FEDERAL RESERVE BANK OF NEW YORK

MONTHLY REVIEW

AUGUST 1976

Contents

Volume 58 **No. 8**

The Business Situation

As had been widely expected, the figures on gross national product showed a marked slowing in the growth of real output during the second quarter after the first quarter's very rapid rate of advance. The reduced overall rate of gain was related largely to a leveling-off of inventory spending and to the slower rise in consumer spending that had already been suggested by weaker retail sales in April and May. Most recently, the economic advance has continued, but at a rate closer to the moderate second-quarter pace than to the more exuberant first quarter. Both personal income and industrial production showed the smallest rises of the year in June, and the rise in the leading indicators was also of quite modest proportions. Consumer spending apparently has shown some signs of improvement after the April-May weakness, but housing is still having trouble launching the second stage of its post-recession revival. The extent to which stronger capital spending will contribute to expansion over the months ahead remains uncertain, but new orders for capital goods did post another good rise in June. Employment resumed its growth in July, but a very large jump in the civilian labor force pushed the unemployment rate up for the second successive month.

Continuing and somewhat worrisome advances in the prices of industrial raw materials aside, the price-wage picture has remained relatively favorable. To be sure, prices generally rose at a somewhat more rapid rate in the second quarter than in the first three months of the year. However, this acceleration reflected a widely expected turnaround from the outright declines in food and energy prices that had occurred in the first quarter. Wage increases remained large but continued to show some signs of moderating, and relatively large productivity gains associated with the economic recovery have helped significantly to reduce labor cost pressures.

GNP AND RELATED DEVELOPMENTS

According to preliminary Department of Commerce estimates, the market value of the nation's output of goods and services (GNP) rose at a 9.3 percent rate in the second quarter. After adjustment for changes in prices, the rate of gain in GNP was a moderate 4.4 percent. While this increase in real terms was significantly slower than the rapid 9.2 percent expansion of the previous quarter, it was the fifth consecutive quarterly advance and pushed the level of output well above its pre-recession peak. Much of the gain during the first quarter was attributable to a sharp increase in inventory investment that resulted from a swing from inventory liquidation at the close of 1975 to accumulation in the first quarter. Since inventory accumulation stabilized in the second quarter, inventory investment actually restrained growth in real GNP over this period (see Chart I). In keeping with these developments, the Federal Reserve Board's index of industrial production rose more slowly in the second quarter than in the first. Indeed, the June gain was the smallest in nine months, but the uneven pace of the current recovery is not at all unusual for a sustained business expansion. For the most part, the lack of uniformity reflects the often erratic changes in inventory investment. From a longer term perspective, the current expansion at its present stage is close to or slightly ahead of earlier recoveries (see Chart II).

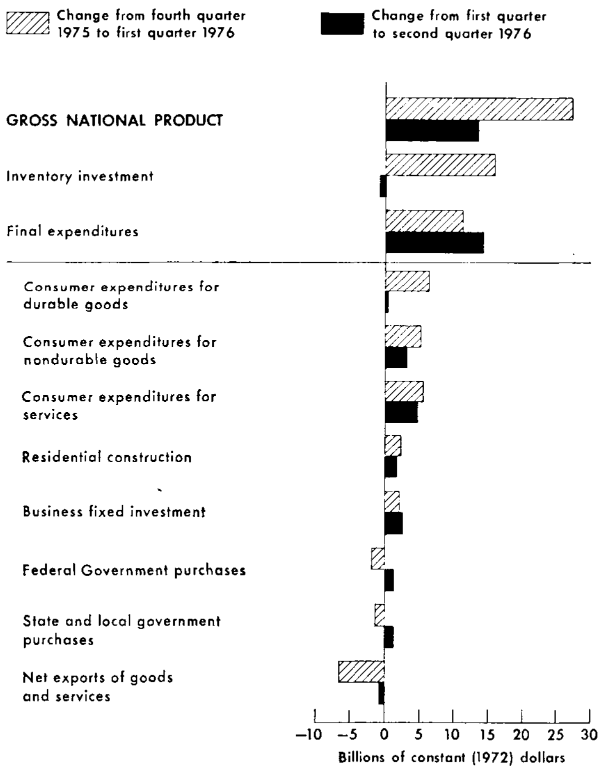
While inventory investment slowed the second-quarter growth of GNP, final sales—GNP less the inventory component—rose slightly more than in the first quarter. Spending by consumers continued to expand over the April-June period, but the rate of increase slowed from the exceptionally rapid pace of the preceding three months. Personal consumption expenditures in real terms rose at a 4.1 percent annual rate in the second quarter, down from the 8.9 percent growth posted in the first quarter. The slowdown in consumer purchases of durable goods was particularly pronounced. Sales of new domestic passenger cars averaged a healthy 8.9 million units at an annual rate during the April-June period, but the sales increase was not so large as the gain registered in the first quarter. At least part of this slowing may be attributed to short supplies of some popular models. Purchases of new cars have recently accounted for about 23 percent of consumer durable goods outlays. Spending on other durables rose only slightly in real terms during the second quarter.

To some extent, the slowdown may simply reflect another pause in the growth of consumer spending, such as occurred after the sharp increase in the second quarter of 1975. Also, consumer spending typically rises less rapidly after the first year of an expansion. Emerging from recession, consumers are encouraged by income gains and other favorable developments to begin making purchases that were deferred during the recession. The willingness to reduce the proportion of disposable income devoted to saving supports the growth of expenditures for a time, but this support diminishes as the saving ratio—the ratio of saving to disposable personal income—returns to normal levels. In the second quarter, the saving ratio was 7 percent, essentially unchanged from the previous quarter but considerably below the rather high average of 7.8 percent for all of 1975. In the longer run, saving has averaged about 6 percent of disposable income, suggesting that there could well be room for a further near-term decline in the ratio which would provide stimulus to consumption spending. Changes in this ratio are irregular, however, and reflect variations in consumer confidence as well as other factors. In March and April, consumers expressed somewhat less optimism about the near-term economic outlook and contemplated a retrenchment of buying plans. Later evidence suggests that consumer confidence improved toward the end of the second quarter. Further improvement in consumers' attitudes could encourage resumption of the decline in the saving ratio toward its longer run average and thereby foster continued gains in consumption expenditures.

Chart I

RECENT CHANGES IN REAL GROSS NATIONAL PRODUCT AND ITS COMPONENTS

Seasonally adjusted

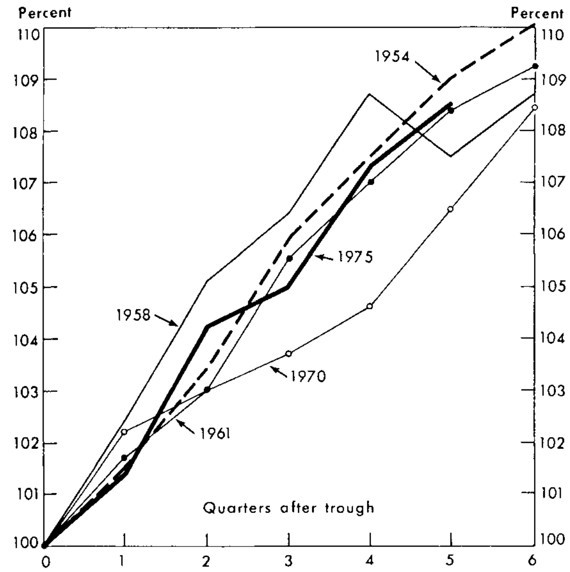


Source: United States Department of Commerce, Bureau of Economic Analysis.

