Monetary Policy and Economic Developments

Monetary Policy and the Economic Outlook

Last year was a difficult one for the economy of the United States. The slowdown in the growth of economic activity that had become apparent in late 2000 intensified in the first half of the year. Businesses slashed investment spending—making especially deep cuts in outlays for high-technology equipment—in response to weakening final demand, an oversupply of some types of capital, and declining profits. As actual and prospective sales deteriorated, many firms in the factory sector struggled with uncomfortably high levels of inventories, and the accompanying declines in manufacturing output steepened. At the same time, foreign economies also slowed, further reducing the demand for U.S. production. The aggressive actions by the Federal Reserve to ease the stance of monetary policy in the first half of the year provided support to consumer spending and the housing sector. Nevertheless, the weakening in activity became more widespread through the summer, job losses mounted further, and the unemployment rate moved higher. With few indications that economic conditions were about to improve, with underlying inflation moderate and edging lower, and with inflation expectations well contained, the Federal Reserve continued its efforts to counter the ongoing weakness by cutting the federal funds rate, bringing the cumulative reduction in that rate to 3 percentage points by August.

The devastating events of September 11 further set back an already fragile economy. Heightened uncertainty and badly shaken confidence caused a widespread pullback from economic activity and from risk-taking in financial markets, where equity prices fell sharply for several weeks and credit risk spreads widened appreciably. The most pressing concern of the Federal Reserve in the first few days following the attacks was to help shore up the infrastructure of financial markets and to provide massive quantities of liquidity to limit potential disruptions to the functioning of those markets. The economic fallout of the events of September 11 led the Federal Open Market Committee (FOMC) to cut the target federal funds rate after a conference call early the following week and again at each meeting through the end of the year (see box “Monetary Policy after the Terrorist Attacks”).

Displaying the same swift response to economic developments that appears to have characterized much business behavior in the current cyclical episode, firms moved quickly to reduce payrolls and cut production after mid-September. Although these adjustments occurred across a broad swath of the economy, manufacturing and industries related to travel, hospitality, and entertainment bore the brunt of the downturn. Measures of consumer confidence fell sharply in the first few weeks after the attacks, but the deterioration was not especially large by cyclical standards, and improvement in some of these indexes was evident in October. Similarly, equity prices started to rebound in

NOTE. The discussions here and in the next section (“Economic and Financial Developments in 2001 and Early 2002”) consist of the text, tables, and selected charts from *Monetary Policy Report to the Congress* (Board of Governors, February 2002).

Monetary Policy after the Terrorist Attacks

The terrorist attacks on September 11 destroyed a portion of the infrastructure of U.S. financial markets, disrupted communication networks, and forced some market participants to retreat to contingency sites in varying states of readiness. These developments, along with the tragic loss of life among the employees of a few major financial firms, greatly complicated trading, clearing, and settlement of many different classes of financial instruments. Direct dislocations elevated uncertainties about payment flows, making it difficult for the reserve market to channel funds where they were needed most. Depositories that held more reserve balances than they preferred had considerable difficulty unloading the excess in the market; by contrast, depositories awaiting funds had to scramble to cover overdraft positions. As a result, the effective demand for reserves ballooned.

The Federal Reserve accommodated the increase in the demand for reserves through a variety of means, the relative importance of which shifted through the week. On Tuesday morning, shortly after the attacks, the Federal Reserve issued a press release reassuring financial markets that the Federal Reserve System was functioning normally and stating that "the discount window is available to meet liquidity needs." Depository institutions took up the offer, and borrowing surged to a record $45½ billion by Wednesday. Discount loans outstanding dropped off sharply on Thursday and returned to very low levels by Friday. Separately, overnight overdrafts on Tuesday and Wednesday rose to several billion dollars, as a handful of depository and other institutions with accounts at the Federal Reserve were forced into overdraft on their reserve accounts. Overnight overdrafts returned to negligible levels by the end of the week.

Like their U.S. counterparts, foreign financial institutions operating in the United States faced elevated dollar liquidity needs. In some cases, however, these institutions encountered difficulties positioning the collateral at their U.S. branches to secure Federal Reserve discount window credit. To be in a position to help meet those needs, three foreign central banks established new or expanded arrangements with the Federal Reserve to receive dollars in exchange for their respective currencies. These swap lines, which lasted for thirty days, consisted of $50 billion for the European Central Bank, $30 billion for the Bank of England, and an increase of $8 billion (from $2 billion to $10 billion) for the Bank of Canada. The European Central

late September, and risk spreads began to narrow somewhat by early November, when it became apparent that the economic effects of the attacks were proving less severe than many had feared.

