float.

[4] As mentioned above, payment alternatively may be collected before credit is extended, creating credit (or negative) float. In practice, however, credit float is much smaller than debit float.

There are, of course, a variety of substantive reasons why payment may not be received on the day credit automatically is passed. Thus, Federal Reserve float associated with check collection can be broken down into various components related to the underlying reason for the disruption of the check collection cycle. The categories which are useful to the Federal Reserve in monitoring float are described briefly below. The overall behavior of Federal Reserve float primarily reflects the combined behavior of these categories.

HOLDOVER FLOAT. Holdover float arises from delays in processing checks at Federal Reserve offices. These delays can arise from unexpected volume peaks, unusually high staff absences, computer malfunctions, and a variety of other causes. Whatever the cause, however, credit for the value of cash letters as calculated by depositing banks is passed as specified in published schedules. Thus, depositing banks receive reserve credit as scheduled, but before payment is collected. As a result, Federal Reserve float occurs, lasting until the processing cycle is completed.

TRANSPORTATION FLOAT. The time schedules specified by Federal Reserve offices in passing credit for checks depend critically on shipping times between Federal Reserve offices and commercial banks. When checks do not reach their destinations as scheduled, payment is made after credit is extended to depositors, creating float. Transportation delays which cause bulges in Federal Reserve float can arise from a variety of causes, such as bad weather, strikes, mechanical breakdowns, fuel shortages, and other problems.

REJECTED ITEMS FLOAT. Among checks deposited as qualified for processing on high-speed computer sorting equipment, some may for various reasons be rejected by this equipment, necessitating handling on slower manually operated machines. The result is that all the rejected items may not be processed as normally scheduled on the day they are deposited at a Federal Reserve office. Consequently, payment for the rejected items which are not processed will be made after credit has been passed, thereby generating Federal Reserve float.

INTRATERRITORY DELAYED PRESENTMENT FLOAT. In some circumstances, a Federal Reserve office and some commercial banks in a Federal Reserve territory may be open while other commercial banks in the same territory are closed. For example, in the Federal Reserve Bank of Chicago's territory, some Illinois banks close regularly on Wednesdays and remain open on Saturdays. The Federal Reserve Bank of Chicago extends credit as scheduled to depositing banks that are open for checks drawn on the closed banks but does not collect payment until the following business day. As a result, Federal Reserve float occurs until the banks on which the checks are drawn reopen on the next business day and payment is collected.

The practice of passing credit despite the fact that a paying bank is closed is followed because of the cost of sorting and processing separately the checks drawn on closed banks. Patterns of simultaneously closed and open banks within a territory occur both on a regular basis, as described in the example, and also occasionally due to differential patterns of state holidays in Federal Reserve territories that cross state lines.

Intraterritory delayed presentment float also arises in several territories in which there are some remotely located banks where the combination of high transportation costs and low volume make uneconomic the regular overnight delivery of checks from Federal Reserve offices to the banks on which they are drawn. As in the case of closed banks noted above, the costs of sorting and processing separately checks drawn on these banks cannot be justified economically. As a result, payment cannot be collected until after credit is given to depositors.

INTERTERRITORY DELAYED PRESENTMENT FLOAT. Float also occurs when one or more Federal Reserve offices are closed for a holiday while other Federal Reserve offices remain open. This category of float has both positive and negative components that are significant. Checks drawn on commercial banks in territories where the Federal Reserve offices are closed, but which are deposited prior to the deposit deadline in open Federal Reserve offices, generate positive Federal Reserve float. Credit is extended to depositor banks in open territories, even though the open Federal Reserve offices cannot collect payment from closed Federal Reserve offices until the next business day.

Conversely, checks which are drawn on open banks and are deposited prior to the deposit deadline in closed Federal Reserve offices generate negative Federal Reserve float. Payment is collected from banks in open territories as scheduled, but credit cannot be extended to banks in closed territories until the next business day when the Federal Reserve offices reopen. The relative magnitudes of the positive and negative float depend both on the patterns of Federal Reserve office closings and on the alternate routing patterns that commercial banks use when closings in some territories occur during the week.