Chart II

REAL GROSS NATIONAL PRODUCT IN RECOVERY

INDEXED AS A PERCENTAGE OF TROUGH-QUARTER LEVEL*



Note: The National Bureau of Economic Research has dated recession troughs in the second quarter 1954, second quarter 1958, first quarter 1961, fourth quarter 1970. The first quarter of 1975 was used as the date for the most recent trough.

*Each reference-cycle expansion is dated from the year in which the trough quarter occurred, and the trough level equals 100 percent.

Source: United States Department of Commerce, Bureau of Economic Analysis.

Residential construction expenditures advanced further in the second quarter, although the strong growth experienced during the last half of 1975 was not maintained over the first half of this year. Private housing starts rose slightly during the April-June period to a 1.43 million unit annual rate, as a substantial increase in starts of multifamily dwellings more than offset a decline in the number of single-family homes started. Permits issued to build new units fell a bit, entirely in the one-family area. In light of relatively heavy backlogs of new single-family homes for sale, the outlook for single-family building is uncertain. Unless sales begin to pick up, the current stock of unsold homes will tend to hold down the number of single-family starts. On the other hand, the continued growth both of real disposable income and of mortgage commitments at thrift institutions may provide support for construction activity in coming months.

Capital spending picked up further in the second quarter. While gross investment in real terms is still about 14 percent below its previous peak, the April-June advance —9.6 percent at an annual rate—marked the third consecutive quarterly increase after six quarters of decline. Outlays for structures accounted for nearly one half of the second-quarter increase. This sharp rise still left spending on structures substantially below pre-recession levels, but it might signal the beginning of work on "greenfield" plants, which represent entirely new facilities, by industries anticipating reaching capacity in the near term. Other firms with more leeway to expand production in available plants continued to modify existing buildings and equipment and to purchase new capital goods in response to expanding demand. Surveys of investment plans indicate only modest additional gains in outlays in the months ahead. These plans are subject to revision, however, and the incoming data on new capital equipment orders suggest somewhat greater strength.

According to preliminary and incomplete data, net exports of goods and services declined in real terms for the second straight period, but the reduction during the three months ended in June was much smaller than the substantial first-quarter drop. Changes in imports again played the dominant role. Imports grew less rapidly during the second quarter than in the previous three-month period, when the rapid growth of domestic activity stimulated demand for foreign products partly to accumulate inventories. The level of exports changed little in real terms during the second quarter, though there was some rise in exports of goods. Export demand should continue to increase as the economies of major American trading partners move further into the recovery phase of the business cycle. A smaller cyclical difference in growth rates would tend to improve the net export balance, and an early sign of this may have been the narrowing of the current-dollar merchandise trade deficit in the second quarter despite further increases in fuel imports.

Total government purchases rose $2.7 billion in real terms during the second quarter, nearly recouping the decline that had occurred during the January-March period. The increase was evenly split between the Federal and the state and local sectors. National defense purchases accounted for much of the increase in Federal outlays for goods and services. Preliminary data suggest, however, that Federal purchases in fiscal 1976, which ran from July 1975 through June 1976, were lower than the Government had expected, and some of this spending may be shifted to later in the calendar year as a consequence of changes in budget procedures now taking effect.

Spending authority for most current operations, many of which contribute to Federal purchases of goods and services, usually lapses at the end of a fiscal year. Funds appropriated but not spent by the start of the next fiscal year generally cannot be carried over, and new Congressional action is required for further operations. This arrangement has often resulted in a seasonal bulge during June in spending, which tended to be smoothed out in derivation of seasonally adjusted levels. The Congressional Budget and Impoundment Control Act of 1974, however, established new budget procedures for the Congress and shifted the start of the new fiscal year to October to give lawmakers a better chance of completing action on appropriations before the Government actually begins spending money. Implementation of these procedures has created a transition quarter from July through September 1976, during which fiscal 1976 spending authority remains in effect. The various Federal departments were therefore under less pressure than usual to complete scheduled spending by the end of June, and at least some of the outlay shortfalls in defense and other areas are likely to be made up during the third quarter.

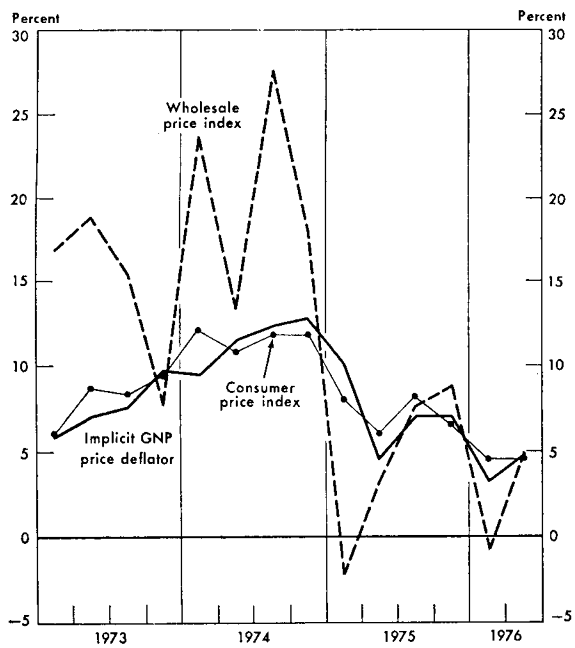
PRICES

The latest readings on inflation continue to be moderately encouraging. The major indicators suggest that the general price level rose at a somewhat faster rate in the second quarter than in the first, but this acceleration reflects the absence of the outright declines in prices of certain items that occurred in the January-March interval rather than mounting inflationary pressures. The implicit price deflator for GNP, the broadest of the official price indexes, rose at a 4.7 percent annual rate in the second quarter (see Chart III). This was 1.5 percentage points above the first-quarter figure, which was depressed by falling prices for some food and energy products, but was about half the average inflation rate experienced during the 1974-75 period. The fixed-weight deflator, which holds the composition of output constant, showed a smaller increase from 4.2 percent in the first quarter to 4.7 percent in the second. The mild acceleration can be attributed to the food and energy components, since prices of other goods and services rose at a 6.2 percent rate in the first quarter and a 4.6 percent rate in the April-June period.

As for wholesale prices, the switch from a slight decline in the first quarter to a 4.9 percent annual-rate increase in the second stemmed from movements in the volatile food component. Farm products and processed foods and feeds prices rose on a quarterly average basis at an 11.3 percent annual rate in the April-June period, compared with a 17.3 percent rate of decline during the first three months of the year. By contrast, wholesale prices of industrial commodities climbed at only a 3.1 percent rate in the second quarter, compared with a 5 percent first-quarter increase.

Prices of consumer goods and services followed a similar pattern. Excluding food and energy, the rate of increase in consumer prices decreased from an 8.1 percent rate in the first quarter to a 6.2 percent rate in the second.

Chart III
RECENT PRICE BEHAVIOR
CHANGE FROM PREVIOUS QUARTER AT ANNUAL RATE
Seasonally adjusted



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

Food prices increased at a modest 1.6 percent rate, after declining during the first three months of the year. With near-record grain crops in prospect and marketings of livestock also likely to increase, the outlook for retail food prices seems favorable, depending of course on the weather and on foreign demand.

WAGES AND PRODUCTIVITY

Wage pressures moderated slightly further in the second quarter of 1976. Average hourly earnings of private nonfarm production and other nonsupervisory workers, adjusted to exclude the impact of interindustry shifts in employment and of overtime in manufacturing, rose at a 6.1 percent annual rate during the second quarter, a bit less than in the preceding three-month period. Similarly, major collective bargaining settlements reached in the second quarter provided for a somewhat slower increase in wages and benefits than did those in the January-March interval. During the first half of 1976, the average first-year wage and benefit gain negotiated in contracts covering 5,000 or more workers was 8.9 percent, down from 10.9 percent in the corresponding period of 1975. First-year wage increases alone, under contracts covering 1,000 or more workers, also decelerated in the second quarter, though the number of workers affected by contract expirations increased. During the first three months of the year, contracts expired for 913,000 workers. In the second quarter, the figure rose to more than 1.5 million, about 10 percent of whom had not negotiated new contracts by the end of June. The collective bargaining schedule will be nearly as heavy in the July-September period, with the automobile and farm equipment industries most affected.