Consumer spending remained surprisingly solid over the final three months of the year in the face of enormous economic uncertainty, widespread job losses, and further deterioration of household balance sheets from the sharp drop in equity prices immediately following September 11. Several factors were at work in support of household spending during this period. Low and declining interest rates provided a lift to outlays for durable goods and to activity in housing markets. Nowhere was the boost from low interest rates more apparent than in the sales of new motor vehicles, which soared in response to the financing incentives offered by manufacturers. Low mortgage interest rates not only sustained high levels of new home construction

Bank drew on its line that week to channel the funds to institutions with a need for dollars.

By Thursday and Friday, the disruption in air traffic caused the Federal Reserve to extend record levels of credit to depository institutions in the form of check float. Float increased dramatically because the Federal Reserve continued to credit the accounts of banks for deposited checks even though the grounding of airplanes meant that checks normally shipped by air could not be presented to the checkwriters' banks on the usual schedule. Float declined to normal levels the following week once air traffic was permitted to recommence. Lastly, over the course of the week that included September 11, as the market for reserves began to function more normally, the Federal Reserve resumed the use of open market operations to provide the bulk of reserves. The open market Desk accommodated all propositions down to the target federal funds rate, operating exclusively through overnight transactions for several days. The injection of reserves through open market operations peaked at $81 billion on Friday. The combined infusion of liquidity from the various sources pushed the level of reserve balances at Federal Reserve Banks to more than $100 billion on Wednesday, September 12, about ten times the normal level. As anticipated by the FOMC, federal funds traded somewhat below their new target level for the rest of the week. By the end of the month, bid–asked spreads and trading volumes in the interbank and other markets receded to more normal levels, and federal funds consistently began to trade around the intended rate.

The Federal Reserve took several steps to facilitate market functioning in September in addition to accommodating the heightened demand for reserves. The hours of funds and securities transfer systems operated by the Federal Reserve were extended significantly for a week after the attacks. The Federal Reserve Bank of New York liberalized the terms under which it would lend the securities in the System portfolio, and the amount of securities lent rose to record levels in the second half of September. For the ten days following the attacks, the Federal Reserve reduced or eliminated the penalty charged on overnight overdrafts, largely because those overdrafts were almost entirely the result of extraordinary developments beyond the control of the account holders. In addition, the Federal Reserve helped restore communication between market participants and in some cases processed bilateral loans of reserves between account holders in lieu of market intermediation.

but also allowed households to refinance mortgages and extract equity from homes to pay down other debts or to increase spending. Fiscal policy provided additional support to consumer spending. The cuts in taxes enacted last year, including the rebates paid out over the summer, cushioned the loss of income from the deterioration in labor markets. And the purchasing power of household income was further enhanced by the sharp drop in energy prices during the autumn. With businesses having positioned themselves to absorb a falloff of demand, the surprising strength in household spending late in the year resulted in a dramatic liquidation of inventories. In the end, real gross domestic product posted a much better performance than had been anticipated in the immediate aftermath of the attacks.

More recently, there have been encouraging signs that economic activity is beginning to firm. Job losses diminished considerably in December and January, and initial claims for unemployment insurance and the level of insured unemployment have reversed their earlier sharp increases. Although motor vehicle purchases have declined appreciably from their blistering fourth-quarter pace, early readings suggest that consumer spending overall has remained very strong early this year. In the business sector, new orders for capital equipment have provided some tentative indications that the deep retrenchment in investment spending could be abating. Meanwhile, purchasing managers in the manufacturing sector report that orders have strengthened and that they view the level of their customers' inventories as being in better balance. Indeed, the increasingly rapid pace of inventory runoff over the course of the last year has left the level of production well below that of sales, suggesting scope for a recovery in output given the current sales pace. Against this backdrop, the FOMC left its target for the federal funds rate unchanged in January. However, reflecting a concern that growth could be weaker than the economy's potential for a time, the FOMC retained its assessment that the risks were tilted unacceptably toward economic weakness.

The extent and persistence of any recovery in production will, of course, depend critically on the trajectory of final demand in the period ahead. Several factors are providing impetus to such a recovery in the coming year. With the real federal funds rate hovering around zero, monetary policy should be positioned to support growth in spending. Money and credit expanded fairly rapidly through the end of the year, and many households and businesses have strengthened their finances by locking in relatively low-cost long-term credit. The second installment of personal income tax cuts and scheduled increases in government spending on homeland security and national defense also will provide some stimulus to activity this year. Perhaps the most significant potential support to the economy could come from further gains in private-sector productivity. Despite the pronounced slowdown in real GDP growth last year, output per hour in the nonfarm business sector increased impressively. Continued robust gains in productivity, stemming from likely advances in technology, should provide a considerable boost to household and business incomes and spending and contribute to a sustained, noninflationary recovery.