On January 1, 1976, this category of Federal Reserve float should be reduced significantly. At that time, new

procedures are scheduled to be implemented, under which an open Federal Reserve office generally will defer the extension of credit for checks drawn on banks in a closed territory one business day longer than otherwise would be the case. Conversely, to reduce the incentive for member banks in a closed territory to use alternate routing patterns, adjustments will be applied to their reserve accounts for credit which would have been granted to them if the Federal Reserve office of the territory in which they are located had been open.

MIXED CASH LETTER FLOAT. Some cash letters delivered to Federal Reserve offices for collection are not sorted according to credit availability. These "mixed cash letters" are made up of checks ordinarily entitled to different credit availability, ranging from immediate to two business days. Thus, if uniform credit availability is assigned to a mixed cash letter, Federal Reserve float arises since the credit and payment dates for at least some checks in these letters differ.

To encourage depositor banks to sort checks into cash letters that have uniform credit availability, a number of Federal Reserve offices assign credit availability to mixed cash letters according to the items in the letters that have the longest collection time. For example, if a mixed cash letter consists of some checks for which credit is normally given immediately and others for which credit is given in two business days, all items in the letter are assigned a deferred availability of two business days. Since payment for some items in the mixed cash letter is collected immediately, negative Federal Reserve float is produced in the amount of these items since credit is given two business days later.

Special provision has been made for Federal Reserve offices to accept mixed cash letters from Government agencies and member banks with very small volumes of check deliveries, since it would be quite costly for such senders to acquire the staff and machinery necessary to sort checks according to credit availability. To minimize the effect of these letters on daily fluctuations in Federal Reserve float, they are assigned automatic credit in one business day. Checks drawn on banks for which payment is collected immediately generate negative Federal Reserve float, since credit is extended on the next day. But this negative float is offset by the effect of checks drawn on banks for which payment is collected in two business days. These generate positive Federal Reserve float since credit is extended in one business day.

TIME SCHEDULE FLOAT. Prior to November 9, 1972, reserve credit for items drawn on "country" banks in other Federal Reserve territories was extended to banks in a maximum of two business days following the day of deposit with a Federal Reserve office. But Federal Reserve offices normally did not collect payment for these checks until the third business day, usually one day after presentment. Consequently, float was created on the second business day following deposit. However, an amendment to Regulation J, which became effective on November 9, 1972 and was directed at eliminating time schedule float, provided that paying country banks would be debited on the business day of presentment in order to coincide with the day on which Federal Reserve offices extended credit to depositors.

THE FEDERAL RESERVE WIRE TRANSFER NETWORK AND FEDERAL RESERVE FLOAT

While the largest part of Federal Reserve float is associated with the clearing of checks drawn on commercial banks, occasionally large amounts also are associated with transfers of Federal Reserve deposits and United States Government and Federal agency securities by the Federal Reserve. These transfers are accomplished over the Federal Reserve's nationwide wire transfer network. This section describes how such transfers are effected between major commercial banks that have access to the network and the manner in which they sometimes affect Federal Reserve float.

Suppose that a business firm or individual wishes to withdraw some funds from an account at a New York City bank and have them transferred to an account at a bank in San Francisco that same day. In the morning, the firm telephones its New York City bank and requests that the funds be transferred to the San Francisco bank. After verifying the caller's authority to withdraw funds from the account, an operator in the bank's wire transfer division, if the bank is directly "on line", typically punches information onto perforated paper tape indicating the banks involved in the transfer, the amount of money, and the customer's account to which the money should be credited. If the bank is not "on line", an operator at the bank telephones the Federal Reserve Bank of New York, which processes and transmits the message for the bank. Whatever the procedure followed, the message is verified and entered into a computer terminal which is linked directly by wire to a computer switch at the Federal Reserve Bank of New York. This switch, in turn, is linked directly to the Federal Reserve System's interdistrict computer switching facility at Culpeper, Virginia.