Productivity, as measured by output per hour worked in the private business sector, rose at a 3.6 percent annual rate in the April-June period, compared with the rapid 7.5 percent rate in the previous quarter and 1.4 percent in 1975. In contrast, the growth of productivity in the manufacturing sector alone increased from a 5.1 percent rate in the first quarter to a 7.8 percent rate in the second. Unit labor costs in the private business sector rose at a 3.6 percent annual rate in the April-June period, while a smaller increase in the manufacturing sector left unit costs there still below the year-earlier level. Annual productivity gains of about 3 percent were achieved in the private economy during the 1947-67 period. The increase in more recent years has averaged only about 1.5 percent, causing some concern about future gains, but the presence of underutilized capacity permits more rapid increases in the early stages of a recovery.

As for labor market conditions, the number of persons employed rose by 407,000 in July, in line with the average monthly increase during the first half of the year. The civilian labor force, however, grew by 690,000 during the month. As a result, the unemployment rate rose from 7.5 percent in June to 7.8 percent in July, with adult women accounting for most of the increase. As conventionally measured, growth of the civilian labor force tends to slow when unemployment is high because job seekers become discouraged. Those who do not seek jobs are not counted as being in the labor force. Conversely, an improvement in the unemployment picture brings previously discouraged workers back into the labor force. This movement slows the reduction in the unemployment rate, unless the growth of employment is particularly strong. The 2.2 million increase in the civilian labor force since December exceeds the annual rise in either of the two preceding years.

The Money and Bond Markets in July

Interest rates in the money and bond markets generally declined in July, continuing the movement begun early in the preceding month. Following the modest easing in the Federal funds market, which emerged early in the month, rates on most money market instruments edged down. The rate decline paused shortly after midmonth but then resumed toward the month end. Reductions in commercial paper and other short-term market interest rates put downward pressure on the commercial bank prime lending rate, which was lowered late in the month by ¼ percentage point to 7 percent by a number of commercial banks. Early in August the 7 percent rate became widespread as most major banks joined in the reduction.

Yields on most intermediate- and long-term debt instruments edged down in July, although yields on Treasury coupon issues were little changed on balance. Market sentiment was buoyed by the decrease in money market rates and by continued moderation of price expectations. In addition, the forward calendar of new issues in the corporate and municipal debt markets became rather modest. There was strong interest in the Treasury's August financing, which was announced late in the month, and the favorable reception to the announcement lent support to the markets.

According to preliminary data, the narrowly defined money stock (M_1) increased appreciably in July following a decline in the previous month. Growth of the more broadly defined money stock (M_2) was also more rapid than in June. The bank credit proxy posted only a modest gain, as certificates of deposit (CDs) declined after a large increase in the preceding period.

THE MONEY MARKET AND THE MONETARY AGGREGATES

Interest rates on money market instruments declined somewhat further in July, after they had stabilized and then moved slightly lower in the previous month (see Chart I). The effective rate on Federal funds averaged 5.31 percent over the month as a whole, compared with a 5.48 percent average in June. Rates on 90- to 119-day dealer-placed commercial paper closed the period at 5⅜ percent, down ⅜ percentage point from the end of June, and average rates on 90-day bankers' acceptances fell about 33 basis points to 5.35 percent. By the end of the month, 90-day large negotiable CDs were trading in the secondary market at 5.35 percent, a decline of 38 basis points over the period. These lower rate levels, particularly for commercial paper, induced commercial banks to adjust their prime lending rate, and late in the month the prime rate was reduced by ¼ percentage point to 7 percent at several major banks, with most others joining in this action in early August. Excess reserves were unusually variable in July (see Table I), as banks built up large reserve surpluses over the July 4 holiday weekend. Because a portion of those surpluses could be carried forward into the next statement week, the initial holiday surplus had the effect of increasing the amplitude of the zigzag pattern of excess reserves in subsequent statement weeks.

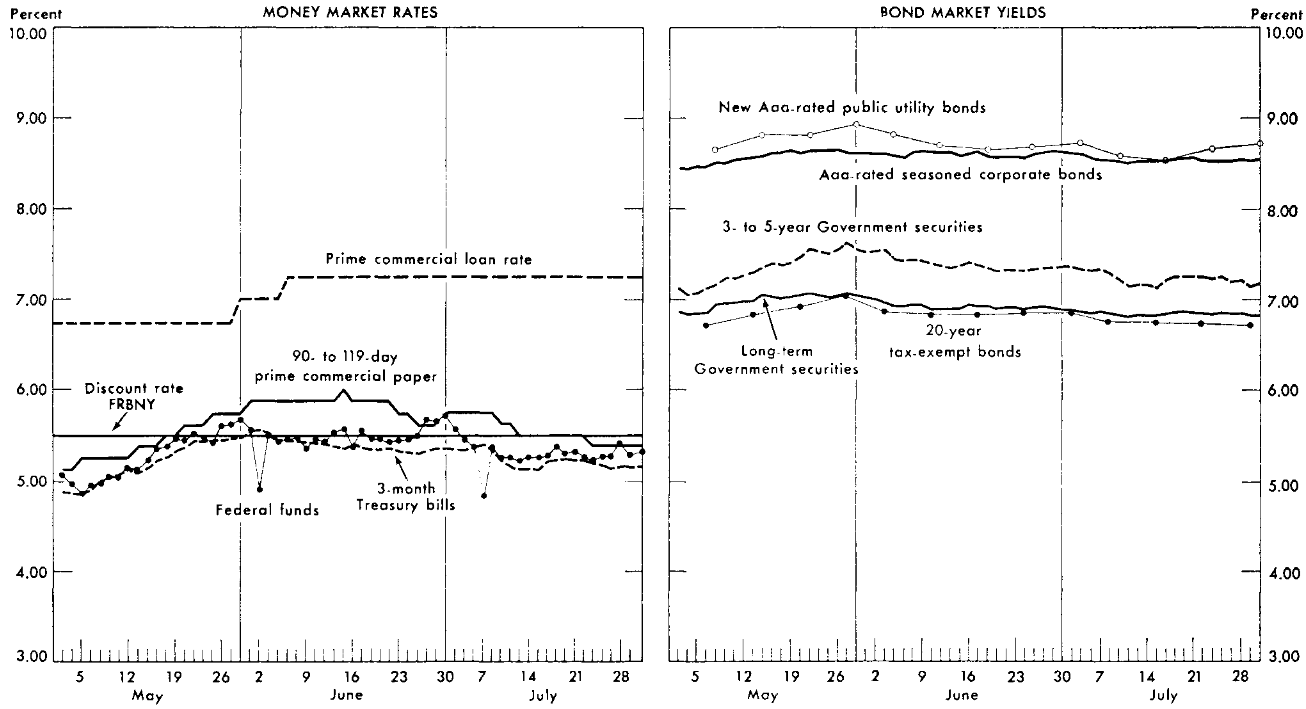
Demand for business loans remained weak in July, continuing the unusual pattern evident so far in the current recovery. Commercial and industrial loans at all weekly reporting banks, including loans sold to affiliates, fell by $1.6 billion over the four statement weeks ended July 28. This latest reduction brought the volume of outstanding loans $9.5 billion below their level of fifty-two weeks earlier. Among the factors generally cited for the persistent sluggishness of business loans are the strong cash flow position of firms allowing for internal financing, the large volume of corporate bond and equity offerings in the first half of 1976, and the relatively modest recovery in business spending to this point in the economic upturn. (For an analysis of these influences, see "The Weakness of Business Loans in the Current Recovery", beginning on page 208 of this *Review*.)