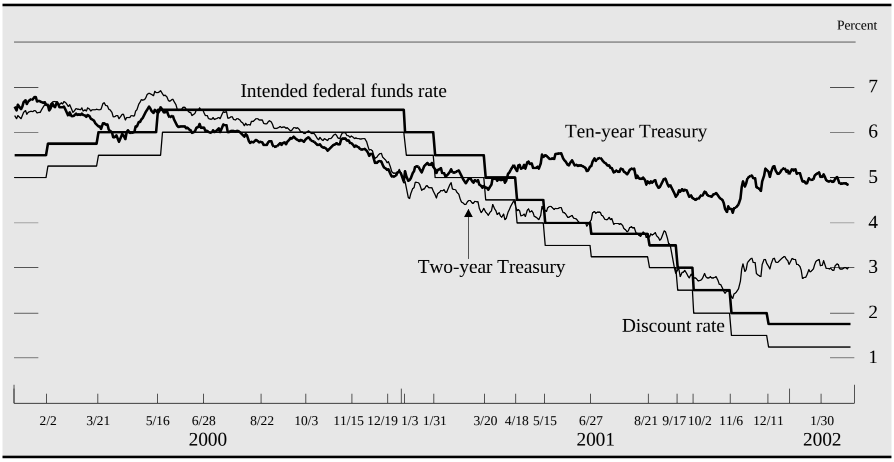
Still, the economy faces considerable risk of subpar economic performance in the period ahead. Because outlays for durable goods and for new homes have been relatively well maintained in this cycle, the scope for strong upward impetus from household spending seems more limited than has often been the case in past recoveries. Moreover, the net decline in household net worth relative to income over the past two years is likely to continue to restrain the growth of spending in coming quarters. To be sure, the contraction in business capital spending appears to be waning. But spending on some types of equipment, most notably communications equipment, continues to decline, and there are few signs yet of a broad-based upturn in capital outlays. Activity abroad remains subdued, and a rebound of foreign output is likely to follow, not lead, a rebound in the United States. Furthermore, lenders and equity investors remain quite cautious. Banks have continued to tighten terms and standards on loans, and risk spreads have increased a little this year. Stock prices have retreated from recent highs as earnings continue to fall amid concerns about the transparency of corporate financial reports and uncertainty about the pace at which profitability will improve.

Monetary Policy, Financial Markets, and the Economy over 2001 and Early 2002

As economic weakness spread and intensified over the first half of 2001, the FOMC aggressively lowered its target for the federal funds rate. Because firms reacted unusually swiftly to indicators that inventories were uncomfortably high and capital was becoming underutilized, the drop in production and business capital spending was especially steep. Moreover, sharp downward revisions in corporate profit expectations caused equity prices to plunge, which, along with a decline in consumer confidence, pointed to vulnerability in household spending. Meanwhile, a significant deceleration in energy prices, after a surge early in the year, began to hold down overall inflation; the restraining effect of energy prices, combined with the moderation of resource utilization, also promised to reduce core inflation. Responding to the rapid deterioration in economic conditions, the FOMC cut its target for the federal funds rate 2½ percentage points—in 5 half-point steps—by the middle of May. Moreover, the FOMC indicated throughout this period that it judged the balance of risks to the outlook as weighted toward economic weakness. The Board of Governors of the Federal Reserve System approved reductions in the discount rate that matched the Committee's cuts in the target federal funds rate. As a result, the discount rate declined from 6 percent to 3½ percent over the period.

At its June and August meetings, the FOMC noted information suggesting continued softening in the economy and a lack of convincing evidence that the end of the slide in activity was in sight. Although consumer spending on both housing and nonhousing items—buoyed by the tax cuts and rebates, low mortgage interest rates, declining energy prices, and realized capital gains from home sales—remained fairly resilient, economic conditions in manufacturing deteriorated further. Firms continued to reduce payrolls, work off excess inventories, and cut back capital equipment expenditures amid sluggish growth in

Selected Interest Rates



NOTE. The data are daily and extend through February 25, 2002. The dates on the horizontal axis are those of scheduled FOMC meetings and of any intermeeting policy actions.

business sales, significantly lower corporate profits, and greater uncertainty about future sales and earnings. With energy prices in retreat, price inflation remained subdued. In reaching its policy decisions at its June and August meetings, the FOMC took into account the substantial monetary policy stimulus already implemented since the start of the year—but not yet fully absorbed by the economy—and the oncoming effects of stimulative fiscal policy measures recently enacted by the Congress. Consequently, the Committee opted for smaller interest rate cuts of ¼ percentage point at both the June and August meetings, which brought the target federal funds rate down to 3½ percent; as earlier in the year, the FOMC continued to indicate that it judged the balance of risks to the outlook as weighted toward economic weakness. After both meetings, the Board of Governors of the Federal Reserve System also approved similar reductions in the discount rate, which moved down to 3 percent.