Once the message is entered, computers located in the Federal Reserve Bank of New York automatically reduce

the New York City commercial bank's deposit or reserve account, credit the "Due to the Federal Reserve Bank of San Francisco" account for the account of the receiving bank, and route the message to the Culpeper facility.

The message is received by the Culpeper computers and, when a line becomes available, is transmitted to the Federal Reserve Bank of San Francisco. There the receiving commercial bank's deposit or reserve account is automatically credited, an account "Due from the Federal Reserve Bank of New York" is debited, and the information is routed through the computer switch to the San Francisco commercial bank. Having these funds, the San Francisco commercial bank then credits the account for which the funds are intended. That evening the Federal Reserve Bank of San Francisco receives payment from the Federal Reserve Bank of New York through the Interdistrict Settlement Account.

In 1974, about 14.5 million of the foregoing types of money transfers involving about $30 trillion were processed through the Federal Reserve wire transfer network. Typically, they have no impact on Federal Reserve float since the receiving bank is credited and the sending bank is debited on the same day. Despite extensive precautions, however, from time to time there arise operational problems within the transfer network. In such circumstances, the Culpeper facility is immediately alerted, transmissions to and from the affected office are terminated, and incoming transfers to the affected office are stored by the computers at Culpeper until the problem is eliminated. In most cases, the problems are resolved before the end of the day and normal operations are completed still without any impact on Federal Reserve float.

Occasionally, however, problems cannot be resolved before the Reserve offices *not* experiencing difficulties must close for the day. In these instances, credit (or negative) Federal Reserve float typically is created. This occurs because the office experiencing difficulty generally remains open until all work, both incoming and outgoing, is processed. With other Reserve offices closed, however, all outgoing work from the affected office is not received until the next day. Thus, the reserve accounts of the sending commercial banks at the affected office are reduced as scheduled, but the accounts of the receiving banks at the offices that experienced no problem are not increased. Similarly, Federal Reserve Banks do not complete settlement through the Interdistrict Settlement Account. The level of net Federal Reserve float plunges, therefore, until the following day when the funds transferred and interdistrict settlement are completed. In practice, member banks with accounts at unaffected offices are usually compensated for reserves lost through such interferences by appropriate reserve adjustments.[5]

The transfer of United States Government and Federal agency securities over the Federal Reserve communications network can also create float on occasion. The mechanics of a securities transfer closely parallel those just described for the movement of Federal Reserve deposit balances. Similar messages are prepared by banks wishing to send securities, usually a bank selling or acting on behalf of a dealer, corporation, individual, or other bank wishing to sell a security. These messages contain information concerning the security in addition to normal accounting data. Where the transfer crosses Federal Reserve District lines, payment is accomplished through the Interdistrict Settlement Account, exactly as in the case of a money transfer.

When problems arise that prevent securities transfers from being completed on a same-day basis, Federal Reserve float occurs. However, in contrast to the money transfer case, delayed securities transfers create positive float. Since the seller initiates the transaction and receives simultaneous payment, a delay means that the buyer is not charged on a timely basis. Such float continues until settlement is completed through the Interdistrict Settlement Account. Because the dollar volume of securities transfers is very large, breakdowns can create sizable bulges in net float. However, because the entire network is automated, such bulges seldom occur and even then rarely last more than one day.

[5] A reserve adjustment is an after-the-fact correction to the amount considered as "maintained reserves"—vault cash, balances on the books of the Federal Reserve, and prior reserve adjustments—for an individual bank for a particular reserve period. A reserve adjustment is never made as an accounting entry on the Federal Reserve books. A member bank meets its reserve requirements by having adequate "maintained reserves". In some cases, reserve adjustments affect Federal Reserve float, and in other cases they do not. Because of the small size of many adjustments and the cost involved, it is not feasible to determine in all cases whether float is affected.