Following a slowdown in June, both M_1 and M_2 exhibited somewhat more rapid growth in July. Over a longer time horizon, however, growth rates for both aggregates continued in a moderate range. During the four-week period ended July 28, seasonally adjusted M_1—private demand deposits adjusted plus currency outside commer-

Chart I

SELECTED INTEREST RATES

May-July 1976



Note: Data are shown for business days only.

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

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

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

cial banks—rose 4.0 percent at an annual rate from its average level of the four statement weeks ended thirteen weeks earlier. This brought the growth in M_1 over the past fifty-two weeks to 4.6 percent (see Chart II). Continued rapid expansion in consumer-type deposits at commercial banks boosted the expansion of M_2—M_1 plus commercial bank time and savings deposits other than large negotiable CDs—to a somewhat higher rate. During the four statement weeks ended in July, M_2 averaged 9.0 percent at an annual rate above its average during the four statement weeks ended thirteen weeks earlier and 9.3 percent above its average during the four weeks ended fifty-two weeks earlier. In testimony before the Congress on July 27, Federal Reserve Board Chairman Burns disclosed the latest long-run objectives for growth of M_1 and M_2. For the period extending from the second quarter of 1976 through the second quarter of 1977, the desired growth-rate range for M_1 is 4½ percent to 7 percent, identical with the range previously adopted for the four quarters ending with the first quarter of 1977. However, the upper boundary of the target range for M_2 was reduced by ½ percentage point, and the new M_2 growth range is 7½ percent to 9½ percent. According to the testimony, a slight slowing of M_2 growth is expected as a result of some moderation in savings inflows.

The adjusted bank credit proxy—total member bank deposits subject to reserve requirements plus certain nondeposit sources of funds—posted only a modest increase in July. The relatively slow growth of the proxy reflected a decline in the volume of CDs outstanding. Although CDs expanded very rapidly in the previous month, they have been on a downtrend for more than a year, paralleling the course of commercial bank lending to business.

THE GOVERNMENT SECURITIES MARKET

Rates on short- and intermediate-term Government securities moved down in July, while yields on longer term issues changed little over the month. Bolstered by conditions in the Federal funds market, lower dealer-financing costs, and investor demand, Treasury bill rates continued the decline of the previous month. At the last regular weekly auction in July, average issuing rates on the new three- and six-month bills were 5.19 percent and 5.50 percent, respectively (see Table II). These levels represented declines of 17 and 26 basis points from rates established at the final auction in June. Similarly, the 52-week bill was auctioned on July 21 at an average yield 19 basis points below that attained four weeks earlier. In a continued effort to restructure its debt, the Treasury sold during July $0.3 billion less in bills at the weekly auctions than maturing amounts. At the same time, $0.6 billion of new cash was borrowed at the auction of the 52-week bill. Overall, rates on most bills ended the month about 15 to 40 basis points below the levels that prevailed at the end of June.

Yields on most Treasury coupon issues closed the month slightly below end-of-June levels. The modest reduction in money market interest rates was viewed as a technical adjustment, which contributed to the limited price gains posted in the first part of the month. The Treasury raised $2.8 billion of new cash through the auction of two-year notes on July 21. The average issuing yield of 6.95 percent established at this auction was 4 basis points below that of a similar offering the month before. On July 28, the Treasury announced tentative borrowing plans for the remainder of the third quarter. Through September 30, the Treasury's cash borrowing requirements are estimated at between $15 billion and $17 billion. Of this amount, $5.5 billion was raised in July, and $6.1 billion was borrowed in conjunction with the August refunding. In this operation, $4.5 billion of maturing issues was replaced with $2 billion of three-year notes auctioned August 3 at a yield of 6.91 percent, $7.6 billion of 8 percent ten-year notes sold August 4, and $1 billion of 25-year bonds auctioned August 6 at a yield of 8.01 percent. The ten-year notes, the centerpiece of the Treasury's refunding effort, were sold on a subscription basis in minimum denominations of $1,000. The popular ten-year notes

Table I

FACTORS TENDING TO INCREASE OR DECREASE MEMBER BANK RESERVES, JULY 1976

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

Factors	Changes in daily averages—week ended July 7	July 14	July 21	July 28	Net changes
"Market" factors					
Member bank required reserves	+ 363	+ 71	— 308	— 2	+ 124
Operating transactions (subtotal)	+1,016	+3,974	— 95	+ 173	+5,068
Federal Reserve float	+ 275	+ 940	— 795	— 239	+ 181
Treasury operations*	+1,374	+3,294	+1,514	— 588	+5,594
Gold and foreign account	+ 80	+ 2	— 27	+ 32	+ 87
Currency outside banks	— 686	— 535	— 542	+1,208	— 555
Other Federal Reserve liabilities and capital	— 27	+ 273	— 246	— 239	— 239
Total "market" factors	+1,379	+4,045	— 403	+ 171	+5,192
Direct Federal Reserve credit transactions					
Open market operations (subtotal)	—1,554	—4,576	+ 575	— 22	—5,577
Outright holdings:					
Treasury securities	+ 35	—1,727	+ 184	— 194	—1,702
Bankers' acceptances	— 11	— 9	— 9	— 4	— 33
Federal agency obligations	—	—	—	—	—
Repurchase agreements:					
Treasury securities	—1,345	—2,266	+ 359	+ 168	—3,084
Bankers' acceptances	— 184	— 436	+ 29	— 11	— 602
Federal agency obligations	— 49	— 138	+ 12	+ 19	— 156
Member bank borrowings	— 42	+ 53	— 116	+ 98	— 7
Seasonal borrowings†	— 3	— 3	+ 1	+ 3	— 2
Other Federal Reserve assets‡	+ 423	— 106	+ 118	— 495	— 60
Total	—1,173	—4,629	+ 577	— 419	—5,644
Excess reserves‡§	+ 206	— 584	+ 174	— 248	— 452

	Daily average levels				Monthly averages‖
Member bank:					
Total reserves, including vault cash‡§	34,616	33,961	34,443	34,197	34,304
Required reserves	33,961	33,890	34,198	34,200	34,062
Excess reserves§	655	71	245	— 3	242
Total borrowings	124	177	61	159	130
Seasonal borrowings†	26	23	24	27	25
Nonborrowed reserves	34,492	33,784	34,382	34,038	34,174
Net carry-over, excess or deficit (—)¶	238	185	50	175	162

Note: Because of rounding, figures do not necessarily add to totals.
* Includes changes in Treasury currency and cash.
† Included in total member bank borrowings.
‡ Includes assets denominated in foreign currencies.
§ Adjusted to include waivers or penalties for reserve deficiencies in accordance with the Regulation D change effective November 19, 1975.
‖ Average for four weeks ended July 28, 1976.
¶ Not included in data above.

were substantially oversubscribed, and the $7.6 billion of orders accepted by the Treasury represented a concession to its original plan to issue between $4 billion and $6 billion of the notes. The remainder of the Treasury's borrowing needs for the transition quarter will be accomplished through sales of 52-week bills in late August and September, a two-year note offering in late August, the sale of four-year notes in September, and the regular weekly sales of 13-week and 26-week bills. Fiscal year 1977 for the Federal Government begins October 1, 1976.