After the terrorist attacks on September 11, the available Committee members held a telephone conference on September 13, during which they agreed that the financial markets were too disrupted to allow for an immediate alteration in the stance of monetary policy. However, the members were in agreement that the attacks' potential effects on asset prices and on the performance of the economy, and the resulting uncertainty, would likely warrant some policy easing in the very near future. Accordingly, the FOMC, at a telephone conference on September 17, voted to reduce its target for the federal funds rate ½ percentage point, to 3 percent, and stated that it continued to judge the risks to the outlook to be weighted toward economic weakness.

Over subsequent weeks, heightened aversion to risk, which caused investors to flock from private to Treasury and federal agency debt, boosted risk spreads sharply, especially on lower-rated corporate debt. Increased demand for safe and liquid assets contributed to selling pressure in the stock market. At its October 2 meeting, the FOMC had little hard information available on economic developments since the attacks. However, evidence gleaned from surveys, anecdotes, and market contacts indicated that the events of September 11 had considerable adverse repercussions on an already weak economy: Survey indicators of consumer confidence had fallen, and consumer spending had apparently declined. At the same time, anecdotal information pointed to additional deep cutbacks in capital spending by many firms after an already-significant contraction in business fixed investment over the summer months.

When the FOMC met on November 6, scattered early data tended to confirm the information that the decline in production, employment, and final demand had steepened after the terrorist attacks. Although an economic turnaround beginning in the first half of 2002 was a reasonable expectation according to the Committee, concrete evidence that the economy was stabilizing had yet to emerge. Meanwhile, the marked decrease in energy prices since the spring had induced a decline in overall price inflation, and inflation expectations had fallen. Accordingly, the FOMC voted to lower its target for the federal funds rate ½ percentage point at both its October and November meetings and reiterated its view that the risks to the outlook were weighted toward economic weakness. The sizable adjustments in the stance of monetary policy in part reflected concerns that insufficient policy stimulus posed an unacceptably high risk of a more extended cyclical retrenchment that could prove progressively more difficult to counter, given that the federal funds rate—at 2 percent—was already at such a low level.

By the time of the December FOMC meeting, the most recent data were suggesting that the rate of economic decline might be moderating. After plunging earlier in the year, orders and shipments of nondefense capital goods had turned up early in the fourth quarter, and the most recent survey evidence for manufacturing also suggested that some expansion in that sector's activity might be in the offing. In the household sector, personal consumption expenditures appeared to have been quite well maintained, an outcome that reflected the continuation of zero-rate financing packages offered by the automakers, widespread price discounting, and low interest rates. In an environment of very low mortgage interest rates, household demand for housing remained at a relatively high level, and financial resources freed up by a rapid pace of mortgage refinancing activity also supported consumer spending.

Nonetheless, the evidence of emerging stabilization in the economy was quite tentative and limited, and the Committee saw subpar economic performance as likely to persist over the near term. Moreover, in the probable absence of significant inflationary pressures for some time, a modest easing action could be reversed in a timely manner if it turned out not to be needed. In view of these considerations, the FOMC lowered its target for the federal funds rate ¼ percentage point, to 1¾ percent, on December 11, 2001, and stated that it continued to judge the risks to the outlook to be weighted mainly toward economic weakness. As had been the case throughout the year, the Board of Governors approved reductions in the discount rate that matched the FOMC's cuts in the target federal funds rate, bringing the discount rate to 1¼ percent, its lowest level since 1948.

Subsequent news on economic activity bolstered the view that the economy was beginning to stabilize. The information reviewed at the January 29–30, 2002, FOMC meeting indicated that consumer spending had held up remarkably well, investment orders had firmed further, and the rate of decline in manufacturing production had lessened toward the end of 2001. With weakness in business activity abating, and monetary policy already having been eased substantially, the FOMC left the federal funds rate unchanged at the close of its meeting, but it continued to see the risks to the outlook as weighted mainly toward economic weakness.

Economic Projections for 2002

Federal Reserve policymakers are expecting the economy to begin to recover this year from the mild downturn experienced in 2001, but the pace of expansion is not projected to be sufficient to cut into the margin of underutilized resources. The central tendency of the real GDP growth forecasts made by the members of the Board of Governors and the Federal Reserve Bank presidents is 2½ percent to 3 percent, measured as the change between the final quarter of 2001 and the final quarter of this year. The pace of expansion is likely to increase only gradually over the course of the year, and the unemployment rate is expected to move higher for a time. The FOMC members project the civilian unemployment rate to stand at about 6 percent to 6¼ percent at the end of 2002.

