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Contents

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The Business Situation

Recent developments suggest that the economy may be resuming an expansionary course. Housing starts and building permits showed renewed strength in March, suggesting that further gains in residential construction spending are likely to emerge in the coming months. Similarly, the continued large volume of state and local government bond financing indicates some additional spending thrust from this sector. However, the extent of overall economic growth for the balance of the year depends critically on the behavior of consumer spending. In the first quarter, consumer expenditures as recorded in the gross national product (GNP) accounts posted a large increase which was primarily the result of the rebound in spending on motor vehicles from its strike-depressed fourth-quarter level. However, advance retail sales data for March and some sketchy data for April suggest that consumer outlays for nonautomotive durables, as well as nondurable goods, have been gaining some momentum. In the second quarter, a boost in personal income resulting from increased social security benefits may reinforce this apparent move toward a stronger underlying pace of consumer spending.

Although there were some encouraging developments during the first quarter, a clear trend toward a broad-based moderation of inflationary pressures has not yet emerged. On the positive side, the rate of increase in consumer prices slowed somewhat during the first three months of the year. On the other hand, even allowing for the influence of special factors, the GNP deflator continued to rise at a rapid rate. Prices of wholesale industrial commodities, moreover, spurted sharply in April after having moderated in the first quarter. Furthermore, compensation per man-hour increased by about 7 percent over the past year, a rate of gain which has not abated despite the marked rise in unemployment.

GROSS NATIONAL PRODUCT

A $28.5 billion rise in the market value of the nation's total output of goods and services during the first quarter raised GNP to a seasonally adjusted annual rate of $1,018.4 billion, according to the preliminary estimates of the Department of Commerce. Just as the previous quarter's GNP had been depressed by the General Motors strike, the first-quarter gain in GNP was swelled by the rebound of activity from the strike. The average quarterly increase in GNP over the two quarters was a modest $16.5 billion. Real GNP rose at a seasonally adjusted annual rate of 6.4 percent in the first quarter in 1971, with the gain in automotive production more than accounting for the increase. Over the two quarters ended in March, real GNP rose at a very low annual rate of 1.1 percent.

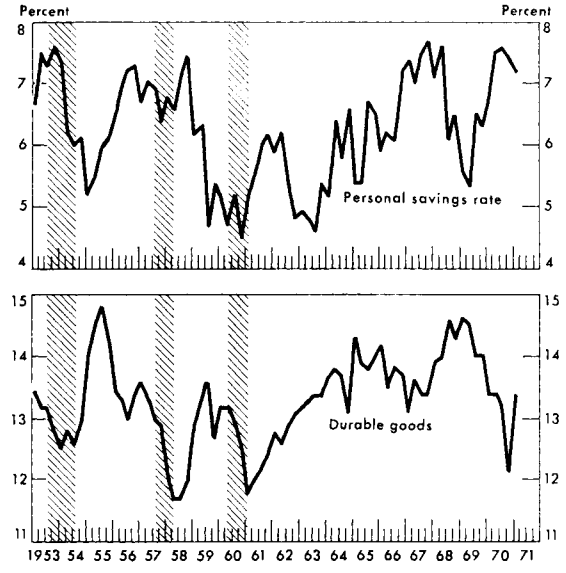
The first-quarter increase in final expenditures—that is, GNP less the inventory component—amounted to almost $30 billion, with 60 percent of that gain arising from the consumer sector. The overall gain in consumer spending reflected higher outlays for durable and nondurable goods as well as for services. The rise in consumer outlays for services was in line with recent experience, while the gain in purchases of nondurables was of modest proportions. On the other hand, durables spending increased by a large $10.8 billion, a gain of 12.7 percent. This expansion in durable goods expenditures pushed the ratio of consumer durables outlays to disposable income to 13.4 percent. In the past, similar movements in this ratio have tended to signify a cyclical strengthening in the economy (see Chart I). However, inasmuch as virtually all of the first-quarter strengthening in durables spending reflected the recovery in automobile sales from their strike-depressed fourth-quarter level, these first-quarter data do not indicate a firm trend. There were indications, however, that consumer spending on nonautomotive durables as well as on nondurable goods was quickening toward the end of the quarter.

Although there was a large overall first-quarter gain in consumer spending, the savings rate declined by only 0.2 percentage point to 7.2 percent—still about 1 percentage point above its average level for the last two decades (see Chart I). The high savings rate, coupled with the large rise in consumer outlays, was made possible by the gain in disposable personal income in the first three months of 1971. Indeed, fueled by higher personal income payments

Chart I

PERSONAL SAVINGS AND DURABLE GOODS CONSUMPTION AS A PERCENTAGE OF DISPOSABLE INCOME

Seasonally adjusted annual rates



Note: Shaded areas represent recession periods, according to the National Bureau of Economic Research chronology.

Source: United States Department of Commerce.

including the Federal pay boost and by the lower Federal income tax withholdings which took effect on January 1, 1971, disposable income jumped by almost $18 billion. In the current quarter, moreover, both personal income and disposable income will be stimulated further by the large increase in social security benefits that was recently signed into law. This added flow of income raises the possibility that consumer spending will provide additional upward thrust to economic activity in the coming months.

Residential construction spending and outlays by state and local governments, both of which have benefited from improved financial market conditions, were also major sources of strength in the overall first-quarter rise in final demand. For example, spending on residential construction rose by $3.2 billion, bringing the cumulative increase in this spending component over the last three quarters to $7 billion or 25 percent. Moreover, additional gains in residential outlays are likely in the months ahead. For example, after having leveled off in February, housing starts and building permits showed renewed strength in March. Perhaps more importantly, the availability and cost of mortgage credit continued to improve dramatically. During the first quarter, deposit flows to the nation's thrift institutions—the major suppliers of residential mortgage credit—amounted to a record 23 percent on a seasonally adjusted annual rate basis. The effective interest rate on conventional mortgages declined to 7.66 percent in March, 86 basis points below the record high of 8.52 percent reached in August 1970. In addition, over this seven-month period, the loan-price ratio on these mortgages increased, indicating a lowering in downpayment requirements for borrowers.

Improved capital market conditions were also instrumental in the first-quarter surge in purchases of goods and services by state and local governments that amounted to $4.9 billion. Indeed, while payroll costs of these governmental units continue to show a strong upward trend, the overall rise in spending has been given added thrust by the record volume of debt that has been marketed in the last several months. For example, in the nine-month interval ended in March 1971, the tax-exempt bond market absorbed an estimated $16.8 billion in new state and local bonds, up 42 percent over the amount issued in all of 1969. Many of these issues had been scheduled for marketing in 1969 or earlier in 1970 but were postponed because of high interest rates and generally unfavorable credit market conditions. The bonds issued over the last nine months have implications for spending well beyond their contribution to the first-quarter increment in state and local outlays. Inasmuch as most of these issues are used to finance capital projects—new structures, roads, sewers, and the like—their full impact on spending involves a lag of at least several quarters.

Business fixed investment spending rose by $3.8 billion in the first three months of 1971, the largest such gain since the third quarter of 1969. Much of this strength was merely a reflection of the rise in business purchases of automobiles and trucks from the strike-depressed fourth-quarter level. Apart from strike-related factors, business fixed investment expenditures were higher, primarily because business outlays for structures posted a large gain in the first quarter after having declined in four of the preceding five quarters. While these first-quarter data on business investment spending may show a bit of improvement relative to the experience of the last several quarters, the underlying situation for this spending component remains on the sluggish side. The latest survey by McGraw-Hill on corporation plant and equipment expenditures indicated a modest 4 percent increase for this year. This increment is in line with the rise indicated in the recent survey by the Department of Commerce-Securities and Exchange Commission as well as the survey by Lionel D. Edie.

Net exports and Federal Government purchases of goods and services, the remaining two components of final demand, were virtually unchanged in the first quarter.

Net exports expanded by $0.2 billion, while Federal purchases fell by $0.1 billion. The decline in Federal outlays, which occurred in spite of the $2.2 billion pay increase that took effect in the period, reflected the continuing decrease in defense purchases.

On the basis of preliminary data, the rate at which businesses accumulated inventories declined slightly in the first quarter, thereby serving as a restraint on the overall expansion of GNP. The buildup of automobile inventories by dealers who were replenishing their strike-depleted stocks accounted for the inventory investment that did occur, indicating little change of inventories in other sectors. The lack of any accumulation of nonautomotive stocks has created a better balance between the level of inventories and the corresponding volume of sales. With the resulting lower inventory-sales ratio, a pervasive upsurge in sales activity would tend to promote a more expansionary pace of inventory spending.

PRICES, LABOR COSTS, AND PRODUCTIVITY

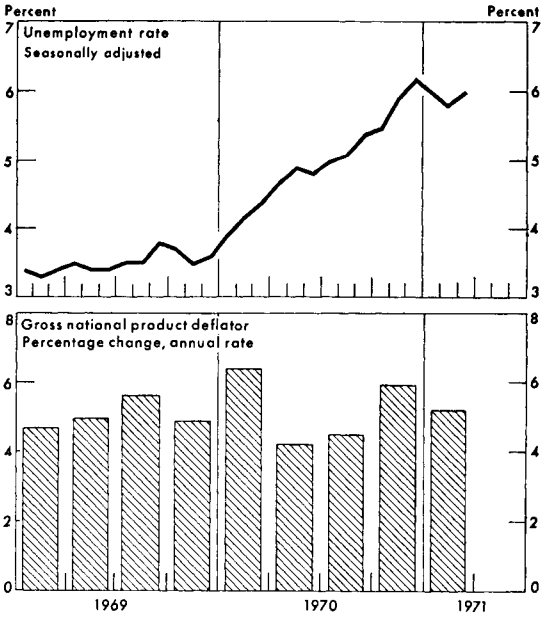
Taken as a whole, the performance of prices has continued to be unsatisfactory, although recent movements in consumer prices have been encouraging. Compared with a 5.5 percent annual rate of increase during 1970, the consumer price index (CPI) rose at a 2.7 percent annual rate in the first three months of 1971. The implicit GNP price deflator rose at a seasonally adjusted annual rate of 5.2 percent in the first quarter of 1971, little changed from the performance of other recent quarters (see Chart II). In fact, because the weights used in calculating the deflator are based on the current composition of output and because there was a first-quarter output surge in the automotive industry—a sector with a low deflator—the rate of increase in the deflator was restrained. For example, using the output weights of the fourth quarter of 1965, the annual rate of increase in the GNP price deflator climbed from 5.1 percent in the last quarter of 1970 to 5.9 percent in the first quarter of 1971. In part, the disparity between the first-quarter performance of the GNP deflator and of the CPI can be attributed to their different coverage. For example, the Federal pay raise added to the GNP deflator without directly affecting the CPI. Moreover, lower interest rates on home mortgages and lower used-car prices, which were major factors in the moderating trend in consumer prices, do not directly influence the GNP deflator. The rapid increase in the GNP deflator suggests that a firm trend toward a more satisfactory price performance has not yet been established. This was underscored by a sharp spurt in industrial wholesale prices in April after more moderate increases in the first quarter. Over the first four months of 1971, industrial wholesale prices advanced 3.7 percent on a seasonally adjusted annual rate basis, virtually the same as the increase registered in 1970 as a whole.

The events of the past year with respect to the observed relationship between the rate of inflation and the level of unemployment seem to run contrary to the post-Korean war experiences. Since the beginning of 1970, the unemployment rate has risen from 3.9 percent to about 6.0 percent, while the rate of inflation as measured by the GNP deflator has remained at about 5 percent (see Chart II). This apparent deterioration in the trade-off between inflation and unemployment may reflect several considerations, such as the duration and intensity of the inflation since 1965 which may have changed expectations of price movements. In addition, there have been demographic shifts in the composition of the work force. For example, the relative number of 16- to 24-year olds in the work force—a group with a high unemployment rate—has increased substantially in the past decade.