Reserve adjustments create certain statistical problems. The most important of these involves the level of float as calculated from the "Consolidated Statement of Condition of All Federal Reserve Banks" and in a table titled "Member Bank Reserves, Federal Reserve Bank Credit, and Related Items", both published monthly in the *Federal Reserve Bulletin*. The former never includes reserve adjustments, while the latter usually does, creating a discrepancy between the alternative float numbers. The discrepancy persists because the two tables serve different purposes. The Consolidated Statement of Condition reflects book balances and is prepared on the basis of standard accounting principles, while the Member Bank Reserves table is for statistical purposes and is adjusted where possible to remove known distortions. Federal Reserve float data from this table also are used in money supply calculations and are occasionally adjusted for this purpose when large reserve adjustments are known not to have affected float.

FEDERAL RESERVE FLOAT AND EXTENDED DISBURSEMENT FLOAT

The foregoing discussion of Federal Reserve float provides a useful background for viewing a phenomenon sometimes termed "extended disbursement float", which has been the subject of recent business and financial community discussion. Briefly stated, extended disbursement float arises from the practice, apparently followed by some corporations, of writing checks on banks distant from the creditors to whom they are sent. The purpose of this practice is to maximize the time it takes for the checks to clear against a corporation's accounts and thus to defer as long as possible the date on which it is necessary to provide funds to cover its checks. This, in turn, enables the firm to stay invested in interest earning assets or to delay borrowing as long as possible. The key to this scheme, it has been asserted, lies in a "structural defect in the Federal Reserve System", wherein the Federal Reserve grants "good money"—i.e., gives deposit or reserve credit to the bank presenting the check for collection—before payment is received from the bank on which it is drawn.

Contrary to the foregoing view, Federal Reserve float is not the "key" in any meaningful sense to extended disbursement float. Rather, the essence of extended disbursement float lies in the fact that it generally takes longer to collect payment for checks drawn on banks remote from the banks in which the checks are deposited. This is true because checks drawn on distant banks typically pass through additional hands and processing steps and are transported greater distances. Moreover, there is the possibility of additional delays at every additional step in the collection process. Federal Reserve float may or may not be involved in extended disbursement float, but even if it is its contribution is unlikely to be large. For the most part, extended disbursement float depends on a combination of what are usually termed "mail float", "bank float", and delays in processing by creditors receiving payments.

Mail float arises when a corporation draws a check to the order of a creditor and dispatches it through the mails. In many transactions, the drawer considers itself—subject to successful collection of the check—to have discharged its obligation. So long as the check is in the mails, however, the issuing corporation can defer the funding of the check since the bank on which it is drawn has not yet had to make payment for it through a reduction of its deposits at a Federal Reserve Bank or correspondent bank. Float arises in the sense that the firm has discharged its obligation but has not yet had to provide funds to do so. Mail float persists until the check is delivered to the creditor by the postal service, which may be several days or more after the check is written. The Federal Reserve, of course, is not at all involved in mail float.

After a check is delivered to a creditor, it ordinarily takes some period of time for the creditor to process and deposit the check in its commercial bank. During this interval, the drawer continues to have the use of its funds, and in this sense float continues, even though it typically is not categorized as a particular type of float. This additional period of processing time, which again could amount to several days or more, contributes to extended disbursement float, but again the Federal Reserve is in no way involved.

Once the creditor deposits the check in its commercial bank, there arises what typically is referred to as "bank float", which persists until the bank where the check is deposited (or its correspondent bank, if the check is forwarded for collection) either receives credit from the Federal Reserve or collects for it in some alternative manner. Bank float again may extend for several days, since the drawer continues to have the use of its funds. The Federal Reserve System may be involved while bank float persists, in the sense that it may be in the process of collecting payment for the check. However, Federal Reserve float does not arise during this period.