A diminution of the rate of inventory liquidation is likely to be an important factor helping to buoy production this

Economic Projections for 2002

Percent

Indicator	MEMO: 2001 actual	Federal Reserve Governors and Reserve Bank presidents	
		Range	Central tendency
Change, fourth quarter to fourth quarter[1]			
Nominal GDP	1.9	3½–5½	4–4½
Real GDP	.1	2–3½	2½–3
PCE chain-type price index	1.3	1–2	About 1½
Average level, fourth quarter			
Civilian unemployment rate	5.6	5¾–6½	6–6¼

1. Change from average for fourth quarter of previous year to average for fourth quarter of year indicated.

year. In 2001, businesses cut inventories sharply so as to avoid carrying excessive stocks relative to the weaker pace of sales, and although this process of liquidation probably is not yet complete in many industries, the overall pace of reduction is likely to slow. Then, as final demand strengthens, liquidation should give way to some restocking later in the year.

As noted above, the forces affecting demand this year are mixed. On the positive side are the stimulative effects of both fiscal policy and the earlier monetary policy actions. A gradual turnaround in employment and a strengthening of the economies of our major trading partners should provide some lift to final demand, and spending by both households and businesses ought to be supported by robust productivity growth. On the other hand, the problems facing the high-tech sector have not yet completely receded, and indications are that spending on other types of capital equipment remains lackluster. The surprising strength of household spending through this period of economic weakness suggests a lack of pent-up consumer demand going forward. In addition, consumers likely will not benefit from declining energy prices to the extent they did last year, and the net decline in equity values since mid-2000 will probably continue to weigh on consumption spending in the period ahead.

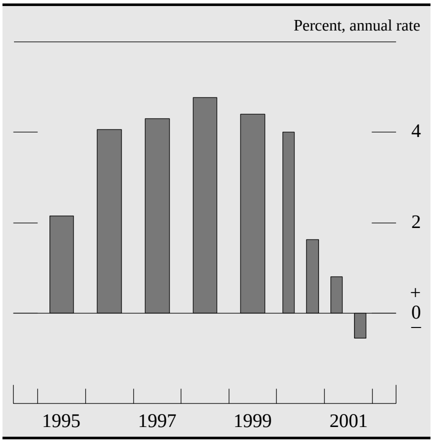
Federal Reserve policymakers believe that consumer prices will increase slightly more rapidly in 2002 than in 2001, as last year's sharp decline in energy prices is unlikely to be repeated. The central tendency of the FOMC members' projections for increases in the chain-type price index for personal consumption expenditures (PCE) is about 1½ percent; last year's actual increase was about 1¼ percent. Nevertheless, diminished levels of resource utilization, the indirect effects of previous declines in energy prices on firms' costs, and continued competitive pressures all ought to restrain the pace of price increases outside of the energy sector this year. ■

Economic and Financial Developments in 2001 and Early 2002

In 2001, the economy turned in its weakest performance in a decade. Real GDP increased at an annual rate of ¾ percent in the first half of the year and, according to the advance estimate from the Commerce Department, declined at a ½ percent annual rate in the second half. Although the effects of the weakening economy were broadly felt, the factory sector was especially hard hit. Faced with slumping demand both here and abroad, manufacturers cut production aggressively to limit excessive buildups of inventories. Moreover, businesses sharply reduced their investment spending, with particularly dramatic cuts in outlays for high-technology equipment. By contrast, household spending was reasonably well maintained, buoyed by lower interest rates and cuts in federal taxes. Firms trimmed payrolls through most of the year, and the unemployment rate moved up nearly 2 percentage points to around 5¾ percent by year-end. Job losses were especially large following the terrorist attacks of September 11, which had extremely adverse effects on certain sectors of the economy—most notably, airline transportation and hospitality industries. Nevertheless, by early this year some signs appeared that the economy was beginning to mend.

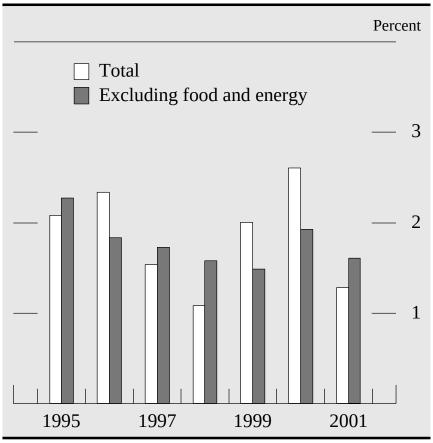
Inflation declined last year, pulled down by a sharp drop in energy prices. Excluding food and energy items, consumer price inflation leveled off and, by some measures, moved lower last year. Weakening economic activity, the indirect effects of declining energy prices on

Change in Real GDP



NOTE. Here and in subsequent charts, except as noted, annual changes are measured from Q4 to Q4, and change for a half-year is measured between its final quarter and the final quarter of the preceding period.

Change in PCE Chain-Type Price Index



NOTE. The data are for personal consumption expenditures (PCE).

firms' costs, and continued strong competitive pressures helped keep a lid on core consumer price inflation.