Whatever the significance of such factors in explaining the failure of the general price level to respond more quickly to the sluggishness in the economy, the situation

Chart II

UNEMPLOYMENT AND INFLATION



Sources: United States Department of Labor, Bureau of Labor Statistics, and the United States Department of Commerce.

is even worse in terms of the degree to which labor prices have failed to respond to the marked rise in unemployment. In the first quarter, compensation per man-hour in the private economy, measured from a year earlier, rose by a rapid 7.3 percent. Moreover, the increase in compensation per man-hour over the last three years has remained in the neighborhood of 7 percent. Thus, there is no evidence of a slowing in the rate of increase in this broad measure of labor costs per man-hour.

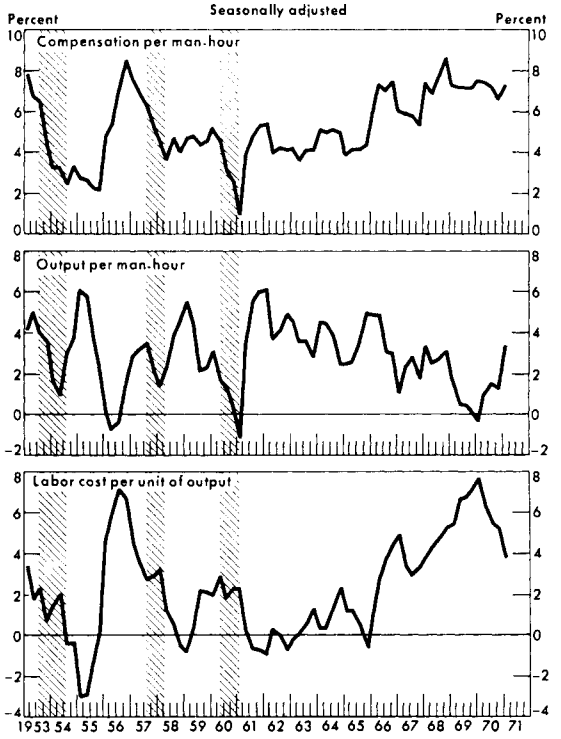
While the rate of increase in compensation per man-hour was essentially unchanged in the first quarter, output per man-hour did register a strong showing. Measured from a year earlier, the growth in this measure of productivity for the private economy was 3.4 percent. This was the strongest productivity increase in three years and was about equal to its long-term trend rate of growth (see Chart III). Over the last year, there has been a movement toward a cyclical strengthening in productivity which, of course, tends to absorb some of the rise in labor costs. However, even with the strong first-quarter gain in productivity, unit labor costs continued to rise rapidly, posting a 3.8 percent gain over the level which prevailed a year earlier. While this represents a significant improvement over the experience of the past three years, it should be noted that, around cyclical upturns in business activity, an increase in unit labor costs as high as 3.8 percent is virtually without precedent. Thus, the strengthening in productivity to date has not been sufficient to stabilize unit labor costs, primarily because the rise in compensation per man-hour has not moderated in response to the slowing of economic activity.

Chart III

LABOR COMPENSATION, PRODUCTIVITY, AND UNIT LABOR COST IN THE PRIVATE ECONOMY

CHANGE FROM FOUR QUARTERS EARLIER

Seasonally adjusted



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

Moreover, the first-quarter data on major labor contract settlements provide little basis for hope of a significant decline in the rate of increase in compensation rates. For example, the contracts negotiated in the first quarter provided for an 8.5 percent increase in wages and fringe benefits over the life of the contract for the 600,000 workers whose representatives signed settlements in this period. While this represents a very slight moderation from the gain of 9.1 percent registered in 1970, the first-quarter increase is still extraordinarily large by historical standards. Of course, contract settlements in the current year tell only part of the story, since a large segment of the workers covered by these major contracts will receive wage adjustments in 1971 on the basis of contracts written in the last year or two. In the current year, almost half of the 10.9 million workers covered by major collective bargaining agreements will receive deferred wage increases averaging 7.8 percent, compared with a 5.6 percent average deferred increase won in 1970. The 7.8 percent figure does not include any wage adjustments that will materialize on the basis of cost-of-living escalation provisions which, in turn, will influence wage rates for about 3 million workers this year. In short, viewed in terms of either the behavior of compensation per man-hour or recent developments in labor contract settlements, wage inflation is still a very serious problem.

Recent Monetary and Bank Credit Developments

Commercial banks and thrift institutions continued to accumulate time deposits at a very rapid rate during the first quarter of 1971. At commercial banks, most of the first-quarter strength in time deposit flows reflected a surge in time and savings deposits exclusive of large negotiable certificates of deposit (CD's in denominations of $100,000 or more). The growth of CD's, meanwhile, slowed markedly from the rapid expansion of the second half of 1970. At thrift institutions, the first-quarter growth in deposits was by far the strongest performance on record. The ability of commercial banks and savings institutions to attract this massive volume of time deposits reflects the very favorable spread between the rates paid by these institutions on time deposits and rates on competing market instruments. Market rates declined substantially over the last three quarters, while rates on savings deposits remained mostly unchanged. In responding to this incentive, households reduced their holdings of other financial assets—particularly United States Government securities —and acquired time deposits in their place.

In the first three months of 1971 the narrowly defined money supply expanded at a rapid 8.9 percent annual rate, but for the six months ended in March the growth rate was a more moderate 6.2 percent. Reflecting the sizable growth in time deposits, the broader monetary aggregates that include some categories of time deposits at commercial banks and savings institutions posted very large increases in the January-March period. Total commercial bank credit also moved upward strongly, rising at a rate of 13.8 percent over the quarter. However, total loans, especially business loans, showed weaker gains. Business loan demand was particularly sluggish around the March 15 corporate tax date and afterward. Thus, a large share of the deposit flows to the commercial banks was directed into purchases of United States Government and tax-exempt securities.

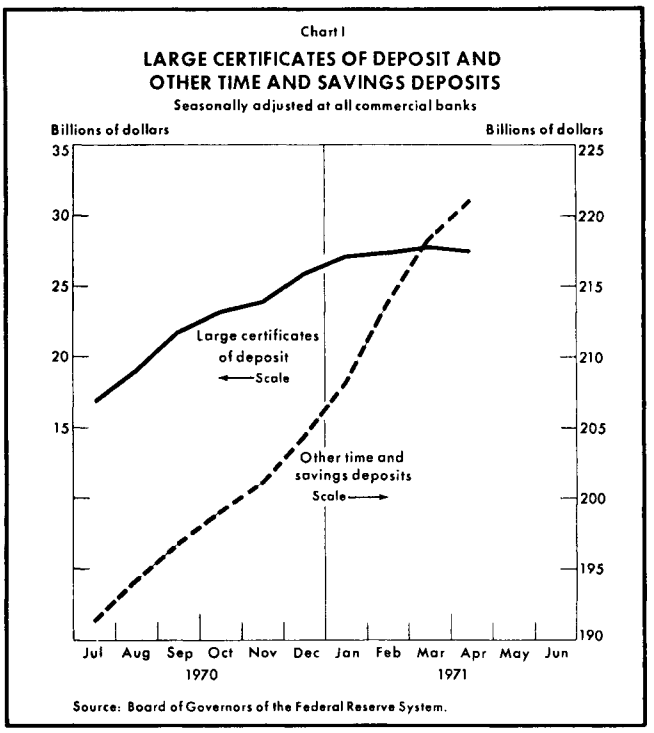
TIME AND THRIFT DEPOSIT GROWTH

During the first quarter of 1971 the strong growth of time deposits continued, enabling banks to accumulate funds and expand their earning assets rapidly. For the first three months of this year, time deposits at all commercial banks advanced at a seasonally adjusted annual rate of 27.3 percent. While this was below the record 32.2 percent pace set in the third quarter of 1970, it nevertheless marked an acceleration from the still rapid fourth-quarter advance of 21.8 percent. Overall, during the nine months ended in March 1971, the $44 billion rise in time deposits was without precedent.

The resurgence of time deposit growth began in the third quarter of 1970, with the Federal Reserve's partial suspension of ceiling rates on large CD's following the announcement of the Penn Central insolvency on June 21. Because of the relaxation of Regulation Q ceilings, banks were better able to compete for funds, and throughout the quarter the growth of large CD's was spectacular. The rate of growth was cut by over one half in the fourth quarter but still remained substantial.

The growth of large CD's leveled off during the first quarter of 1971, while the growth in other time and savings deposits accelerated (see Chart I). Over the quarter, large CD's increased by $1.8 billion at all commercial banks after seasonal adjustment, compared with gains of $8.5 billion and $4.3 billion posted in the third and fourth quarters of 1970, respectively. Other commercial bank time and savings deposits, however, rose by $13.9 billion in the first quarter, up substantially from the $7.8 billion and $7.6 billion gains of the previous two quarters.

The increased growth in time deposits during the first quarter was even more impressive at thrift institutions. This performance came on the heels of a year in which the growth of thrift deposits had staged a substantial recovery. Thrift deposit growth had accelerated in each of the four quarters of 1970, but nevertheless this did not suggest the far larger inflows that would occur in the first quarter of 1971. In January the upsurge of thrift deposits was phenomenal. Over the month, deposits at savings and loan associations grew at an annual rate of 30.7 percent after seasonal adjustment, and mutual savings banks' deposits increased at a rate of 18.1 percent. For savings and loan associations and mutual savings banks combined, the rate of deposit growth was 26.5



percent, which was by far the most impressive one-month performance since the beginning of the data series in 1955. Although the pace of increase slackened somewhat over the next two months, the annual growth rate for thrift deposits was a record 23.1 percent for the quarter. Moreover, Federally insured savings and loan associations reported total new savings received for the quarter were $7.4 billion, which is larger than the receipts of any previous entire year.

The strong growth in time deposits in the past quarter largely resulted from the ability of banks and thrift institutions to offer attractive rates in acquiring funds and to use those funds to make profitable investments. This development, in turn, had its roots in the decline in interest rates which occurred principally in the second half of 1970 and into this year. Reflecting the moderately expansive monetary policy and the sluggishness in the economy, interest rates declined substantially, especially in the short-term area. For instance, market rates on three- and six-month United States Treasury bills in March averaged their lowest levels in seven and one-half years. Long-term rates, on the other hand, fell less rapidly and remained relatively high by historical standards. This created a substantial spread between long- and short-term rates which worked to the advantage of those financial intermediaries, such as commercial banks and thirft institutions, that supply shorter term assets and make longer term investments. By keeping rates offered on passbook-type savings near the regulation ceilings, both banks and thrift institutions were able to benefit from the drop in short-term rates. Responding to this incentive, depositors rapidly built up their time and thrift deposits. On the other hand, large CD's became less competitive with other market instruments as banks slashed CD rates. In fact, banks' offering rates on one- to six-month maturities in March were nearly as low as rates on comparable maturities of bills. Concurrently, the growth rate of CD's continued to fall, and in April the amount of CD's outstanding (seasonally adjusted) actually declined.