Some further price improvement on Federal agency securities was posted in the secondary market in July, and new issue activity quickened in comparison with the light volume of the previous month. In the largest agency financing of the month, the Federal Land Banks issued $600 million of fifteen-month bonds with a yield of 6.70 percent and $416.2 million of nine-year bonds with a yield of 7.95 percent. The issue was very well received. Near midmonth, the Federal Intermediate Credit Banks placed $717.0 million of consolidated bonds maturing May 2, 1977 at 6.10 percent, raising $77.0 million in new cash. The Banks for Cooperatives issued $565.0 million of short-term consolidated bonds maturing February 1, 1977 at 5.80 percent. On July 15, the Government National Mortgage Association issued $302.1 million of mortgage-backed thirty-year securities. Of this amount, $125.7 million of 7¼ percent pass-through securities was issued at 8.21 percent, $100.0 million of 8 percent pass-through securities was sold at 8.30 percent, and $76.4 million of 7½ percent pass-through securities obtained a yield of 8.24 percent. The Department of Housing and Urban Development placed $223.1 million of notes to finance urban renewal projects at an average interest rate of 3.236 percent, the highest rate for such a financing since December 1975.

Table II

AVERAGE ISSUING RATES AT REGULAR TREASURY BILL AUCTIONS*

In percent

Maturity	Weekly auction dates—July 1976			
	July 2	July 12	July 19	July 26
Three-month	5.412	5.190	5.226	5.194
Six-month	5.768	5.430	5.536	5.497

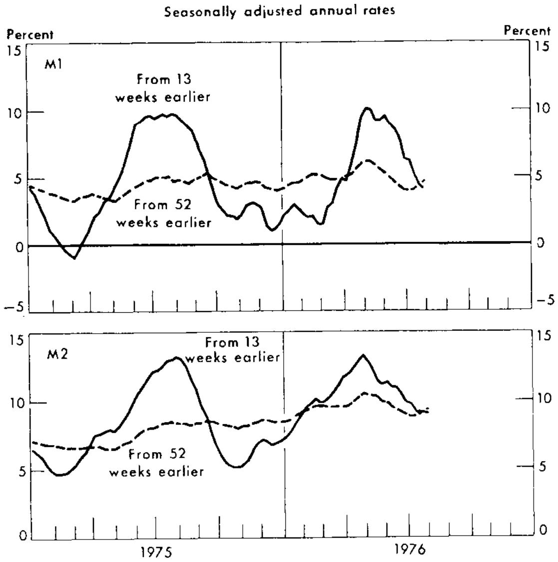
Maturity	Monthly auction dates—May-July 1976		
	May 26	June 23	July 21
Fifty-two weeks	6.309	6.081	5.887

* 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.

Chart II

GROWTH OF SELECTED MONEY STOCK MEASURES

Seasonally adjusted annual rates



Note: Growth rates are computed on the basis of four-week averages of daily figures for periods ended in the statement week plotted, 13 weeks earlier and 52 weeks earlier. The latest statement week plotted is July 28, 1976.

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

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

Source: Board of Governors of the Federal Reserve System.

OTHER SECURITIES MARKETS

Yields in the corporate and municipal bond markets declined moderately in July. Developments in the money market and the smaller than expected increase in wholesale prices combined with generally light forward calendars to improve the atmosphere in both markets.

The improvement in the corporate market was reflected in the successful distribution of an Aa-rated utility issue early in the month at a yield 25 basis points below a similar issue offered two weeks earlier. The $60 million of new thirty-year bonds provided an 8.75 percent return. However, a similar $100 million issue marketed around midmonth sold slowly at 8.67 percent. Investors were unwilling to concede this much of a premium for the somewhat more highly regarded bonds, and a substantial amount of the issue remained in underwriters' hands. Price restrictions were removed, and the issue subsequently traded about 10 basis points higher in the secondary market. The improvement in the corporate market was limited by the relative attractiveness of United States Government securities, reflected in the rather narrow yield spread between corporate and Government bonds, and by investor expectations that the Treasury's August financing would contain a new supply of long-term bonds. Much of the volume of fixed-income obligations placed by underwriting syndicates during the month consisted of medium-quality issues, evidencing further relaxation of previous insistence by investors on prime-quality debt.

Paralleling the movement in yields for government and corporate debt in July, returns on Aaa-rated issues of state and local governments edged downward in the first part of the month but stabilized and retraced part of the earlier declines in the second half. Early in July the State of Minnesota marketed $62 million of Aaa-rated bonds with yields ranging from 3.20 percent in 1977 to 5.60 percent on the 1996 issues. The yields on these securities were up to 15 basis points lower than on an issue with a similar rating offered in mid-June. Later in the month, the State of Texas Water Development Board offered $40 million of general obligation Aaa-rated bonds which were well received when priced to yield 4.20 percent in 1982 to 5.75 percent in 1996. The yield on the twenty-year maturity was 15 basis points higher than on the Minnesota issue offered two weeks earlier. Rate declines over the month as a whole were reflected in The Bond Buyer Index of twenty bond yields on twenty-year tax-exempt bonds which closed the month at 6.73 percent, down 14 basis points over the period. The light calendar of new issues allowed dealers to make some progress in reducing inventories, as measured by the Blue List, which fell $103.4 million to $756.3 million over the month.

The Weakness of Business Loans in the Current Recovery

By Maury N. Harris*

While the United States has experienced a brisk recovery in economic activity over the five-quarter period ended mid-1976, business loans at commercial banks have been unusually weak. Contrary to similar periods in previous business upturns, commercial and industrial loans remain well below the level at the business-cycle trough of March 1975 (see Chart I). Such atypical behavior has attracted widespread attention, as business loans are a closely watched economic barometer. This article is intended to provide perspective on a number of factors which may have contributed to the softness in business loans. On the basis of analysis of the economic variables included in a general model of business loan demand, it appears that an unusual lack of strength in inventory investment early in the recovery, a marked improvement in corporate cash flow, and the substantial capital market financing associated with restructuring of corporate balance sheets all have contributed importantly to the reduction in business loans. A large spread between the commercial bank prime lending rate and the commercial paper rate and the rather moderate expansion in business fixed investment spending during this recovery have probably played smaller roles.

This article is divided into three sections. In the first, the behavior of business loans during the current recovery is compared with the performance of such loans in four previous upturns. In the second section, factors affecting both the demand for, and supply of, business loans are examined to identify those departing from past cyclical patterns and thus helping to explain the unusual weakness prevalent in business loans since the economic recovery began in the spring of 1975. Attention in this section is focused primarily on variables influencing business demand for bank loans, such as business investment spending and reliance on alternative sources of finance. Finally, the third section contains a brief summary and conclusions.

THE RECENT BEHAVIOR OF BUSINESS LOANS

Commercial and industrial loans at all commercial banks, including loan sales to affiliates, peaked in late 1974 and have been declining almost continuously ever since.[1] (For developments in July, see "Money and Bond Markets" in this *Review*.) While business loans are regarded as a lagging indicator of business-cycle turning points, the lag in the present recovery is unprecedented for the postwar period.[2] This comparative cyclical weakness is especially striking, as the growth of current-dollar gross national product has been more rapid in the present recovery than at similar stages in earlier upturns. Had business loans at all commercial banks increased as they did on average during the previous four business upturns, they would have been in July about 9 percent above the level at the March 1975 business-cycle trough, or some $27 billion greater than reported. In fact, business loans declined by about $10 billion over the April 1975-July 1976 interval, the first sixteen months of the recovery.

The absence of strength in business loans has been

* Mr. Harris is an economist in the Domestic Research Department of the Federal Reserve Bank of New York.