Federal Reserve float may arise only after so-called bank float has disappeared, when the commercial bank sending a check to the Federal Reserve for collection receives reserve or deposit credit before the Federal Reserve collects payment. During any such period, of course, the corporation that issues the check continues to have use of its funds. It is unlikely, however, that Federal Reserve float, if it does happen to arise, would persist for more than a day or two at most, a relatively short period compared with the overall period of extended disbursement float. Thus, while Federal Reserve float conceivably can be involved in the extended disbursement sequence, it does not constitute the key to the scheme.

Regardless of whether Federal Reserve float is involved in extended disbursement float, the Federal Reserve is interested in curtailing the development of the practice. The reason is that the entire procedure leads to an unnecessary use of resources. The drawing of checks on banks in distant locations results in higher collection costs than if the checks were drawn on banks in closer proximity by using more labor, equipment, and transportation facilities. Ultimately, of course, these higher costs are paid by the general public through increased expenditures by the postal service, commercial banks, and the Federal Reserve.

FEDERAL RESERVE FLOAT AND OPEN MARKET OPERATIONS

From the viewpoint of monetary policy, Federal Reserve float is of interest primarily because it bears on the conduct of Federal Reserve open market operations. These operations consist of purchases and sales of United States Government and Federal agency securities in the open market for the purpose of providing an appropriate supply of reserves to the banking system. It is through this means that the Federal Reserve influences financial liquidity in the economy generally and implements its monetary policy objectives. In addition to being influenced by open market purchases and sales, however, the supply of reserves available to the banking system also is affected by other factors not under direct Federal Reserve control. Federal Reserve float is prominent in this group, which also includes currency in circulation and balances at the Federal Reserve Banks of the United States Treasury, other Government agencies, and foreign and international agencies. At times, shifts in these factors coincide with desired open market operations, but at other times they change to the contrary and must be offset. Indeed, a substantial share of day-to-day operations are for this purpose. Float is among the most variable and least predictable of the factors affecting reserves, the combination of which can at times create formidable operational problems.

The variability and unpredictability of Federal Reserve float has long been a problem and has been at least one of the factors considered in the efforts initiated over the years to reduce the level of float. One such effort was undertaken in 1972, when Regulation J was amended to speed payment to the Federal Reserve for checks drawn on banks outside Federal Reserve cities. This amendment had the effect of largely eliminating the time schedule component of float. Total float fell from its 1972 peak of $3.3 billion to about $2.3 billion in 1974. In addition, an expanded air charter service to speed check delivery to most Federal Reserve offices was implemented in 1973 by the Interdistrict Transportation System, helping to reduce the average volume of transportation float.

Despite these reductions in the average level, daily and weekly Federal Reserve float fluctuations have remained large. Indeed, the weekly variability of float appears to be no lower now than before Regulation J was changed and the new air charter service was introduced. Similarly, seasonal and intramonthly movements in Federal Reserve float, which are related to corresponding patterns in the volume of payments in the economy, have remained roughly stable in recent years despite these changes.

Intraweekly movements in float, however, changed significantly with the virtual elimination of time schedule float in November 1972. Time schedule float accounted for a significant portion of total float, and more important it moved in a highly predictable manner. Most other float components were then and have remained much more random in their movements, arising as they do from events such as computer breakdowns, severe weather, labor strikes, concentrated episodes of staff illness, and the like. Such events have the potential of causing float unexpectedly to rise or fall by $1 billion or more from one day to the next.

Such considerations bear heavily on the problem of forecasting float, which is necessary in planning open market operations. The elimination of time schedule float removed much of the predictable element in intraweekly movements, leaving the forecaster the problem of dealing primarily with the results of random events. Some basis for attacking this seemingly impossible problem does exist, however, since the deferred availability feature of check collection means that the float impact of many events will be delayed a day or two. Hence, timely notification of events known to disrupt the clearing process can aid the forecaster in making quick adjustments to near-term float projections.