THE MONETARY AGGREGATES AND NONDEPOSIT SOURCES OF FUNDS

Despite the considerable weakness shown in January, the narrowly defined money supply (M_1)—currency plus demand deposits held by the public—posted a relatively large gain of 8.9 percent at a seasonally adjusted annual rate in the first quarter (see Chart II). By comparison, in the fourth quarter of 1970, M_1 had expanded at an annual rate of only 3.4 percent. To a large extent, the resurgence of the growth of the narrow money supply in 1971 corresponded with an upswing in economic activity. In the fourth quarter, the gross national product had been depressed by the strike at General Motors and managed a gain of only $4.4 billion. However, after the settlement of the GM strike, the economy was able to rebound with a $28.5 billion increase in GNP in the first quarter of this year. Because of this situation, averaging the growth of the money supply over these two quarters yields more meaningful results than analyzing either the fourth or first quarter independently. Thus, over the September to March six-month period, the growth rate of M_1 was 6.2 percent, which is slightly higher than the rate achieved over the first three quarters of 1970.

The acceleration of the growth of the narrow money supply and the strong growth of time and thrift deposits in the first quarter were reflected in the performance of the broader measures of the money supply as well. These other measures are often designated as M_2 and M_3. M_2 consists of M_1 plus savings and time deposits at all commercial banks other than large negotiable CD's. Although M_2 includes funds not directly transferable by check, these funds may nevertheless serve as close substitutes for demand deposits which are so transferable. Large CD's are excluded from the definition, as their specialized characteristics (such as their large denomi-

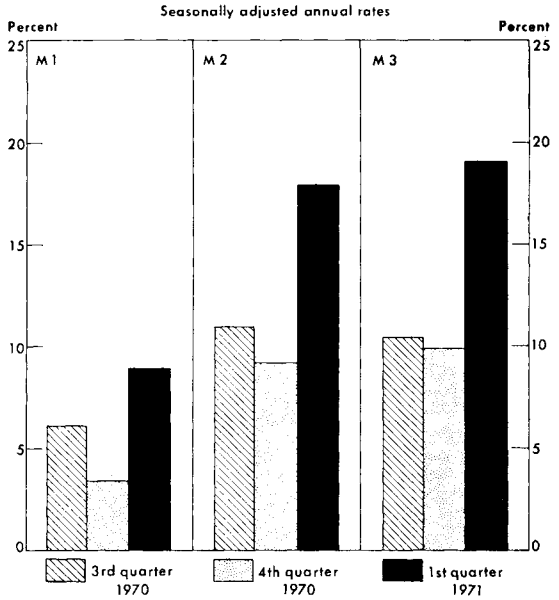
nations and negotiability) make them similar to other market instruments. Since deposits at thrift institutions serve essentially the same purposes as other time and savings deposits and are competitive with them, M_3 includes thrift deposits in addition to the components of M_2.

Over the first quarter of this year, M_2 rose at a seasonally adjusted rate of 17.8 percent, which is well above the 11.0 percent and 9.2 percent rates of the third and fourth quarters of 1970, respectively. M_3 showed similar movements, rising in the first quarter at an annual rate of 19.0 percent as contrasted with the consecutive growth rates of 10.3 percent and 9.6 percent in the previous two quarters. Thus, these data suggest that the growth in the holdings of monetary assets over the past nine months is substantially larger than M_1 alone would indicate. While these broader monetary aggregates typically show a significantly more rapid growth than does M_1 in a period of reintermediation, the magnitude of the divergence in this most recent episode has been somewhat greater than was experienced in other periods.

Chart II

CHANGES IN MONEY SUPPLY

Seasonally adjusted annual rates



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.

M3 = M2 plus deposits held by the public at savings and loan associations and mutual savings banks.

Source: Board of Governors of the Federal Reserve System.

Despite the increases in demand and time deposits, the first-quarter growth rate of the adjusted bank credit proxy —which includes all member bank deposits subject to reserve requirements plus nondeposit liabilities—accelerated only moderately from the fourth quarter of 1970. In the first three months of 1971, the adjusted proxy expanded at a seasonally adjusted annual rate of 10.9 percent, while in the third and fourth quarters of 1970 the respective rates were 17.2 percent and 8.3 percent. Within the proxy, there was a substantial rundown of United States Government deposits late in the first quarter and a persistent decline in nondeposit funds (see Chart III).

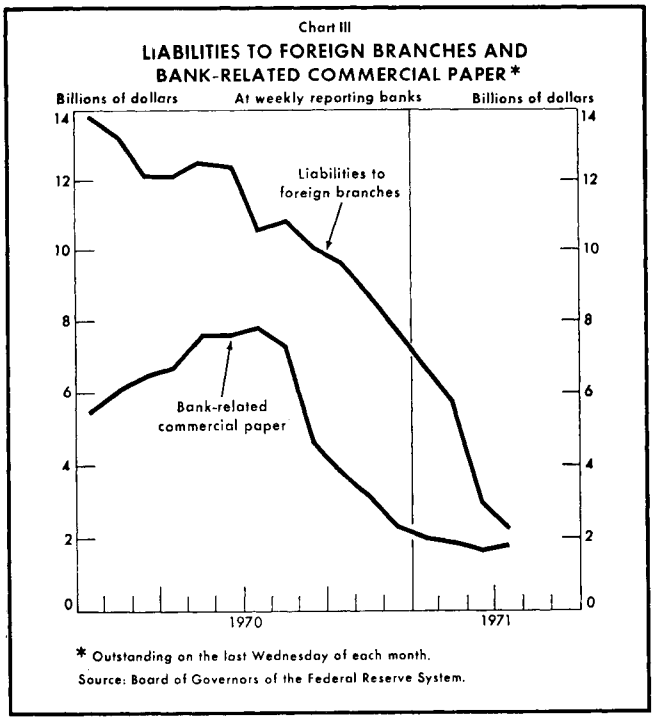
The decline in nondeposit liabilities at member banks in the first quarter represented a continuation of the runoff which began in mid-1970. As a result of the large influx of funds from CD's and the introduction of reserve requirements on funds obtained through the issue of bank-related commercial paper, both liabilities to foreign branches and bank-related commercial paper declined in the second half of 1970. Liabilities to foreign branches, which comprise the bulk of bank Euro-dollar borrowings, fell from a level of $12.4 billion at the end of June 1970 to $7.7 billion at the end of the year, and declined by an additional $4.6 billion in the first quarter. Since many of these high-cost borrowings were incurred during the earlier period of restrictive monetary policy, some decline following a return of funds to the banking system was to be expected. However, the magnitude of the Euro-dollar runoff has complicated an already serious balance-of-payments situation. As a consequence, a number of steps were taken in an attempt to stem the runoff in Euro-dollar borrowings. For example, in an effort to encourage banks to preserve their reserve-free bases against a time of future need, as well as to reduce the immediate outflow of dollars abroad, the Federal Reserve raised the reserve requirement for Euro-dollar borrowings in excess of the base from 10 percent to 20 percent, effective January 7, 1971.

In addition, the Export-Import Bank of the United States in January sold $1.0 billion in 6 percent three-month notes to foreign branches of United States banks. The effect of the undertaking was potentially to "lock up" a portion of the Euro-dollar funds borrowed by the overseas branches, which otherwise might have flowed into foreign central banks. The initial offering of notes in January was followed by another issue of $0.5 billion in early March, and both issues were oversubscribed. The Bank refinanced the original issue upon its maturity in April. Moreover, the Treasury announced on April 1 that it would borrow $1.5 billion of Euro-dollars from the

overseas branches of United States banks. The Treasury set a rate of 5⅜ percent on the three-month issue, which corresponded with the then-current rate on Euro-dollar borrowings. To accommodate this latest offering, the Federal Reserve amended its regulations to allow member banks to count funds invested in the Treasury's issue toward the maintenance of their reserve-free Euro-dollar bases. A similar amendment had been made earlier at the time of the Export-Import Bank's offerings.

From December 30 to March 31, liabilities of United States banks to their foreign branches declined from a level of $7.7 billion to $3.0 billion. If purchases of the special Export-Import Bank securities are combined with Euro-dollar holdings, the amount of decrease is $3.1 billion, which is still larger than the $2.4 billion and $2.3 billion repayments in the third and fourth quarters of last year, respectively. In April, however, total liabilities to foreign branches and special securities holdings actually expanded slightly. This was the first monthly increase since August of last year.

Although bank-related commercial paper also declined in the first quarter, the amount of decline represented a deceleration from that in prior quarters. From December 30 to March 31, the volume of bank-related commercial paper fell from $2.3 billion to $1.7 billion (see Chart III).



By comparison, in the last five months of 1970, banks had reduced this form of borrowing by 70 percent from the peak of $7.8 billion at the end of July. This suggests that banks may be nearing the end of the runoff of their commercial paper, especially since they probably prefer to maintain a presence in the commercial paper market. In this regard, during April the amount of bank-related paper rose slightly. Although this increase may partly reflect the financing activities of the affiliates themselves—i.e., financings not used to supplement bank funds—it nevertheless is the first monthly increase since the runoff began.

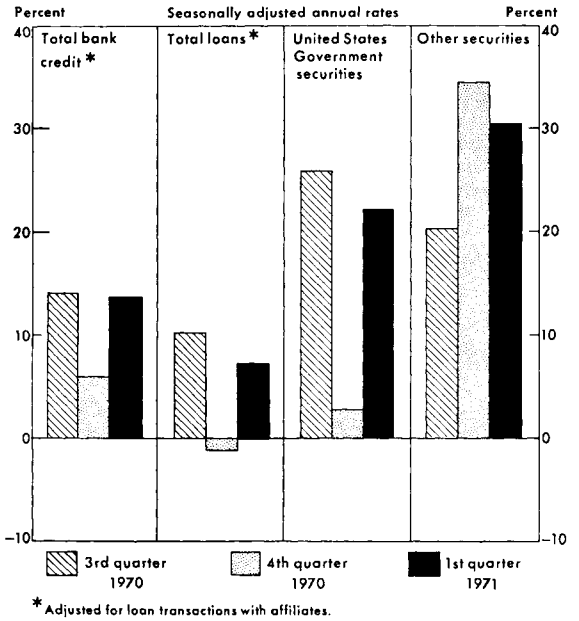
BANK CREDIT

The large flow of funds into the banking sector in the first quarter contributed to the rapid growth of bank credit. Total credit at all commercial banks, adjusted for loan transactions with affiliates, expanded at a 13.8 percent seasonally adjusted annual rate (see Chart IV). This is well above the 6.0 percent rate registered in the prior quarter, and just below the 14.1 percent rate achieved in the third quarter of 1970. Total loans, similarly adjusted, showed the greatest improvement, despite recording no growth in March. During the quarter, total loans adjusted for repurchases grew at a seasonally adjusted annual rate of 7.3 percent, compared with the 1.1 percent rate of decline posted in the fourth quarter of 1970.

The slack in the economy and the tendency of non-financial corporations to restructure their debt, however, were evident in the business loan category. Business loans, also adjusted for transactions with affiliates, managed an annualized seasonally adjusted growth rate for the quarter of only 2.5 percent. This low rate came in spite of the substantial reduction of the prime lending rate from 6¾ percent to 5¼ percent. Although the growth of business loans in the quarter was an improvement over the 9.5 percent rate of contraction recorded in the fourth quarter of 1970, it was still of very modest proportions. Much of the weakness occurred in March, when business loans contracted at a seasonally adjusted annual rate of about 12 percent. Weekly reporting bank data, which are not adjusted for seasonal variation, suggest that most of the weakness of these loans relative to past years occurred in the week ended March 17, which included the corporate tax date, and in the two weeks afterward. Although corporate tax payments were below last year's, the lack of borrowing would seem to be more related to the immense volume of large CD's maturing in March. In addition, a somewhat larger amount of United States Treasury tax anticipation bills was available for the payment of taxes this year. Also, the large volume of corporate flota-

Chart IV

CHANGES IN BANK CREDIT AND ITS COMPONENTS AT ALL COMMERCIAL BANKS



* Adjusted for loan transactions with affiliates.