[1] Most analysts take the position that affiliates' loan holdings should be included in commercial bank loan data because of banks' practice of selling loans to affiliates.

[2] Business loans at weekly reporting banks are one of the six series constituting the Commerce Department's recently revised index of lagging indicators.

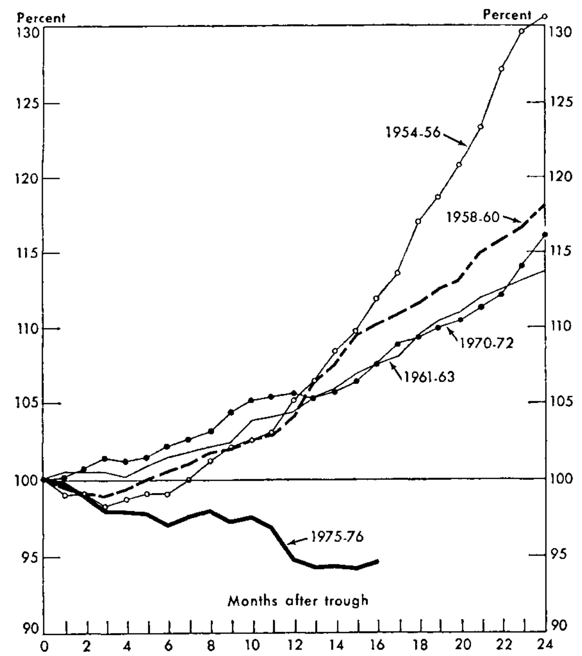
widely diffused among different categories of borrowers, more pronounced in short-term loans, and somewhat more severe at New York City banks than elsewhere. According to disaggregated data from a sample consisting of the nation's largest commercial banks, loans to most major categories of borrowers fell during the early stages of the recovery. Notable exceptions were petroleum refining and mining and loans to foreign businesses. Holdings of bankers' acceptances, which are included in business loans, also increased; this usually is the case when loan demand is weak. Subsequently, in the first half of 1976, loans to firms in wholesale trade and textiles began to expand noticeably, while lending to the service and retail sectors and most manufacturing industries continued weak. At these same large commercial banks, short-term loans—less than one-year maturity—have accounted for about four fifths of the decline in commercial and industrial loans during the first five quarters of the recovery. On a geographical basis, loans including loan sales to affiliates have been weaker at large weekly reporting banks in New York City, compared with other large weekly reporting banks.[3] At smaller banks not included in the sample of weekly reporting banks, many small business customers have limited access to nonbank external finance, and business loans expanded during most of the recovery.

Chart I

BUSINESS LOANS IN THE FIRST 24 MONTHS OF RECOVERIES

ALL COMMERCIAL BANKS, SEASONALLY ADJUSTED

TROUGH EQUALS 100



Note: Business loans include loan sales to affiliates.

Source: Board of Governors of the Federal Reserve System.

DETERMINANTS OF LOAN WEAKNESS

Business loan activity is influenced by both supply and demand factors. The supply of loans may be constrained by restrictive monetary policy and/or cautious commercial bank lending behavior. In view of the banks' heavy acquisitions during the recovery of securities yielding less than the prime rate, the availability of reserves has not limited banks' ability to meet demand. On the other hand, the recent loan loss experience, concern over capital adequacy, and the need to rebuild liquid assets may have limited bank willingness to expand loans. However, this potential constraint was less likely to be binding in the recent period as modest investment spending, strong internal cash flows, and heavy capital market financing diminished loan demand at banks.

BUSINESS SPENDING.[4] Most statistical analyses confirm that inventory investment is a dominant variable affecting business loan demand. Over the past two decades, the change in the book value of manufacturing and trade inventories explains somewhat over one half of the quarterly change in business loans at all commercial banks.[5] As indicated in Table I, the increase in the book value of business inven-

[3] In a time series analysis of the 1966-74 period, Summers [12] concludes that loans at large weekly reporting banks in New York City are more cyclically sensitive than those at other large weekly reporting banks. Also, he found that cyclical turning points in loan activity at New York City banks tended to lag behind those of loans at banks outside New York City.

The numbers in brackets refer to the literature cited at the end of this article.

[4] In a number of econometric models of the United States economy, the demand for loans depends on business spending requirements and the availability and relative cost of nonbank sources of finance. The amount of business spending is determined in separate equations by a number of variables (e.g., capacity utilization, sales growth, and interest rates). Given a model's projected level of business spending, loan demand then depends on the relative cost attractiveness of bank borrowing. For a detailed description of various econometric approaches, see Budzeika [4], Goldfeld [6], Hendershott [8], Jaffee [9], Melitz and Pardue [11], and Wood [13].

[5] When the quarterly change in business loans including loan sales to affiliates was regressed on the quarterly change in the book value of manufacturing and trade inventories, an R^2 of .54 was obtained for a sample period extending from the first quarter of 1956 through the first quarter of 1976.

Table I

BUSINESS SPENDING IN EARLY STAGES OF ECONOMIC RECOVERIES

Percentage changes from trough quarter

Period	Change in book value of business inventories	Current-dollar change in business fixed investment
1954-III—1955-III	3.4	18.2
1958-III—1959-III	5.1	12.6
1961-II—1962-II	4.5	12.5
1971-I—1972-I	6.1	13.4
1975-II—1976-II	0.6*	7.1

* Inventories for 1976-II are an average of available data for April and May.
Source: United States Department of Commerce.

tories has been much weaker in the present recovery than in any previous upturn examined. While real inventory accumulation resumed in the first quarter of 1976, the previous liquidation had lasted longer than in any earlier postwar recovery. The persistence of an inventory runoff during the first three quarters of the upturn was caused, in part, by the large inventory overhang reflected in the unusually high real inventory-sales ratio attained during the recession. For example, the deflated inventory-sales ratio for the manufacturing and trade sectors peaked in the first quarter of 1975 at 1.87 as compared with peak levels of 1.62 and 1.77 in the 1960-61 and 1969-70 recessions, respectively, the only two other downturns for which data are currently available.

Business investment in plant and equipment is also a determinant of business loan demand.[6] Most statistical analyses suggest, however, that a dollar change in fixed investment has a smaller impact on bank loans than a similar change in business inventories.[7] This is because businesses often desire to match maturities of assets roughly with liabilities, and many banks have traditionally preferred the bulk of their loans to be in the short-term category. During the present recovery, the rise in current-dollar business fixed investment has been considerably weaker than at similar stages in earlier upturns (see Table I). This has occurred partly because capacity utilization has been somewhat lower than in most other postwar recoveries. Nevertheless, compared with past recoveries, business fixed investment spending has not been quite so weak as inventory investment. This development, combined with the greater impact of inventories on bank loans, helps explain why short-term loans have fallen more than term loans.[8]

FINANCIAL FACTORS. In view of the evidence linking business loan behavior to inventory and fixed investment expenditures, many observers expected bank loans to recover in the first quarter of 1976, when inventory liquidation ended and fixed investment began to rise sizably in nominal terms. The continued slack in business loans throughout the first half of this year, however, illustrated the important independent effects of financial considerations.

The relative cost and availability of bank finance is one financial factor which may affect commercial and industrial loans. The differential between the commercial bank prime lending rate and the commercial paper rate has been greater in the current recovery than in some previous upturns (see column 2 in Table II), and a smaller differential during this period may have boosted loan demand somewhat.[9] Of course, in addition to the markup of the prime rate over the paper rate, there are other measures of the cost and availability of bank credit.[10] For example, the Board of Governors quarterly survey of changes in bank lending practices includes examination of changing commercial bank policies with respect to compensating or supporting balances, standards of creditworthiness, and the

[6] In addition to inventory and fixed investment, some models employ business sales or some similar transactions variables to represent working-capital needs. For instance, see Goldfeld [6], who used business sales, and Budzeika [4],who employed accounts receivable. Contrary to business fixed investment and inventory accumulation, these two variables have expanded at about the same pace in the present upturn relative to their average increase in previous recoveries.