The Household Sector

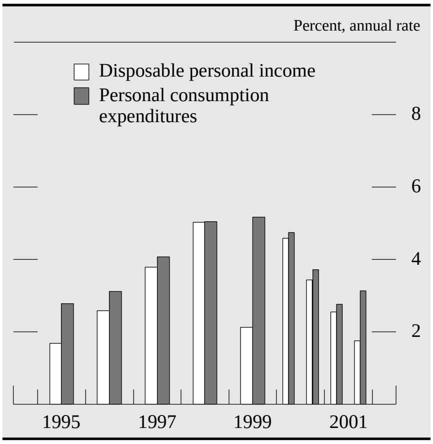
Consumer Spending

Growth in consumer spending slowed last year but remained sufficiently solid to provide an important source of support to overall final demand. Personal consumption expenditures (PCE) increased 3 percent in real terms in 2001 after having advanced 4¼ percent in 2000 and around 5 percent in both 1998 and 1999. The deceleration in consumer spending was widespread among durable goods, nondurable goods, and services. However, motor vehicle expenditures remained strong through most of the year and surged in the fall as consumers responded enthusiastically to automakers' aggressive expansion of financing incentives. After September 11, spending declined in certain travel- and tourism-related categories, including air transportation, hotels and motels, and recreation services such as amusement parks; spending in these categories has recovered only partially since then.

Last year's downshift in consumption growth reflected the weakening labor market and associated deceleration of income as well as the erosion in household wealth since the middle of 2000. With employment declining over much of last year, real personal income rose only about 1¾ percent after a gain of 4½ percent in 2000. The slowing of income growth was even sharper in nominal terms, but price declines for gasoline and other energy items in the latter half of the year substantially cushioned the blow to real incomes. A continued rise in house prices supported the wealth position of many households; in the aggregate, however, household wealth deteriorated further as equity prices moved lower, on net. The decline in wealth since mid-2000 likely exerted a notable restraining influence on household spending last year.

Both monetary and fiscal policy supported consumer spending over the past year. Low interest rates helped enable motor vehicle finance companies to offer favorable financing on new vehicles. In addition, low mortgage rates led to a spate of mortgage refinancing that lasted most of the year, lowering payments and freeing cash to be used by households for other spending needs. Indeed, many households apparently used these refinancings as an opportunity to extract equity from their homes, a move that further accommodated consumer spending. Furthermore, the first wave of tax reductions from the Economic Growth and Tax Relief Reconciliation Act of 2001—including the $300 and $600 rebate checks mailed last summer—likely helped to boost spending in the latter part of the year. The continued phase-in of the tax reductions enacted last year should provide further

Change in Real Income and Consumption



stimulus to income and consumption this year.

The personal saving rate, which had declined through 1999, leveled off in 2000 and in the first half of 2001. The saving rate moved erratically in the second half of the year but rose on average. It shot up in the summer as households received their tax rebates; it then declined later in the year as households spent some of the rebates and as purchases of new motor vehicles soared in response to the incentives.

Consumer sentiment, as measured by both the University of Michigan Survey Research Center (SRC) and the Conference Board, had been running at extremely high levels through most of 2000 but fell considerably near the beginning of last year as concerns about the economy intensified. By the spring, measures of sentiment leveled off near their historical averages and well above levels normally associated with recessions. Sentiment dropped in September. The SRC measure recovered gradually thereafter, while the Conference Board index fell further before turning up later in the year; by early 2002, both sentiment measures again stood near their historical averages.

Residential Investment

As with consumer spending, real expenditures on housing were well maintained last year, buoyed by favorable mortgage interest rates. Interest rates on thirty-year fixed-rate mortgages, which had been as high as 8½ percent in the spring of 2000, hovered around the low level of 7 percent in the first half of 2001. They moved down further to 6½ percent by late October, before backing up to 7 percent again by December as prospects for the economy improved. As monetary policy eased, contract rates on adjustable-rate mortgages moved down sharply to very low levels in the fourth quarter and into early 2002. According to the Michigan SRC survey, declining mortgage rates have helped elevate consumers' assessments of homebuying conditions substantially since mid-2000.

In the single-family sector, 1.27 million new homes were started last year, 3½ percent more than in 2000, when activity had been held down by higher mortgage rates. The pace of starts moved up further in January 2002, in part because of unusually favorable weather. Furthermore, sizable backlogs of building permits early this year suggest that construction activity will remain solid. Sales of new homes were elevated throughout 2001—indeed, for the year, they were the highest on record—and sales of existing homes remained strong as well. Meanwhile, the increase in home prices moderated last year. The constant-quality price index of new homes, which attempts to control for the mix of homes sold, rose only 1½ percent last year, down from a 6 percent gain in 2000.

In the multifamily sector, starts averaged 328,000 units last year, a rate close to the solid pace of the past several years. Conditions are still relatively favorable for the construction of multifamily units. In particular, vacancy rates have remained low, although rents and property values increased at a slower rate last year than in 2000.