Source: Board of Governors of the Federal Reserve System.

tions in the quarter, especially in March, may have allowed businesses to reduce their short-term loans at banks.

The growth in other loan components generally demonstrated good strength in the quarter. Loans to nonbank financial institutions moved higher rapidly, while consumer and real estate loans posted moderate gains. Loans in each of these categories bettered their increases of the fourth quarter. Securities loans, which typically are volatile, also expanded but did not equal the strong performance registered one quarter earlier.

Investment holdings of commercial banks continued to increase at a rapid pace in the first three months of 1971. The first-quarter growth rate for total investments was 27.0 percent after adjustment for seasonal variations, which is slightly higher than the 22.6 percent and 21.1 percent rates of the third and fourth quarters of 1970, respectively. Holdings of United States Government securities showed a dramatic increase in growth in February and March and for the quarter grew at a rate of 22.1 percent. This is similar to the 25.9 percent rate of the third quarter and in sharp contrast to the fourth-quarter growth rate of 2.8 percent. Banks also added large amounts of other securities to their portfolios, as they did for most of the second half of 1970. The first-quarter growth rate for these securities stood at 30.4 percent, while in the third and fourth quarters of 1970 the comparable growth rates were 20.3 percent and 34.5 percent.

After increasing in each month in the second half of 1970, bank liquidity showed a tendency to stabilize in the first quarter. While the expanded loan-deposit ratio —the ratio of loans (other than loans to brokers and dealers) to deposits (less cash items in the process of collection) plus liabilities to foreign branches—did decrease by 1.1 percentage points at all weekly reporting banks to a level of 71.2 percent over the quarter, this was less than half the rate of decline of the previous two quarters. Moreover, the liquid-asset ratio[1]—which is an alternative measure of bank liquidity that typically moves inversely to the expanded loan-deposit ratio—showed almost no change in January and February from December's average of 12.6 percent, and then declined to 11.9 percent in March.

[1] The liquid-asset ratio is defined as loans to brokers and dealers, loans to domestic commercial banks, Government securities due within one year, balances with domestic commercial banks, bankers' acceptances, municipal tax warrants, and short-term notes as a percentage of total liabilities excluding capital accounts.

The Money and Bond Markets in April

There was a widespread increase in money market rates during April, which reduced somewhat the sizable interest rate differentials that had developed in recent months between yields on domestic and European short-term market instruments. As a result of the more reluctant provision of reserves during April, the effective rate on Federal funds climbed back to its January level of 4.1 percent, after having averaged 3.7 percent in February and March. This firming of money market rates also offered some resistance to the rapid expansion of the money supply. In the Treasury bill market, enlarged supplies resulting from recent offerings and the firmer money market contributed to a rise in most bill rates of 30 to 75 basis points over the month. Rates on other short-term instruments such as commercial paper and certificates of deposit (CD's) also rose.

Although the April volume of new corporate and municipal bonds was lower than in March, the supply nevertheless was quite heavy and helped push long-term rates higher during the month. Scattered signs of strength in the economy and concern about the position of the dollar internationally contributed to a cautious approach by investors. The response to new issues was mixed, and syndicate price restrictions on a number of slow-moving bonds were dropped. *The Weekly Bond Buyer's* index of yields on twenty municipal bonds climbed to 5.69 percent on April 29, up 54 basis points from April 1, and yields on new Aa-rated utilities rose by about 80 basis points over the month.

Prices of intermediate-term Treasury coupon issues gave ground during the month when bank profit taking developed as uncertainty over the future trend of interest rates increased. As the month progressed, the approaching May refunding also prompted holders to sell those maturities which they expected to be augmented in the refinancing. Long-term Treasury issues were depressed by the deterioration in the corporate market and by the discussion of the possibility that the Treasury would use its newly obtained authority to issue long-term debt. Some $8.4 billion of notes, $5.8 billion of which is held by the public, will mature in May. The Treasury announced the terms of the refunding after the close of business on April 28. Holders of the maturing notes were offered in exchange a 15-month 5 percent note priced at par and a 3½-year 5¾ percent note priced to yield 5.88 percent. Subscription books for the offering were open until May 5, and payment and delivery will be on May 17. Cash subscriptions were not accepted.

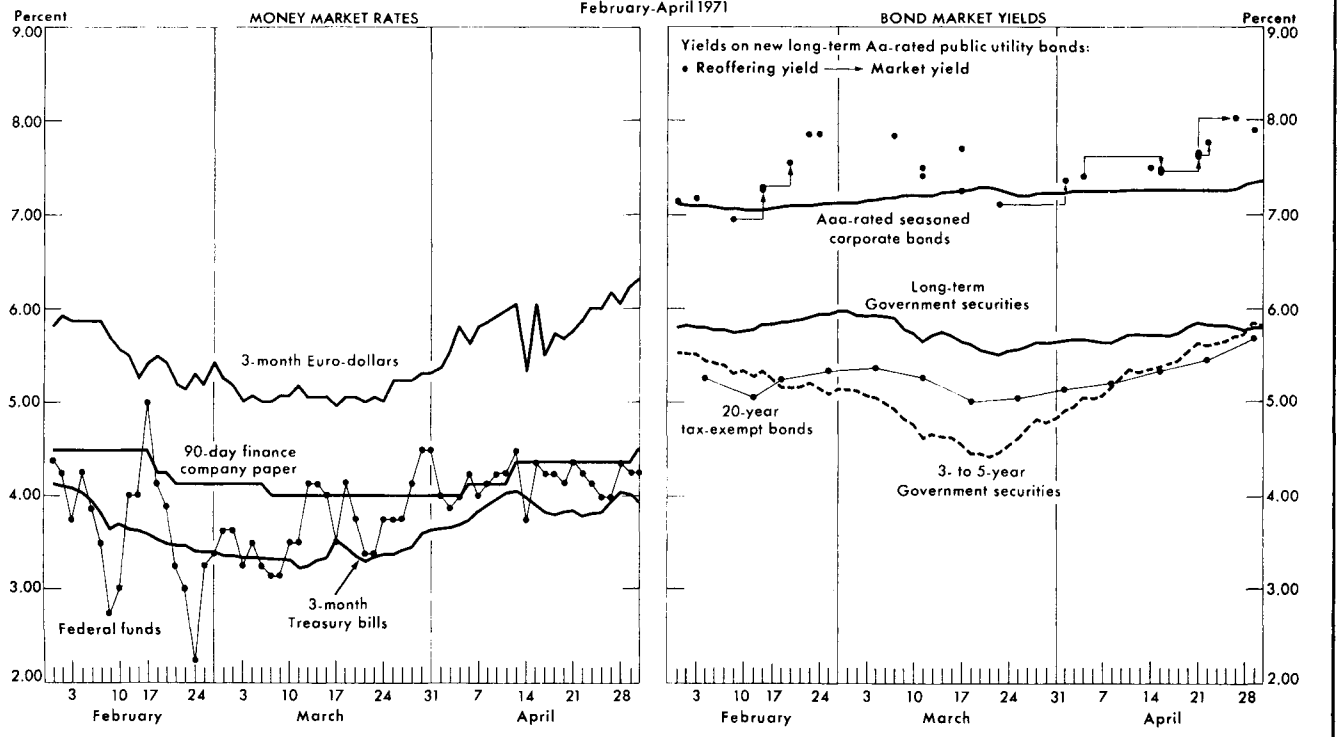
THE MONEY MARKET

Yields on most short-term instruments rose significantly during April (see Chart I). The effective rate on Federal funds averaged 4.16 percent, some 45 basis points higher than the March average, and rates on commercial paper increased substantially in several steps. A rise of ¾ percentage point occurred on prime four- to six-month dealer-placed paper over the month, and increases on some maturities of directly placed paper were as high as 1 percentage point. Bankers' acceptances also posted rate gains amounting to ¾ percentage point, while the most often quoted rate on new 60- to 179-day negotiable CD's at large New York City banks showed about an 88 basis point increase over the month.

Citing overall money market conditions, most major commercial banks lifted their prime rate from 5¼ percent to 5½ percent on April 22 and 23. However, the growth of business loans in large cities continued sluggish, even over the April 15 tax date, and several major banks delayed in following the increase. Excess reserves of $176 million were not substantially different from the $192 million average in March, but member banks reduced their borrowings at the discount window by $160 million to an average level of $152 million in April. As a result, the banks had net free reserves of $24 million on average during the latest period (see Table I).

Expansion of the monetary aggregates tapered off in April, following rapid growth over the two previous months (see Chart II). The narrowly defined money supply (M_1)—currency plus demand deposits held by the public—grew at a seasonally adjusted annual rate of about 7 percent in the seven-month period since

Chart I
SELECTED INTEREST RATES
February-April 1971



Note: Data are shown for business days only.

MONEY MARKET RATES QUOTED: Bid rates for three-month Euro-dollars in London; offering rates for directly placed finance company paper; 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 Aa-rated public utility bonds (arrows point from underwriting syndicate reoffering yield on a given issue to market yield on the same issue immediately after it has been released from syndicate restrictions); 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, and The Weekly Bond Buyer.

September, compared with a 6.0 percent increase over the first nine months of 1970. The growth of time and savings deposits other than large CD's slowed in April from the very rapid rate of the first quarter but remained high by historical standards. M_2, which includes these deposits plus M_1, grew at an annual rate of nearly 14 percent during the past seven months, compared with 7.8 percent during the previous nine months. Primarily as a result of a further decline in liabilities to foreign branches, the adjusted bank credit proxy continued growing more slowly than M_2 in April. During the last seven months the proxy has advanced at about a 9 percent rate, compared with a 10.4 percent rate over the first nine months of 1970.

THE GOVERNMENT SECURITIES MARKET

There was considerable downward pressure on prices of Treasury securities throughout much of April. A major factor contributing to a heavier tone in this market was the unusually large inventories with which Government securities dealers began the month, as well as the relatively high cost of financing these positions. Not only were dealers awarded a sizable volume of bills in the regular weekly and monthly auctions at the close of March, but also they were heavy bidders in two special auctions. These were the March 24 sale of $2.0 billion of tax anticipation bills and the additional $2.2 billion strip of eleven outstanding weekly issues auctioned on March 31.

Commercial banks evinced relatively little interest in the auctions, since they were not permitted to credit their Tax and Loan Accounts for these bills. As the Federal funds and dealer loan rates moved higher during April, along with rates on other money market instruments, Government securities dealers became increasingly anxious to reduce their inventories.

Following the sizable inflow of dollars to European central banks in March, participants in the Government securities markets became apprehensive that additional moves might be required for dealing with the nation's balance-of-payments problems. When some firming of short-term rates developed and was allowed to continue, the general interpretation was that a somewhat tighter monetary policy was being pursued in the interest of strengthening the dollar, and this was a further depressant on the market. Moreover, with the approach of the Treasury's May refunding, there was also a substantial amount of selling by dealers and investors alike in those maturity ranges where new offerings were anticipated.

The greatest selling pressure in the Government coupon market was exerted against intermediate-term issues, the prices of which had increased most sharply in recent months. As prices on these issues began to fall below their March levels, a number of sellers appeared, anxious to take profits before further price erosion occurred. In addition, of course, there were many participants who expected the refunding to include an intermediate note and were lightening their positions in preparation. For a while there were also some sales of long-term issues, since it was thought that the Treasury might use its new authority to issue debt outside the 4¼ percent ceiling. However, as rates on long-term corporate and municipal bonds continued to rise, most participants subscribed to the view that real debt lengthening would not be attempted at this time. Over the month of April, yields on Treasury securities with maturities of more than seven years generally increased by 5 to 68 basis points. Those on issues due within seven years jumped by 46 to 123 basis points, carrying them back to the level of late January.