[7] Budzeika [4], in an analysis covering 1952-68, found that capital expenditures were considerably more important than inventories in explaining loans at major New York City banks. He interpreted his findings as demonstrating the specific needs of large corporations that borrow heavily from New York City banks.

[8] Budzeika [4] reported that at large New York City banks capital expenditures had more of an impact on term loans while inventory investment had more of an effect on short-term loans.

[9] The differential between the two rates was unusually large at the trough in economic activity in the first quarter of 1975. The subsequent decline during most of the first half year of the recovery actually increased the relative attractiveness of bank finance until the differential began to widen again.

[10] Evaluating the availability aspect, Jaffee [9] incorporates a measure of credit rationing in his model of the commercial loan market. For a recent critique of Jaffee's approach on credit rationing, see Wood [13].

maturity of term loans.[11] A recent evaluation of survey results for 1975 concludes that banks maintained a restrictive posture with respect to the above terms and conditions throughout most of that year. By comparison, bank lending practices were evaluated as being somewhat less restrictive in the 1971 upturn, the only previous recovery included in the survey which began in 1964 [1,2]. Still, cautious lending policies do not appear to explain the drop in business loans, as banks have allowed consumer, real estate, and foreign business loans to rise, albeit at slower rates than in similar stages of earlier recoveries. Moreover, as indicated earlier, conservative lending policies have less effect on loans when weak loan demand does not exert much pressure on banks.

One way to judge part of the reaction of business loans to the relative cost and availability of bank finance is to gauge substitution into commercial paper. If the relative cost and availability of bank loans were influencing loan behavior, commercial and industrial loans would be expanding slower than these loans plus nonfinancial commercial paper, which is a broader measure of short-term commercial and industrial credit demand. In the first year of the recovery, business loans including loan sales to affiliates dropped 5.2 percent while business loans plus nonfinancial commercial paper fell 6.2 percent. This trend was reversed in the three-month period ended in June 1976, however, as business loans fell at a 2.3 percent annual rate while business loans plus nonfinancial commercial paper rose at a 1.9 percent annual rate. To be sure, such a comparison does not reflect the total response of loans to the cost and availability of bank finance. A high prime rate and restrictive lending policies might encourage substitution into longer term finance and depress external financing for small borrowers without access to alternative sources of funds. Nevertheless, the fairly similar weakness in both loans and nonfinancial commercial paper during most of the recovery suggests that substitution into commercial paper, a major reaction to a high prime rate, has not been a prominent factor depressing business loans. Moreover, when determining the relative importance of bank lending behavior and demand factors in present circumstances, it is well worth emphasizing the very evident weakness in demand determinants, which in most statistical business loan models have exerted far stronger impacts on loan behavior than interest rate differentials.

Another financial consideration affecting business loans is the relative attractiveness of financing with long-term debt.

[11] Harris [7] used this data to construct measures of nonprice credit rationing.

Table II

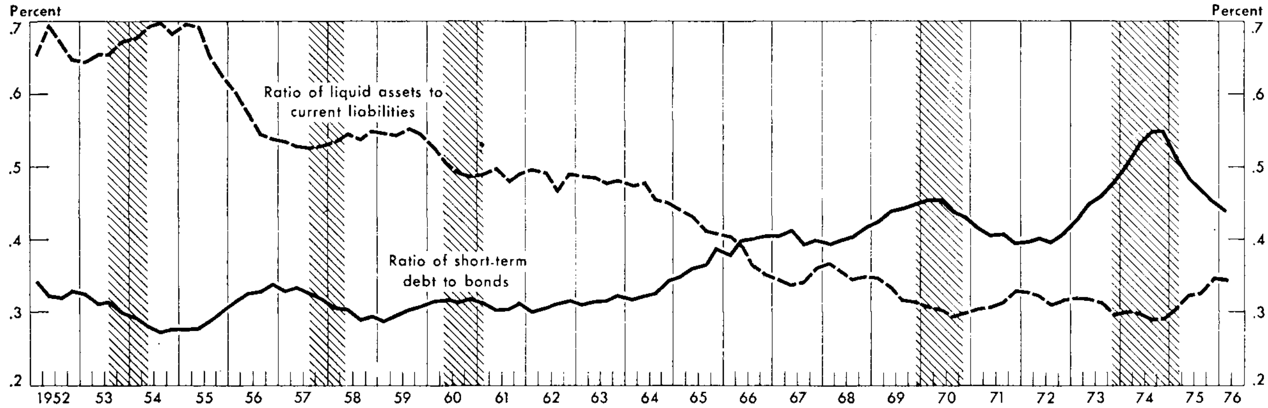
FINANCIAL VARIABLES IN THE EARLY STAGES OF ECONOMIC RECOVERIES

Period	Commercial bank average prime rate less average rate on 4- to 6-month commercial paper*	Nonfinancial corporations			
		Net funds raised through		Growth of internal funds	
		Stock sales	Bond sales	Aftertax profits	Corporate cash flow less inventory profits†
	Percent	Billions of dollars		Percentage changes from trough quarter	
(1)	(2)	(3)	(4)	(5)	(6)
1954-III—1955-II	1.32	1.02	2.95	36.9	27.0
1958-III—1959-II	0.82	2.14	4.10	61.3	34.5
1961-II—1962-I	1.45	1.51	5.16	31.6	25.5
1971-I—1971-IV	0.65	11.44	18.81	40.0	23.8
1975-II—1976-I	1.33	9.78	21.79	53.5	46.2

* Average of first five quarters of recoveries.
† Corporate cash flow is the sum of undistributed aftertax profits plus tax depreciation.
Sources: United States Department of Commerce and Board of Governors of the Federal Reserve System.

Chart II

SELECTED BALANCE-SHEET MEASURES FOR NONFINANCIAL CORPORATIONS



Note: Shaded areas represent periods of recession as defined by the National Bureau of Economic Research, except for the latest recession which is tentatively judged to have ended in March, 1975.

Source: Board of Governors of the Federal Reserve System.

For example, in one version of the MIT-Pennsylvania-SSRC (MPS) econometric model of the United States economy, a narrowing of the spread between the Aaa corporate bond rate and the rate on commercial loans tends to reduce bank loans. This differential does not help to explain the unusual loan weakness prevalent recently, however, because it actually widened in the present recovery in a manner similar to its behavior in the initial stages of past recoveries. The decision to use bank loans or bond finance is sometimes claimed to depend also upon expected changes in long-term rates. It is argued that bank loans have remained slack partly because some borrowers, who anticipate repetition of past patterns of procyclical movements in long-term rates, have secured long-term funds. As expectations are not easily subject to quantification, it is difficult to say whether this latter factor is any different than in past recoveries.

Balance-sheet restructuring is often cited as an important financial consideration holding down business loans. During the previous business upswing, such conventional measures of financial soundness as debt-equity ratios, short-term debt relative to long-term debt, and current assets compared with current liabilities departed markedly from past levels (see Chart II). To be sure, over the past quarter century the concept of normal or prudent values for such financial indicators has been liberalized. Nevertheless, the deterioration in these indexes by the end of 1974 was quite dramatic.[12] In the wake of the heightened financial and economic instability during the previous upturn and recession, there seems to be a growing consensus for some reversal of the balance-sheet trends of recent years. The implications for loan demand are that, in restructuring their balance sheets, businesses will rely less on debt, especially short-term debt, and will build up liquid assets relative to current liabilities. Such behavior will depress loan growth until desired levels of these variables are restored.