Household Finance

Households continued to borrow at a brisk pace last year, increasing their debt outstanding an estimated 8¾ percent, a rate about 1 percentage point faster than the average growth over the previous two years. The cumulative declines in mortgage interest rates encouraged households to take on large amounts of mortgage debt, both by fostering homebuying and by making it attractive to refinance existing mortgages and extract some of the accumulated equity; indeed, the Mortgage Bankers Association (MBA) refinancing index in October reached the highest level since its inception in January 1980. The frenzied pace of refinancing activity tailed off some later in the fourth quarter, when fixed mortgage interest rates backed up. All told, mortgage debt grew an estimated 9 percent last year. Strength in durable goods outlays supported growth in consumer credit (debt not secured by real estate) in the first quarter of 2001, but as consumption spending decelerated over the next two quarters, the expansion of consumer credit slowed sharply. However, consumer credit growth surged in the fourth quarter, in large part because of the jump in motor vehicle sales. For the year as a whole, the rate of expansion of consumer credit, at 6¼ percent, was well below the 10¼ percent rate posted in 2000.

Hefty household borrowing outstripped the growth of disposable personal income in 2001. As a result, despite lower interest rates, the household debt-service burden—an estimate of minimum scheduled payments on mortgage and consumer debt as a share of disposable income—finished the year near the peak recorded at the end of 1986. Measures of household credit quality deteriorated noticeably last year. According to the MBA, delinquency rates on home mortgages continued to trend higher from their historic lows of the late 1990s, and auto loan delinquencies at finance companies edged up, although they too remained at a relatively subdued level. The economic slowdown and the rise in unemployment significantly eroded the quality of loans to subprime borrowers, and delinquency rates for both mortgages and consumer credit in that segment of the market moved sharply higher.

The Business Sector

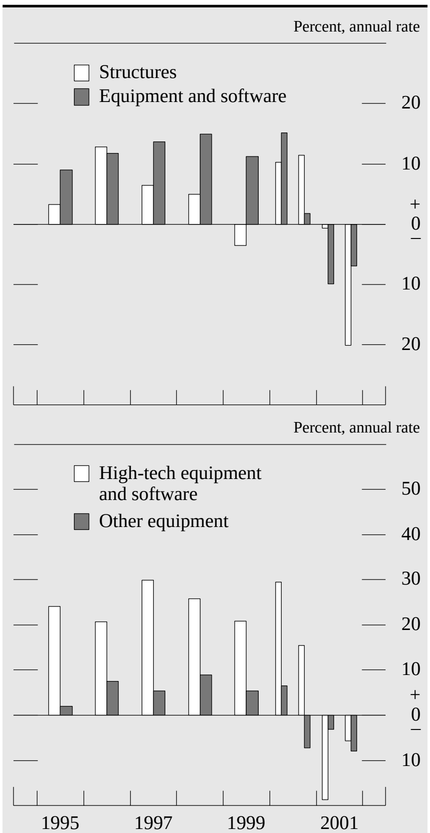
Much of the weakness in activity last year was concentrated in the business sector. In late 2000, manufacturers had begun to cut back production in an effort to reduce an undesired build-up of inventories, and sharp inventory liquidation continued throughout last year. Moreover, the boom in capital outlays that had helped drive the expansion through the late 1990s gave way to a softening of spending in late 2000 and to sharp declines last year. Spending dropped for most types of capital equipment and structures; cutbacks were especially severe for high-tech equipment, some types of which may have been over-bought. A sharp reduction in corporate profits and cash flow contributed to last year's downturn in capital spending, as did general uncertainty about the economic outlook. Despite the reduction in interest rates, which helped restrain businesses' interest expenses, financing conditions worsened somewhat, on balance, given weaker equity values, higher borrowing costs for risky firms, and some tightening of banks' lending standards.

Fixed Investment

Real spending on equipment and software (E&S) declined 8½ percent in 2001 after an increase of the same amount in 2000 and double-digit rates of increase for several preceding years. Spending on high-tech equipment, which has accounted for about 40 percent of E&S spending in recent years, dropped especially sharply last year. Outlays for computers and peripheral equipment, which had risen more than 30 percent in each of the preceding seven years, fell 9 percent in 2001. Spending on communications equipment swung even more severely, moving from increases of more than 20 percent on average from 1998 to 2000 to a decline of more than 30 percent last year. Business spending on software held up comparatively well, falling only 2½ percent in 2001 after having risen around 12 percent in 1999 and 2000.