Participants in the Government securities market were initially relieved at the Treasury's decision to keep its exchange offerings within three and one-half years during its May refunding. Prices of longer issues rose and the when-issued securities moved to moderate premiums. However, sizable dealer and bank selling of the longer issues emerged, driving down their prices sharply, before a somewhat steadier tone prevailed at the end of April.

Rates on Treasury bills also advanced on balance during April, but the rise was tempered somewhat during the second half of the month. Primarily as a result of the large dealer inventories, yields increased at the start of the month and bidding at the opening weekly auction was cautious. Sizable foreign purchases provided a temporary boost, but the rise in dealer financing costs and the Sys-

Table I

FACTORS TENDING TO INCREASE OR DECREASE MEMBER BANK RESERVES, APRIL 1971

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

Factors	Changes in daily averages—week ended				Net changes
	April 7	April 14	April 21	April 28	
"Market" factors					
Member bank required reserves	+ 171	— 27	— 434	— 263	— 553
Operating transactions (subtotal)	— 469	+ 167	— 111	+ 180	— 233
Federal Reserve float	+ 236	+ 240	+ 336	— 30	+ 782
Treasury operations*	— 243	+ 249	— 131	— 384	— 509
Gold and foreign account	+ 14	— 14	+ 21	+ 1	+ 22
Currency outside banks	— 257	— 483	— 400	+ 590	— 550
Other Federal Reserve liabilities and capital	— 217	+ 174	+ 63	+ 2	+ 22
Total "market" factors	— 298	+ 140	— 545	— 83	— 786
Direct Federal Reserve credit transactions					
Open market operations (subtotal)	+ 215	— 208	+ 414	— 38	+ 383
Outright holdings:					
Treasury securities	+ 128	+ 212	+ 473	+ 30	+ 843
Bankers' acceptances	+ 3	— 3	+ 1	— 1	—
Repurchase agreements:					
Treasury securities	+ 17	— 298	— 50	— 73	— 404
Bankers' acceptances	+ 20	— 51	+ 1	+ 13	— 17
Federal agency obligations	+ 47	— 68	— 11	— 7	— 39
Member bank borrowings	— 59	— 48	— 65	+ 92	— 80
Other Federal Reserve assets†	+ 44	+ 43	+ 124	— 25	+ 186
Total	+ 199	— 212	+ 473	+ 29	+ 489
Excess reserves	— 99	— 69	— 72	— 54	— 294

	Daily average levels				Monthly averages
Member bank:					
Total reserves, including vault cash	29,670	29,621	29,973	30,196	29,865‡
Required reserves	29,393	29,417	29,851	30,114	29,694‡
Excess reserves	277	208	136	82	176‡
Borrowings	197	150	85	177	152‡
Free, or net borrowed (—), reserves	80	58	51	— 95	24‡
Nonborrowed reserves	29,473	29,471	29,888	30,019	29,713‡
Net carry-over, excess or deficit (—)§	177	175	172	72	149‡

Note: Because of rounding, figures do not necessarily add to totals.

* Includes changes in Treasury currency and cash.

† Includes assets denominated in foreign currencies.

‡ Average for four weeks ended April 28.

§ Not reflected in data above.

tem's tolerance of a higher Federal funds rate over the long Easter weekend led to an average issuing rate on the new three-month bill of 4.039 percent in the April 12 auction—the first time this rate was above 4 percent since February 1. (This rise led to an increase in the System's rate on repurchase agreements to nonbank dealers in Government securities, since the Federal Open Market Committee requires that rate to be no less than the discount rate or the latest average issuing rate on three-month bills, whichever is lower.) Rates on outstanding issues adjusted upward in response to the auction results, and a sizable investor demand emerged at the higher yields so that over the next several days bill rates trended down.

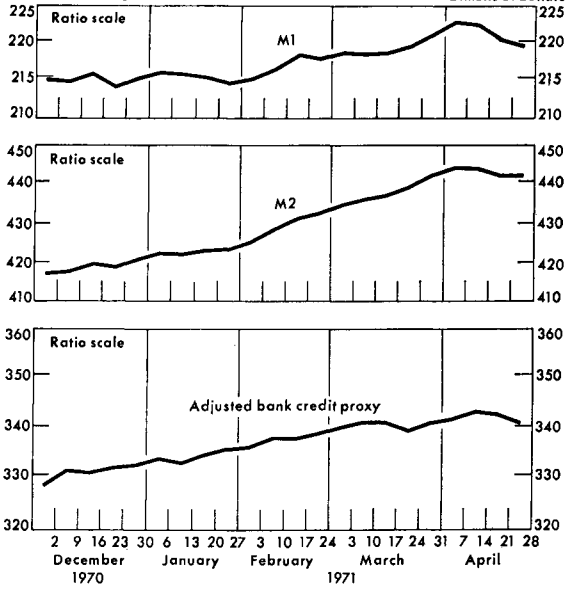
A further source of strength in the bill market after mid-April was the reinvestment demand from some holders of the maturing April tax anticipation bills as well as more than $600 million of Federal Home Loan Bank obligations which were paid off at maturity. In addition, large tax receipts of local governments provided another source of funds. In response to this combination of factors, rates on seasoned bills declined and the average issuing rates on new three- and six-month bills were set at 3.77 percent and 3.96 percent, respectively, in the April 19 auction, 27 and 18 basis points lower than a week earlier (see Table II). Rates continued to decline on balance during the remainder of the week in response to reinvestment purchases and dealer replenishing of shorter term supplies. As the refunding drew nearer, however, apprehension developed concerning the possibility of competition from a new, short-term note, and bill rates trended higher over the final week.

Chart II

MONETARY AND CREDIT AGGREGATES

Seasonally adjusted weekly averages

December 1970 - April 1971



Note: Data for April are preliminary.

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 liabilities, such as Euro-dollar borrowings and commercial paper issued by bank holding companies or other affiliates.

Source: Board of Governors of the Federal Reserve System.

OTHER SECURITIES MARKETS

The dominant trend in the corporate and municipal bond markets during much of April was a continuation of the price erosion that began in late March. Despite the lower prices, however, investors showed only occasional enthusiasm for the new offerings, and dealer inventories of unsold corporate and municipal bonds mounted steadily during the first half of the month. While the supply of new issues was smaller than in March, when a record $4.2 billion of corporate bonds alone was marketed, the April calendar was still substantial by historical standards. Many investors appeared content to remain on the sidelines, awaiting resolution of some of the domestic and international uncertainties affecting the outlook for interest rates over the months ahead. Confronted with a growing supply of forthcoming offerings and a sizable stock of unsold bonds on their shelves, several underwriter syndicates disbanded and permitted the unsold balances to find their own price in free trading. Yields rose sharply in most instances when these price restrictions were removed, but dealers were able to pare their inventories in this fashion.

The pattern of corporate bond yields and the extent of investor selectivity in recent weeks is well illustrated by the fate of two Aaa-rated Bell System telephone issues. A $125 million offering by New Jersey Bell, priced to yield 7.20 percent on March 30, received only a lukewarm response. The unsold balance of these bonds remained in the market for a couple of weeks, during which it attracted little additional interest, and on April 13 was freed from price restriction as the market prepared for another Bell issue due a week later. In unrestricted trading the yield on the New Jersey balance moved to 7.37 percent from its original 7.20 percent level and buyers began to appear. Subsequently, on April 20, underwriters for $200 million of Illinois Bell Telephone Company mortgage bonds priced these to yield 7.60 percent, several basis

points higher than had been expected only a few days earlier. Because the return proved attractive to many investors, some 85 percent of the issue was sold on the day of its initial offering. Over the remainder of April, yields continued to move higher, and a utility issue rated Aa was offered to investors at 7.90 percent at the close of the period. A month earlier a comparable issue was priced to yield 7.10 percent.

Developments in the tax-exempt bond market generally paralleled those in corporate bonds during April, as commercial banks reduced their buying. *The Weekly Bond Buyer's* index of yields on twenty bonds rose from 5.15 percent to 5.69 percent in the April 1 to April 29 period. Municipal bond yields more than retraced their March declines in recent weeks, and the *Bond Buyer's* index closed the month just below its 1971 high of 5.74 percent set on January 7.

The two largest tax-exempt offerings in April were the $258 million serial bonds issued by New York City, the largest such sale in its history, and a $125 million offering by the state of Massachusetts. The Massachusetts bonds were first marketed on the Thursday before the long Easter-Passover holiday weekend. Though these Aa-rated securities were attractively priced, little investor interest was forthcoming on the eve of the holiday. As a result, some $90 million of the bonds remained in dealer inventories for a number of days. Despite the deteriorating market, the sizable New York City offering, by way of contrast, had little difficulty finding buyers after its April 13 sale. While many institutional investors were unable to participate in the New York City offering because the bonds carried only a Baa-1 rating, individuals found the bonds attractive and were the main source of demand.

Following the successful marketing of the New York City bonds, the unsold balance of the Massachusetts issue was resold to a secondary syndicate, which increased the yield to investors by about 20 basis points. This elicited substantial interest and the balance was sold within a brief period. Prices continued to slide in the municipal bond market over the second half of April, as the prospective calendar remained sizable and bank buying was only sporadic. The largest new offering during this period was a $100 million Aa-rated issue of state of California bonds. Despite yields on the bonds some 15 to 20 basis points above the state's previous offering in February, the bonds sold slowly until they were reduced in price.

Table II

AVERAGE ISSUING RATES* AT REGULAR TREASURY BILL AUCTIONS

In percent

Maturities	Weekly auction dates—April 1971			
	April 5	April 12	April 19	April 26
Three-month	3.703	4.039	3.770	3.865
Six-month	3.754	4.140	3.960	4.087
	Monthly auction dates—February-April 1971			
	February 23	March 25	April 27	
Nine-month	3.691	3.507	4.402	
One-year	3.675	3.586	4.422	

* 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.

International Banking Institutions and the Understatement of the Money Supply

By IRVING AUERBACH*

Last November the Board of Governors of the Federal Reserve System announced a sizable upward revision in the money supply series.[1] This revision largely reflected the correction of what might be called a cash-items bias. This bias stems from the New York City banks' practice of settling virtually all international payments in Clearing House funds (that is, with a one-business-day lag), a steep growth in the volume of such payments flowing through certain subsidiary international banking institutions, and the particular way the demand deposit component of the money supply is defined and affected by these funds transfers. The problem surfaced only recently because the role of the subsidiary international banking institutions—which include subsidiaries of United States banks known as Edge Act corporations and United States branches, agencies, and affiliates of foreign banks—was until the past few years relatively insignificant. However, with the recent sharp growth in foreign payments—especially through the extraordinary expansion (at least up to late 1970) in the Euro-dollar market—and a marked rise in the use of the subsidiary institutions as intermediaries in the transfer of such payments, the latent influence of this phenomenon on the money supply data became apparent.

This article has been prepared primarily to relate the reasons for the rapid rise in the role of the subsidiary international banking specialists and to explain why their transactions contributed to the understatement in the money supply. At first, some background is provided by reviewing rather broadly the origins of the Edge Act corporations and the nature of their operations, as well as the development and activities of the other subsidiary or affiliated international institutions. Then, the method used to correct the money supply data for the cash-items bias is explained. In addition, a new mechanism for handling international payments in New York—called CHIPS—is discussed, along with a description of the payment practices in New York City for international funds transfers. The article concludes by showing how CHIPS will be used to shift international payments to an immediate settlement basis and why this change, which hopefully will be initiated later this year, will eliminate the cash-items bias.