Despite emphasis by the financial community on balance-sheet restructuring, it is difficult to determine its precise contribution to the exceptional weakness in loan demand.[13] Part of the fall in the ratio of short-term debt to bonds merely reflects lack of strength in inventory investment. In addition, this ratio has also declined in the

[12] For a recent discussion of the causes and economic significance of these trends, see Board of Governors [3]. McClam [10] discusses balance-sheet trends abroad.

[13] Past econometric work on loan demand does not appear to have incorporated debt restructuring other than indirectly by inclusion of the bond rate, which helps determine the optimum balance of short- to long-term debt. Consideration of such a factor is difficult, as it has probably not exerted much of an impact until recently. Moreover, as discussed by Goldfeld [6], variables representing maximum debt or minimum liquidity are unobservable.

early stages of past recoveries (see Chart II). Nevertheless, the values of various balance-sheet indexes have departed markedly from the experience over most of the postwar period, and the incentive for balance-sheet restructuring thus has been greater than in the early stages of previous recoveries.[14]

In response to the factors discussed above, currently available data indicate that capital market financing has been heavy in the present recovery. Net funds raised by nonfinancial corporations in the bond market were greater in the first year of the most recent recovery than in the four previous upturns (see column 4 in Table II). Corporations have also relied substantially on equity financing as higher stock prices encouraged equity sales (see column 3 in Table II). Relative to the 1971 recovery, however, the volume of funds raised through stock sales in the most recent expansion has been somewhat lower while bond financing was only modestly higher. Still, considering the faster growth of internal funds (see columns 5 and 6 in Table II) and the slower recovery of business spending, recent capital market financing appears very substantial.

In addition to reliance on capital market financing, the increase in internally generated funds appears to be a major financial factor that has served to restrain loan demand. Reflecting, in part, inflation and the 1975 tax cuts, aftertax profits of nonfinancial corporations have risen faster in the present upturn than in three of the four previous recoveries. More telling has been the growth in cash flow less inventory profits (see columns 5 and 6 in Table II), which have a somewhat different significance for cash flow than profits from current production. When inventory levels are maintained, profits on inventories are fully offset by the increased cost of inventories needed for replacement and hence do not provide firms with internal funds for other purposes. Moreover, such profits are taxed identically with other earnings and therefore provide only part of the funds required for reinvesting in more expensive inventories. Financial analysts focusing on the quality of earnings are now tending to discount inventory profits. Budzeika [4] reported cash flow exerting a significant negative effect on business loans at large New York City banks. Experiments with a representative loan demand equation showed that cash flow adjusted for inventory profits exerted a significant negative impact on the change in business loans at all commercial banks.[15]

The growth in cash flow appears even more dramatic when compared with the modest gains in financing requirements. During the final three quarters of 1975, cash flow less inventory profits for nonfinancial corporations exceeded capital outlays for the first time in more than a decade. Such a gap has not persisted for more than a single quarter since 1958. This unusual development, along with the earlier indicated surge in capital market financing, has enabled nonfinancial corporations to raise the ratio of current assets relative to current liabilities (see Chart II). Over the first year of the recovery, liquid assets climbed 16.8 percent, compared with an average 12.4 percent rise in the first year of four previous recoveries. The increase in corporate liquidity may impinge on the near-term business loan outlook if expenditures normally financed with short-term credit are financed with existing liquid assets. Also, future cash flow may be more readily used for internal financing once a liquidity buffer is restored. As the ratio of liquid assets to current liabilities is still low by historical standards, however, firms may not wish to deplete their liquid assets or even markedly to reduce the recent rate of increase.

SUMMARY AND CONCLUSIONS

Compared with previous business upturns, the behavior of business loans in the past sixteen months has been quite unusual, as loans are still a good deal below their level at the business-cycle trough. This atypical development has stemmed largely from the relatively modest recent recovery in business spending on inventories and plant and equipment, coupled with the heavy reliance by

[14] For example, in evaluating various balance-sheet measures following the 1969-70 recession, the President's Council of Economic Advisors [5] characterized the deterioration of corporate liquidity as only "moderate". This suggests that balance-sheet restructuring was of less importance in the 1971 recovery.

[15] The following equation illustrates the effect of adjusted cash flow and some of the other factors discussed above on the change in business loans at all commercial banks.

$$\text{Change in business loans} = \underset{(1.55)}{.392} + \underset{(8.22)}{.527}\,(\text{Change in inventory book value}) + \underset{(4.00)}{.340}\,(\text{Change in business fixed investment}) - \underset{(-4.35)}{1.76}\,\text{Change in (prime rate} - \text{rate on 4- to 6-month commercial paper)} - \underset{(-4.47)}{.178}\,(\text{Change in cash flow excluding inventory profits}),$$

where

t-statistics appear in parenthesis below regression coefficients

Sample period: 1960-I—1976-I

$\bar{R}^2 = .77$

DW = 1.74

SEE = $1.24 billion

business on nonbank sources of finance. In turn, the unusually heavy buildup of inventories relative to sales in the past recession prolonged the subsequent inventory liquidation during the recovery. Also, the historically high dependence on debt, particularly short-term debt, in recent years has prompted balance-sheet restructuring in favor of longer term debt and equity. Finally, the exceptional growth in corporate cash flow witnessed recently has contributed to the sustained weakness in business loans.

LITERATURE CITED

[1] Board of Governors of the Federal Reserve System. "Changes in Bank Lending Practices, 1971". *Federal Reserve Bulletin* (April 1972), pp. 375-79.

[2] Board of Governors of the Federal Reserve System. "Changes in Bank Lending Practices, 1975". *Federal Reserve Bulletin* (April 1976), pp. 307-12.

[3] Board of Governors of the Federal Reserve System. "Recent Changes in the Liquidity of Major Sectors of the U.S. Economy". *Federal Reserve Bulletin* (June 1976), pp. 463-69.

[4] Budzeika, George. "A Model of Business Loan Behavior of Large New York City Banks". *Journal of Bank Research* (Winter 1971), pp. 58-72.

[5] Council of Economic Advisers. "Corporate Liquidity in 1969 and 1970". *Economic Report of the President* (February 1971), pp. 165-78.

[6] Goldfeld, Stephen. "An Extension of the Monetary Sector", in James S. Duesenberry et al, eds., *The Brookings Model: Some Further Results* (Chicago: Rand McNally and Company, 1969).

[7] Harris, Duane. "Credit Rationing at Commercial Banks: Some Empirical Evidence". *Journal of Money, Credit and Banking* (May 1974), pp. 227-40.

[8] Hendershott, Patric. "Recent Development of the Financial Sector of Econometric Models". *Journal of Finance* (March 1968), pp. 41-66.

[9] Jaffee, Dwight. *Credit Rationing and the Commercial Loan Market—An Econometric Study of the Structure of the Commercial Loan Market* (New York: John Wiley and Sons, 1971).

[10] McClam, Warren. "Inflation, Recession and the Burden of Private Debt". *Banca Nazionale Del Lavoro Quarterly Review* (June 1975), pp. 145-71.

[11] Melitz, Jacques, and Pardue, Morris. "The Demand and Supply of Commercial Bank Loans". *Journal of Money, Credit and Banking* (May 1973), pp. 669-92.

[12] Summers, Bruce. "A Time Series Analysis of Business Loans at Large Commercial Banks". *Economic Review* (Federal Reserve Bank of Richmond, May-June 1975), pp. 8-14.

[13] Wood, John. *Commercial Bank Loan and Investment Behaviour* (New York: John Wiley and Sons, 1975).