CONCLUDING COMMENTS

This article has described the present status of the Federal Reserve collection and transfer mechanisms as they bear on Federal Reserve float and has explained relevant aspects of changes in those mechanisms over time. To date, the volume of collections and transfers processed has grown steadily from about $17 trillion in 1970 to about $38 trillion in 1974, with correspondingly rapid growth in capacity. Expansion of capacity has brought computerization, establishment of Regional Check Processing Centers, specialized transportation facilities, automated communications facilities, and changes to the regulations under which collections and transfers are effected. Although the details are uncertain, the future probably will bring continued growth in volume, significant adjustments to processing facilities, and more Regional Check Processing Centers.

The check has been around for a long time, and its form and use have developed in an evolutionary rather than revolutionary way. No doubt it will continue to evolve. However, the future of automated funds and securities transfers seems less predictable and potentially much more volatile. While the transfer of funds and securities by wire has been an operational reality for over fifty years, both domestic and international use of this technique has

grown with the emergence of the computer and more sophisticated communications equipment. Today, tens if not hundreds of billions of dollars change hands daily through the various public and private automated communications networks, with the vast majority of transfers having no impact on Federal Reserve (or other) float except when breakdowns occur. These networks are used almost exclusively by large corporations, governments, banks, and similar sizable institutions transferring very large sums in each transaction. On the horizon, however, are similarly automated payments mechanisms oriented toward the small commercial transaction at present largely handled by cash, credit card, or check. The appearance and acceptance of such systems should significantly reduce the use of checks.

As a larger proportion of all transfers become automated so that credit is extended immediately and simultaneously as payment is collected, seasonal and intramonthly variations in Federal Reserve float most likely will become less pronounced. With a growing portion of transfers receiving immediate credit and a smaller portion receiving deferred credit, the number of float-producing events whose effects can be incorporated into the forecasts with early notification will diminish. Hence, float movements can be expected to become even more random in character, and the forecaster's problem will therefore become much more difficult. In effect, to forecast float it will become increasingly necessary to anticipate such random events as computer breakdowns and other problems which cause interferences in automated transfer systems.

THE CULPEPER SWITCH

The Culpeper Switch, a new nontechnical twenty-page booklet, explores six decades of communications development and expansion, culminating in the establishment of the Federal Reserve System's communications network.

Single copies of the publication are available without charge from the Public Information Department, Federal Reserve Bank of New York, 33 Liberty Street, New York, N.Y. 10045.

Per Jacobsson Foundation Lecture

The Per Jacobsson Foundation in Washington, D.C., has made available to the Federal Reserve Bank of New York a limited number of copies of the 1974 lecture on international monetary affairs. The Foundation sponsors annual lectures on this topic by recognized authorities in honor of the former Managing Director of the International Monetary Fund, who died in 1963.

The eleventh lecture in this series was held in Tokyo on October 11, 1974 in the headquarters building of the Federation of Bankers Associations of Japan. Two papers were presented on the subject "Steps to International Monetary Order", one by Conrad J. Oort and the other by Puey Ungphakorn. Dr. Oort is Treasurer-General at the Department of Finance of the Netherlands Government and was for over ten years Professor of Economics at the University of Utrecht. Dr. Puey, Professor of Economics at Thammasat University in Bangkok, is Chairman of the Council of Economic Advisers to the Prime Minister of Thailand and was former Governor of the Bank of Thailand. Commentaries were offered by Saburo Okita of Japan, who is President of the Overseas Economic Cooperation Fund, and William McChesney Martin, former Chairman of the Board of Governors of the Federal Reserve System.

This Bank will mail copies of the lecture without charge to readers of the *Monthly Review* who have an interest in international monetary affairs.

Requests should be addressed to the Public Information Department, Federal Reserve Bank of New York, 33 Liberty Street, New York, N.Y. 10045. French and Spanish versions are also available.