HISTORICAL DEVELOPMENT

EDGE ACT CORPORATIONS.[2] Prior to the enactment of the Federal Reserve Act, United States banks participated in international banking or foreign financing almost exclusively through a network of foreign correspondents.[3] Only a few banks had established overseas branches or subsidi-

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[1] The revision specifically affected demand deposits adjusted, a term that will be defined later. All the generally accepted concepts of the money supply include demand deposits adjusted. Thus, this revision applies not only to M_1, but also to M_2 and M_3 (defined on pages 100-101 of this *Review*).

[2] In this article, the term "Edge Act corporation" or "corporation" will be used to refer to both the Edge Act and Agreement corporations. Today, the distinction between the two has virtually disappeared and only when there is a need to refer to the two separately will the term "Agreement corporation" be used.

For more details on Edge Act corporations, see George H. Bossy, "Edge Act and Agreement Corporations in International Banking and Finance", this *Review* (May 1964), pages 84-92, and Allen F. Goodfellow, "International Corporations of American Banks", unpublished Stonier Graduate School of Banking thesis (June 1968).

[3] Smaller or inland banks had (and many still have) access to foreign markets through connections maintained with large, internationally oriented banks, particularly those in New York City.

ary foreign banking or financing corporations through which they could operate abroad independently of their domestic activities; these either were chartered under state laws or were private, unincorporated banks. National banks at the time were not authorized to establish branches either at home or abroad.

In the early years of this century, the growth of foreign trade generated a need for more active participation by United States banks in international banking and investment. The Federal Reserve Act, therefore, included a provision that allowed national banks having capital and surplus of not less than $1 million to establish foreign branches with the approval of the Federal Reserve Board.

Only a limited number of branches were opened under the Federal Reserve Act's original provisions. Apparently, the amount of funds needed to open a foreign office deterred individual banks from establishing foreign branches.[4] As a result, Section 25 of the Federal Reserve Act was amended in 1916 to permit banks to participate jointly in overseas ventures. The change authorized national banks with capital and surplus of $1 million or more to invest up to 10 percent of their capital and surplus in the stock of Federally or state-chartered corporations organized principally to engage in international banking. Thus, national banks either singly or jointly could invest in a subsidiary to operate in foreign banking. No provisions were made for Federal chartering of those corporations and, as a result, only corporations chartered under state laws could operate under Section 25. National banks could invest only in corporations that entered into an agreement with the Federal Reserve Board to restrict their operations to conform with any limitations prescribed by the Board—a restriction that has continued to this day. The corporations that have entered into such agreements are known as "Agreement corporations".

As a result of efforts to provide for national as well as state chartering, the Congress passed the Edge Act in 1919. It added to the Federal Reserve Act Section 25(a), which authorizes the Federal Reserve Board to charter corporations "for the purpose of engaging in international or foreign financial operations . . . either directly or through the agency, ownership, or control of local institutions in foreign countries".

The rapid expansion in foreign trade and United States investment abroad during World War I and the immediate postwar period produced a sharp growth in the number of foreign subsidiaries. Between 1919 and 1929, eighteen corporations were organized, of which fifteen were Agreement corporations and three were Edge Act corporations. On the whole, their operations were not successful. By the early thirties, only two corporations remained in operation.

Interest in Edge Act corporations remained minimal until the midfifties. Only five new corporations were organized over the intervening twenty-five years. This situation reflected the adverse effect on foreign trade and credit flows of first the Great Depression, later World War II, and subsequently the continuation of exchange controls abroad. The gradual restoration of more normal trade flows, the relaxation of exchange restrictions, the great surge of United States investment abroad, and the emergence of the dollar as the principal reserve currency and the major currency employed in the financing of world trade generated a strong revival of interest by United States banks in international banking. As part of this development, thirty-five Edge Act corporations were organized in the decade following 1955. The increase has been even greater over the past few years, since more and more banks began to use such corporations as a vehicle for tapping the Euro-dollar market. On December 31, 1970, there were approximately forty corporations in active operation in New York City and about thirty in other United States cities.

The corporations' operations are governed by the Federal Reserve Board's Regulation K. The early versions of Regulation K were largely restatements of Section 25(a) of the Federal Reserve Act. The provisions of each of these various versions of Regulation K were rather vague, and questions were raised from time to time concerning the limitations of the corporations' operations in the United States. Also, there was a lack of any clear guidance concerning their authority to acquire stock in foreign nonbank corporations and to engage in investment banking. As a result, the Board revised Regulation K in 1957 to establish a sharp distinction between commercial banks and investment banking corporations. Corporations that elected to operate as commercial banks were permitted to receive deposits and to create acceptances. They were prohibited from issuing bonds and debentures and could acquire stock only in companies engaged in banking. The investment banking corporations could not receive deposits or create acceptances, and had to operate solely on funds provided by the parent bank and on retained earnings. In addition, they could not invest in companies engaged in banking.

The 1957 revision of Regulation K added detailed provisions pertaining to activities allowable in the United

[4] United States Congress, Senate, Committee on Banking and Currency, *Amendments to the Federal Reserve Act: Hearings on S. 5078 and H.R. 13391,* 64th Cong., 1st sess., 1916, pages 24-25.

States. It permitted the banking corporations to accept deposits from foreign nationals, firms, and institutions that are "incidental to or are for the purpose of carrying out transactions abroad". In addition, deposits related to foreign trade and credit could be accepted from domestic importers and exporters.[5]

Regulation K was amended again in 1963. The most significant change eliminated the distinction between banking and financing corporations. Thereafter, any Edge Act corporation could engage in "both banking and financing operations that are of an international character".

Despite the 1963 change in Regulation K, less than twenty-five of the seventy corporations reported deposit liabilities as of the end of 1970. One of the reasons why many corporations do not accept deposits is that by regulation the holding of such liabilities limits a corporation's loans to, or investments in, any one borrower to 10 percent of the corporation's capital and surplus. If it remains exclusively a financing corporation, the comparable limitation is 50 percent. Another reason why so few corporations accept deposits is to avoid competition with their parent banks. This latter consideration is a factor particularly when a parent bank and its subsidiary corporation are geographically close to each other and the deposit and other services that would be provided by a banking corporation are available through the parent bank's foreign department.

SUBSIDIARIES OF FOREIGN BANKS.[6] Foreign banks have had offices or representatives in New York and, to a much lesser extent, in other major United States cities before the start of the 1900's. They established such offices for many of the same reasons that United States banks opened Edge Act subsidiaries, and their growth and stagnation followed the Edge Act's cycle fairly closely. Their primary motive for opening offices was, and still is, to assist their depositors or clients in making foreign payments or investments. With their own agent in New York and other cities, they can service their customers' as well as their own needs in the United States more efficiently and expeditiously than the large money market banks.

Until 1961, in New York, foreign banks generally could establish only agencies.[7] Agencies are empowered to transact all the usual activities of a commercial bank, such as making loans and investments, collecting payments, and transferring funds, but may not accept deposits. This restriction arose out of the traditional limitations that exist in most states against allowing banks chartered in other jurisdictions to open within their respective boundaries a banking office that accepts deposits from local residents or firms. Nevertheless, the agencies are permitted to maintain for the account of others credit balances arising out of the exercise of their powers.[8]

Closely akin to the agencies are the foreign investment companies, which all along have been few in number. They have slightly broader powers than the agencies. Also, they tend to finance higher risk borrowers and may invest in equities. They may establish branches outside New York State which receive deposits. Within New York their offices can maintain credit balances only except that, with the approval of the New York State Banking Board, they may hold deposits of the United States Government. Furthermore, they may receive funds from anywhere for the purpose of transmittal between the United States and a foreign country.

After World War II, the rapid expansion of foreign branches of United States banks with the privilege of accepting deposits from local residents in the host countries created increasing resentment from the banking and other interests in some foreign countries. In time, such ill feelings led to threats from these countries to disenfranchise the United States banks' branches unless their own banks were given full freedom to operate in the United States. As a result, New York State—which has the largest concentration of banks operating abroad—removed its restrictions with a reciprocity proviso. That is, banks chartered in

[5] A further change in the regulation was the inclusion of the Agreement corporations within its scope. Prior to 1957, the provisions of Regulation K were made applicable to the Agreement corporations through the individual agreements executed by the Board with such corporations.

[6] In this discussion, the references will be typically limited to the developments in New York. For a comprehensive discussion of foreign banking operations in the United States, see United States Congress, Joint Economic Committee, "Economic Policies and Practices Paper No. 9, Foreign Banking in the United States", by Jack Zwick (Washington, D.C., 1966).

[7] These institutions are known as "foreign agencies". It should be noted that the term does not refer to the branches of United States banks that operate abroad and that the activities of the latter are irrelevant to the problem discussed in this article.

Before 1961, five wholly owned subsidiaries of Canadian banks were chartered in New York primarily to permit them to engage in trust activities, a power not available to an agency. While technically these banks could accept deposits locally, there was and still is an agreement with the New York State Banking Department that they restrict their operations in New York largely to trust work.

[8] Credit balances are virtually the same as demand deposits except for certain legal and technical differences.

foreign countries could open offices in New York and have full banking privileges provided similar treatment was accorded a New York-chartered bank. Thereafter, some foreign agencies converted to full-banking offices in order to provide wider services and to make their operations more profitable. Largely as a result of these conversions, the number of foreign agencies in New York City decreased from thirty-six at the end of 1960 to about twenty-five in December 1970.

The full-service banking offices with the privilege of accepting deposits can be in the form of a New York branch of a foreign bank that is chartered and operating abroad or a wholly owned New York subsidiary of a foreign bank. Initially, most of the conversions of foreign agencies or the establishment of new offices were in the form of branches of foreign banks. However, the trend now appears to be for foreign banks to establish wholly owned subsidaries with unrestricted banking privileges. One reason for this development is that a wholly owned subsidiary is organized under a full charter granted by the New York State Banking Department in perpetuity. By contrast, a foreign branch's authority to engage in banking stems from a license issued by the New York State Banking Department which must be renewed each year, although after ten consecutive years of operations the Superintendent of Banking may allow a license to remain in force until it is surrendered or revoked. Another factor that makes a wholly owned subsidiary more attractive than a branch is that, organized as the former, its deposits can be insured by the Federal Deposit Insurance Corporation, whereas a branch's deposits are ineligible for such insurance. Also, if a group of foreign banks wishes to invest jointly in a full-service banking office, they can achieve this only through organizing a new banking firm in which they are the sole or major stockholders. In any event, the operations of either a branch or a wholly owned subsidiary do not differ appreciably from each other. In turn, their activities duplicate those of domestic commercial banks except that in terms of their relative size they have a higher concentration of foreign transactions. At the close of 1970, nineteen foreign banks were operating thirty-eight branches in New York City. At the same time, there were fourteen wholly owned subsidiaries of foreign banks chartered to do business in New York, but five of these must restrict their local operations to trust activities.

PRESENT OPERATIONS

The basic operations of the Edge Act corporations have changed radically from the pre-1930 period. At that time, the corporations were concerned almost exclusively with operating overseas branches.[9] Today, many and particularly those with a parent bank outside New York City typically perform all of the functions usually associated with a commercial bank's international department.[10] Within the restrictions that their operations must be limited to international trade and foreign customers, they accept deposits, make loans, and provide many of the other services offered by commercial banks. Such services among others include remitting funds, serving as a collection or paying agent for various purposes, and engaging in foreign exchange transactions. However, one activity that should be mentioned in particular is to serve as an agent in the clearing and collection of Euro-dollars. In fact, some of the corporations organized in the late 1960's were created largely, if not exclusively, to facilitate the tapping of the Euro-dollar market by the parent institutions. Furthermore, it is apparent that the transfers of Euro-dollars for their parent banks and other clients accounted for much of the large growth in the dollar volume of the Edge Act corporations' flows of funds in recent years.[11]

The activities of the various types of subsidiaries of foreign banks operating in the United States that function as international bankers parallel closely those of the Edge Act corporations.[12] The only important difference is that the licensed branches and state-chartered subsidiaries (but not the agencies, investment banks, or those offices limited to trust work) are free to accept deposits from local sources. They, too, enable the parent banks to transact at

[9] In the midtwenties the corporations actually operated more foreign branches than did United States commercial banks. By comparison, the corporations now have only a handful of overseas branches, while most of the foreign banking offices of United States banks are direct subsidiaries of their parent banks.

[10] Prior to 1966, some corporations were organized to function as holding companies to acquire stock in foreign banks, since before that date the parent banks were not permitted to have a direct investment in an overseas bank.

They also engage (particularly those that were formerly designated as financing corporations) in a variety of international financing activities, e.g., investing in the stock of foreign nonbank concerns, underwriting foreign capital issues, participating in term loans, and acquiring debentures.

[11] The corporations generally do not acquire Euro-dollars for their own account; their role primarily is to serve as a clearing agent in the transfers of the funds.

[12] Many of the branches, affiliates, and subsidiaries are principally engaged in domestic banking. They have an ethnic appeal and draw much of their funds from former or current citizens of their home countries, who are in the United States. In addition, their loans are typically made to local borrowers. Only about fifteen of the full-service banking offices can be considered active in international banking. Also, while all agencies perforce engage in international banking, there are approximately ten agencies that have a volume of business of any meaningful size.

close range their international banking requirements in the United States and those of their customers. In addition, the opening of new offices in recent years and the expansion of activity of existing foreign branches and subsidiaries also reflected to some extent the growth of the Euro-dollar market.

While specific details are not available, it is evident that only part of the recent rise in activity by the Edge Act corporations and the other major specialized international banking institutions was associated with the servicing of the needs of the parent institutions and the latter's own customers. On the contrary, the greater part of the increase seems to reflect their ability to attract their own clients to a much greater extent than in the past. This means that they have drawn a sizable amount of business away from the giant United States banks that traditionally have handled the bulk of the international transactions in this country. A number of factors account for this development. The growing volume of foreign payments plus the scarcity of trained staff during periods of labor shortages in recent years led to a sharp increase in back-office problems at large United States banks, such as a substantial rise in the number of errors committed in transferring funds.[13] The subsidiary institutions were attractive to many United States and foreign firms making international payments since they could claim that, with their more limited operations, they were able to give the client more personal attention. It also has been reported that part of the competitive success of the subsidiary institutions can be attributed to effective price competition. In the recent period of tight money and labor shortages, the commercial banks tightened the terms under which they cleared funds for their foreign depositors. The subsidiary international institutions, however, are believed to have maintained more liberal service charges. But, whatever the reasons, the extent of the subsidiaries' success in building up the volume of their activity will become apparent in a later section which discusses the size of the understatement in the money supply that stemmed from the cash-items bias.

As a result of these various developments, many of the subsidiary international institutions have become giant money-moving machines. Typically, the accounts they service in the international area are highly interest sensitive and do not wish to leave balances unnecessarily in nonearning demand deposits. Thus, large sums are deposited each day with these institutions only to be transferred out immediately. For the discussion that follows, it is important to recognize two things concerning these transfers. One is that the subsidiary institutions, not being members of the New York Clearing House, generally redeposit with a local bank that is a member all checks received from depositors and other clients.[14] The other is that the international customers of the subsidiary institutions generally effect transfers of funds by having the latter issue their own checks. Such checks, which are known as officers' checks, are drawn against the balances which the subsidiary institutions maintain with their local clearing banks.

PAYMENT PRACTICES FOR INTERNATIONAL TRANSFERS IN NEW YORK

Traditionally, the transfer of funds in New York City involving two local banks, either as principals or as agents for their depositors, has been in what is called Clearing House funds. In such transfers, the collection of checks is not effected until the first business day after a check is presented for payment, and thus the proceeds of a deposit are not available to a depositor's bank until the next business day. As banks and their customers have become more sophisticated and especially as the cost of money has risen over the past two decades, more and more transfers of large sums are being made in immediately available funds.[15] International payments, however, have continued to be made largely in Clearing House funds.

In view of this convention and the huge volume of international payments flowing daily through the accounts of the New York City banks (representing those for their own clients as well as those that arise out of serving as correspondents or clearing agents for the subsidiary international institutions), a large "float" of uncollected checks is generated each day. This float has normally been reflected in the balance sheets as an increase on the asset

[13] Unlike domestic transactions where the depositor typically draws his own check to effect a payment, in an international transaction an overseas or local customer sends a coded cable, telegram, or telephone message to his bank instructing it to make payment or receive funds. The bank then must prepare a check, draft, or payment advice, and it must fill in the names of the payee and payor and the dollar amount of the transfer. Thus, there is a greater opportunity for mistakes to arise in such transactions.

[14] Some of the institutions maintaining balances with the Federal Reserve Bank of New York clear checks through the latter's facilities. Nevertheless, the bulk of their clearings is through the local commercial banks.

[15] Such funds are also referred to as Federal funds. In this context, however, the term does not refer to the overnight borrowing and lending of reserve balances at a given interest rate.

side in "cash items in the process of collection". On the liability side, the offsetting credits may appear in one of the different deposit accounts or in the Euro-dollar account, depending of course on who deposits the check or the purpose of the transfer.

Recently, the major New York City banks established a new system for effecting payments for foreign accounts, which is called the Clearing House Interbank Payment System (CHIPS). It was developed to enable the banks to minimize the difficulties they were encountering in processing their international payments. (Part of the problem stemmed from the need for the paying banks to deliver by messenger the checks payable to a local bank.) CHIPS is an electronic, message-switching network which links the foreign departments of the eight largest New York banks to a central computer. A bank that is requested to make an international payment to a depositor at one of the other city banks now arranges for the transfer by entering a message on its terminal connection to the computer. The message is routed automatically to the payee bank's terminal, while the computer records internally the details of the transfer. At the end of the day all the transfers are cumulated. The resulting amounts for "due to" and "due from" each bank in the network are reported to the banks involved. Nevertheless, settlement for a given day's transaction is still not effected until the next business day. Therefore, the practice of settling international payments in Clearing House funds has been retained at least for the time being.

However, with the introduction of CHIPS there was a change made in the method used by city banks in recording the transfers for foreign accounts. Formerly, to make an international payment, a bank would issue an officers' check, which is included in its demand deposit liabilities on its financial statement, and it would charge the deposit account of the payor or some other liability account. The payee bank, as noted earlier, would increase cash items and credit a deposit or other liability account. Now, however, through CHIPS, since the paying bank does not issue an officers' check but has direct liabilities to other banks, it increases instead the balance-sheet item "due to banks". Thus, the payee bank under CHIPS receives no cash items, and the transfers are reflected on its books by increases in "due from banks".[16]

[16] The city banks agreed that at the end of each day the reciprocal "due to's" and "due from's" bank by bank would be offset against each other and only the sum of the net "due to" and net "due from" by individual banks would be reflected in their balance sheets.

At this date, the subsidiary international institutions are not participants in CHIPS. Thus, payments going from a major city bank to these intermediaries still require that officers' checks be issued whenever an intermediary does not have a deposit account with the paying bank. Consequently, when the intermediaries redeposit the checks with their city correspondents, the items continue to appear in bank balance sheets as increases in cash items. Furthermore, when the subsidiary international institutions make payments for their clients, as noted earlier, they draw their own checks, and these payments also continue to show up on the major city banks' books as increases in cash items. For these reasons, while CHIPS has resulted in a marked reduction in the amount of cash items reported each day by New York City banks, it has not led (at least as yet) to a reduction in the cash items that contribute to the cash-items bias discussed in the next section.

EFFECT OF TRANSFERS ON THE MONEY SUPPLY STATISTICS

Prior to the revision announced in November 1970, the United States money supply was understated whenever one of the subsidiary international institutions served as an intermediary in the transfer of funds for a parent bank or any client, an officers' check was issued, and a payment was made in Clearing House funds. Again, since Eurodollars, foreign exchange, and most other international transfers in New York are in Clearing House funds, a sizable portion of all payments flowing through subsidiaries resulted in an understatement of the money supply. Before this phenomenon can be explained, it will be worthwhile to review the definition of demand deposits adjusted which, as noted earlier, are a component of each generally accepted concept of the money supply.

Demand deposits adjusted consist primarily of gross demand deposits at all commercial banks less both United States Government demand deposits and balances due to domestic commercial banks. (They also include the deposits of various foreign accounts at the Federal Reserve Banks.) Moreover, cash items in the process of collection and Federal Reserve float are deducted from gross demand deposits in order to correct for the duplicate counting of deposits that arises with our collection system. That is, because there is generally a time lag between the date a check is deposited with one bank for collection and the date that it is presented to the issuer's bank for payment, there is always some volume of deposits that appears simultaneously on two banks' balance sheets and thus is double counted in gross demand deposits. This double counting is reflected to a large extent in cash items and

Federal Reserve float. Therefore, the subtraction of these two items from gross demand deposits avoids an overstatement of private demand deposits—the funds in checking accounts available to the public for spending. It should also be noted that the commercial banks' deposit liabilities to the international subsidiary institutions are recorded as "balances due to domestic commercial banks".

It will be recalled that the subsidiary institutions typically use a New York correspondent bank to clear the checks which they receive for collection, and that any receipt of checks by the correspondents from these institutions results in an increase in the correspondents' cash items (a deduction from gross deposits in arriving at demand deposits adjusted for the banking system). However, no similar expansion occurs in private nonbank deposits, since the offsetting increase appears in balances due to domestic commercial banks which, as just mentioned, are not part of demand deposits adjusted. Thus, to the extent that the subsidiary international institutions deposit Clearing House checks with their correspondents for collection, there is a reduction in the computed money supply.[17] A detailed illustration of this effect is presented in the appendix.

The daily amount of officers' checks issued by the subsidiary international institutions closely approximates the size of each day's cash-items bias. The understatement, therefore, can be corrected by adding these totals to demand deposits adjusted. In effect, this is what was done by the Federal Reserve Board in the November 1970 money supply revision.

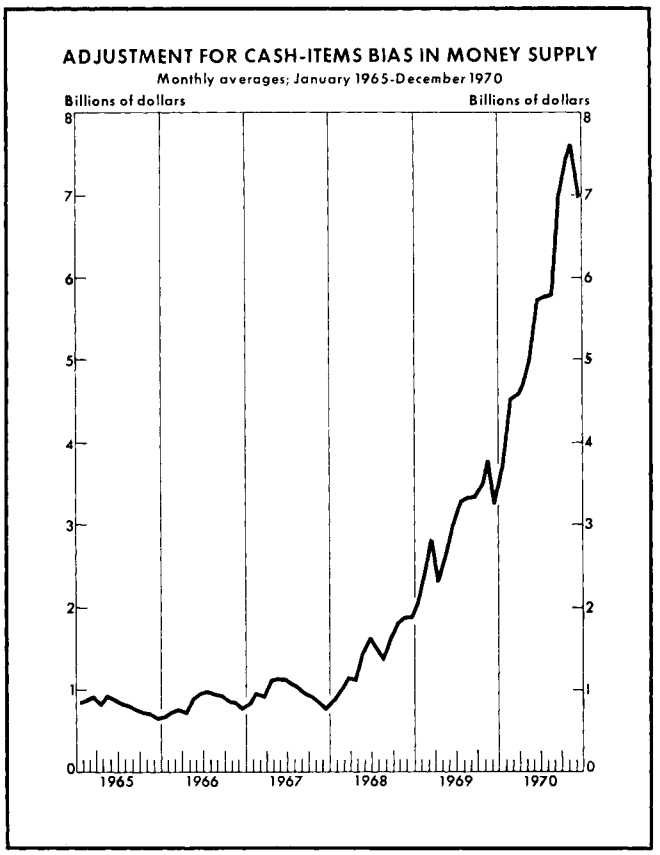
The Edge Act corporations have always been required to report to the Federal Reserve System their daily deposit levels. Thus, back data were available to correct the money supply series for past periods and, of course, data are available currently to provide a corrected money supply total. However, the corporations' demand deposits include not only the officers' checks outstanding, which contribute to the cash-items bias, but also a moderate amount of funds regularly kept with the corporations and not part of the daily turnover. The amount of these balances is perhaps no more than $400 million at the present time. The adjustment, therefore, not only corrects for the bias stemming from the daily transfers flowing through Edge Act corporations but also adds moderately to the balances included in the money supply. But this latter change does not conflict with the accepted definition of the money supply. Such funds have all the attributes of the demand deposits held by foreign accounts with commercial banks, and the latter have been included in the series ever since the United States has had a rigorous definition of the money supply.

The correction for the bias contributed by the transfer activities of the subsidiary international institutions, other than the Edge Act corporations, is not so straightforward. All along, their "true" deposit liabilities—except the credit balances of the foreign agencies and investment companies—have been included in the money supply series. However, adequate and complete data needed to correct for their contribution to the cash-items bias are not available from any regular report such as the deposit reports filed by the Edge Act corporations. Thus, to obtain a satisfactory adjustment total, these institutions have been asked since October 1970 to report daily the amount of their deposits with commercial banks of checks that are available in Clearing House funds. These totals should match rather closely their officers' checks outstanding and thus are believed to provide an adequate correction for their contribution to the cash-items bias. The adjustment for past periods was derived indirectly from other data. As part of the adjustment, the foreign agencies' credit balances were also added to the money supply data. In recent months, these deposits have averaged above $600 million.

The correction of the money supply data for the cash-items bias in terms of monthly averages from January 1965 through December 1970 is shown in the chart. Unfortunately, the totals include the basic demand deposits held by the Edge Act corporations, which cannot be separated readily. At most, however, this addition, as just noted, is no more than $400 million for the recent periods and even less in earlier years.[18] As the chart indicates, prior to 1968 the amount of the total correction for cash-items bias was relatively inconsequential. However, by late 1970 it had grown to over $7.0 billion.

[17] Another way of explaining this bias is to recognize that the checks drawn by the intermediary institutions on their balances with the city banks to make payments for their customers appear as cash items on the books of the payee banks. In effect, such cash items are drawn against nonmoney supply accounts. Thus, by including them in the deductions from gross deposits to arrive at demand deposits adjusted, there is an overcorrection for the double counting of deposits included in the money supply.

[18] The money supply data were corrected back to January 1959. However, adjustments for the months prior to January 1965 largely represent the basic deposits held by Edge Act corporations, which were added to the money supply statistics. For a description of the method used to estimate the adjustment for past periods, see "Revisions of the Money Stock", *Federal Reserve Bulletin* (December 1970), pages 892-93.



FUTURE DEVELOPMENTS

The settlement of international transactions in Clearing House funds has contributed to a number of problems in addition to the cash-items bias. Thus, for some time, a movement has been under way to shift these payments to a Federal funds settlement basis. CHIPS makes this goal feasible. However, before it can be attained, it will be necessary to have most of the major participants in international payments (at least in New York) linked to the CHIPS network. It will be essential that messages to transmit payment orders or to receive funds be delivered expeditiously. Any gap would disrupt the smooth flow of all payments, which is an absolute requisite for Federal funds settlement. In addition, since some large banks outside New York also have rather sizable international payments, they too would have to participate in Federal funds settlement for their foreign transfers. However, they cannot be tied into CHIPS, and they will have to arrange to use the Federal Reserve's or some other wire transfer facility.

At present, the capacity of the CHIPS computer is not large enough to accommodate all the New York institutions. To the extent possible, the larger subsidiary institutions will be tied to the network in the near future, and to implement Federal funds settlement other arrangements will be made temporarily for those New York banking firms that will not have a direct line to the computer. (It is expected that in time the Clearing House will acquire a larger computer which could accommodate all of the New York international banking institutions.) In addition, the Federal Reserve has put into operation a new message-switching system. This system should be able to handle the increased message traffic to and from outside New York that would be generated by Federal funds settlement for foreign transactions. And, while there are still some other problems that remain to be resolved, immediate payment for international transactions could be a reality later in the year.

With Federal funds settlement adopted, the cash-items bias would be eliminated and there no longer would be any need to correct the money supply data for any understatement in demand deposits adjusted arising out of foreign payments. Settlement in Federal funds would, of course, eliminate the large float and associated set of entries that now appear on the books of the subsidiary international institutions and commercial banks. With the international transfers coming in and going out in "good funds", i.e., Federal funds, there would no longer be cash items and officers' checks generated by the daily turnover of foreign payments through the subsidiary international institutions.

APPENDIX

To explain the cash-items bias more specifically, a typical set of bookkeeping entries associated with a transfer of funds through a subsidiary international institution is presented in the table. In the illustration, it is assumed that a foreign bank gains dollars and lends the funds in the Euro-dollar market to a United States bank. Typically, a United States bank acquires Euro-dollars by having one of its overseas branches borrow the funds and transfer the proceeds to its account. Thus, it is the overseas branch that has the liability to the foreign bank (the lender), while the parent bank has a liability to its overseas branch. Such liabilities are part of "other liabilities" on bank statements and are not included in the United States money supply.

It should be emphasized that, although the table refers to a specific type of transfer, essentially it is reasonably representative of any other type of international transfer

ILLUSTRATION OF "T-ACCOUNT" ENTRIES FOR A TRANSFER OF EURO-DOLLARS CLEARED THROUGH A SUBSIDIARY INTERNATIONAL INSTITUTION AND ITS EFFECT ON THE MONEY SUPPLY DATA BEFORE ADJUSTMENT FOR CASH-ITEMS BIAS

Day	Description of transaction	New York depositor's bank		Subsidiary international institution		Subsidiary's New York clearing bank		Borrower of Euro-dollars	
		Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
1	Foreign bank acquires dollars and deposits funds with its SII		OC + PDD −	CI +	PDD +				
	SII deposits funds with its CB			CI − DFB +		CI +	DTB +		
	Foreign bank lends Euro-dollars to overseas branch of United States bank				OC + PDD −			CI +	DTOB +
2	Initial transfer clears	RES −	OC −			CI − RES +			
	Euro-dollar transfer of Day 1 by SII clears			DFB −	OC −	RES −	DTB −	CI − RES +	
	Euro-dollar borrowing of Day 1 is repaid by overseas branch			CI +	PDD +				DTOB − OC +
	SII deposits repayment with CB			CI − DFB +		CI +	DTB +		
	Foreign bank lends Euro-dollars again				OC + PDD −			CI +	DTOB +
3	Repayment of Day-1 Euro-dollar borrowing clears					CI − RES +		RES −	OC -
	Euro-dollar transfer of Day 2 by SII clears			DFB −	OC −	RES −	DTB −	CI − RES +	
	Euro-dollar borrowing of Day 2 is repaid by overseas branch			CI +	PDD +				DTOB − OC +
	SII deposits repayment with CB			CI − DFB +		CI +	DTB +		
	Foreign bank lends Euro-dollars again				OC + PDD −			CI +	DTOB +
Net change in accounts		RES −	PDD −	DFB +	OC +	CI +	DTB +	CI + RES +	DTOB + OC +
Effect on the money supply data BEFORE adjustment for cash-items bias*		0	--	Not applicable		—	0	— 0	0 +

* The signs indicate the effect on the money supply of the "net change in accounts". In arriving at the net understatement as opposed to contraction of the money supply, the reduction indicated by the minus entry for the "New York depositor's bank" should not be included. This reduction represents the usual contraction that arises when funds are shifted from an account included in the money supply to a Euro-dollar borrowing by a United States bank. Euro-dollar borrowings are not part of the money supply.

SII — Subsidiary international institution.
OC — Officers' checks (included in demand deposits).
PDD — Private demand deposits.
CI — Cash items in the process of collection.
CB — Clearing bank.
DFB — Due from domestic commercial banks.
DTB — Due to domestic commercial banks.
DTOB — Due to own foreign branches (Euro-dollar borrowing).
RES — Reserves.

through one of the subsidiary institutions. For the purpose of depicting the cash-items bias, the key elements are all the entries for "Subsidiary's New York clearing bank" or those on the asset side of the bank that ultimately receives the funds; these elements would not change in illustrations of any of the many other possible types of flows of international funds through the subsidiary institutions. The only changes would be mainly in the types of liability accounts and possibly the institutions represented in the illustrations for the other columns.

It should also be noted that the table assumes a daily turnover of Euro-dollars and shows the transactions through three days of daily roll-overs to demonstrate the effects of a full cycle of transactions. Thereafter, if the turnover continues, the entries are exact duplicates of those that appear on the third day. In any event, no matter which day is examined, as long as funds are passing through a subsidiary international institution, there is an understatement of the money supply until the check associated with each transaction clears. That is, the effect on the money supply statistics starts with Day 1, and if no new lending (or transfer) occurs on Day 2, the money supply data would be restored to their "normal" level the second day. Since the table assumes relendings on Days 2 and 3, the understatement continues through the third day. Of course, in actuality, an individual Euro-dollar transaction does not have to be recycled each day; in fact, only a moderate amount of each day's transactions is on an overnight basis. Therefore, the table, in effect, depicts in a microcosm the influence of Euro-dollar transfers over time and not necessarily only over three successive days. More importantly, the transfers on the third day are representative of the myriad of payments that flow in each day through the subsidiary international institutions.

The net changes in the accounts are summarized in the lower portion of the table, along with their effect on the money supply series. By adding up the pluses and minuses on the last line of the table, it will be apparent that transfers of funds through the intermediaries results in an understatement of the money supply. It should be noticed, however, that the net changes in the accounts at the subsidiary international institutions are not included in determining the effect on the money supply totals. Prior to the November 1970 adjustment, the deposit balances held by those institutions were not included or reflected in the United States money supply totals. As explained above, by including their deposit liabilities and certain items for the other subsidiary institutions, the cash-items bias is offset and the understatement eliminated.

The sum of the pluses and minuses in the lower part of the table suggests that the understatement in the money supply is twice the size of the transfer of funds through the subsidiary international institutions. However, in the example used, it was assumed that funds moved from a money supply account (PDD) to Euro-dollars (DTOB), an item not included in the money supply. As long as deposit funds are placed in the Euro-dollar market and turned over to a United States bank, there is a reduction in demand deposits adjusted. Thus, the net minus associated with the decline in deposits at the "New York depositor's bank" is not included as an understatement of the money supply. In fact, this particular type of transfer was used purposely to demonstrate that a distinction can be made between those changes that represent a decline in the money supply due to a shift of funds from a private demand deposit to a nonmoney supply account and those that represent an understatement because of the transfer of funds through an international subsidiary. If the transfer had been made directly to the Euro-dollar borrower—that is, if the depositor in the first bank were the lender of the Euro-dollars and he did not use an intermediary—no cash-items bias or understatement would arise but the acceptable or "recognized" decline in the money supply would take place.

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