A number of factors may have weighed on outlays for high-tech equipment, including businesses' decisions to lengthen the replacement cycle for computers in light of weak economic conditions and the absence of new applications requiring the most up-to-date machines. But in addition, the magnitude by which these categories of expenditure had increased in preceding years, together with the abruptness of their downturn, suggests that firms may have been too optimistic about the immediate profitability of some types of high-tech capital; as these expectations were revised, businesses viewed their previous investment as more than sufficient to meet anticipated demand. This possibility is especially likely in the case of communications equipment, for which expectations about prospects for growth in demand appear to have been disappointed. Some of the cutbacks may have reflected a general pulling back in an environment of greater uncertainty. The sharp rise and subsequent decline of equity values in the high-tech sector mirrors the pattern of rising and slowing investment and provides some support for the notion that earnings expectations may have been overly upbeat in the past.

Change in Real Business Fixed Investment



NOTE. High-tech equipment includes computers and peripheral equipment and communications equipment.

Under the influence of ongoing weakness in the market for heavy trucks, business spending on motor vehicles declined through most of the year. But spending stabilized in the fourth quarter, as the generous incentives on motor vehicles may have helped boost spending by small businesses as well as consumers. Domestic orders for new aircraft declined last year, especially after the terrorist attacks last fall, but these lower orders had not yet affected spending by year-end because of the very long lags involved in producing planes. Apart from spending on transportation and high-tech equipment, real outlays declined 7½ percent last year after having increased 6 percent in 2000, with the turnaround driven by a sharp swing in spending on many types of industrial machinery and on office furniture.

Late last year, conditions in some segments of the high-tech sector showed signs of bottoming. Developments in the semiconductor industry have improved, with production increasing during the fall. Some of the improvement is apparently coming from increased demand for computers. In the advance estimate from the Commerce Department for the fourth quarter, real spending on computers and peripheral equipment was reported to have surged at an annual rate of 40 percent. However, spending on communications equipment, for which evidence of a capital overhang has been most pronounced, continued to decline sharply in the fourth quarter, and orders for communications equipment have yet to display any convincing signs of turning around. As for other types of capital equipment, spending continued to decline in the fourth quarter, but a moderate rebound in new orders for many types of capital goods from their autumn lows hinted that a broader firming of demand may be under way.

Real business spending for nonresidential structures also declined sharply in 2001. Construction of office buildings dropped last year after having increased notably for several years; industrial building remained fairly steady through the first half of last year but plummeted in the second half. Vacancy rates for these two types of properties rose considerably, and by year-end the industrial vacancy rate had reached its highest level since mid-1993. Meanwhile, spending on non-office commercial buildings (a category that includes retail, wholesale, and some warehouse space) decreased moderately last year. Investment in public utilities moved down as well, a decline reflecting, in part, a cutback in spending for communications projects such as the installation of fiber-optic networks. Investment in the energy sector was a pocket of strength last year. Construction of drilling structures surged in 2000 and much of 2001, as the industry responded to elevated prices of oil and natural gas. However, with oil and natural gas prices reversing their earlier increases, drilling activity turned down in the latter part of the year.

Inventory Investment

By late 2000, manufacturers were already cutting production to slow the pace of inventory accumulation as inventories moved up relative to sales. Production cuts intensified in early 2001, and producers and distributers liquidated inventories at increasing rates throughout the year. The runoff of inventories was a major factor holding down GDP growth last year. Indeed, the arithmetic subtraction from real GDP growth attributable to the decline in nonfarm inventory investment was 1½ percentage points over the four quarters of 2001. However, because sales also were weakening, inventory-sales ratios remained high in much of the manufacturing sector, and in some portions of the wholesale sector as well, throughout the year.

The motor vehicle sector accounted for about one-quarter of last year's overall inventory drawdown. Late in 2000 and early last year, automakers cut production in an attempt to clear out excess stocks held by dealers. By the spring, vehicle assemblies had stabilized, and the automakers instead dealt with heavy stocks by further sweetening incentives to boost sales. By the end of the year, inventories of cars and light trucks stood at a relatively lean 2¼ million units, nearly 1 million units fewer than were held a year earlier.

Corporate Profits and Business Finance

The profitability of the U.S. nonfinancial corporate sector suffered a severe blow in 2001. The profit slump had begun in the fourth quarter of the previous year, when the economic profits of nonfinancial corporations—that is, book profits from current production with inventory and capital consumption adjustments compiled by the Commerce Department—plummeted almost 45 percent at an annual rate. The first three quarters of 2001 brought little respite, and economic profits spiraled downward at an average annual rate of 25 percent. The ratio of the profits of nonfinancial corporations to the sector's gross nominal output fell to 7½ percent last year, a level not seen since the early 1980s. Earnings reports for the fourth quarter indicate that nonfinancial corporate profits continued to fall late in the year.

Before-Tax Profits of Nonfinancial Corporations as a Percent of Sector GDP

NOTE. The data are quarterly and extend through 2001:Q3. Profits are from domestic operations of nonfinancial corporations, with inventory valuation and capital consumption adjustments.

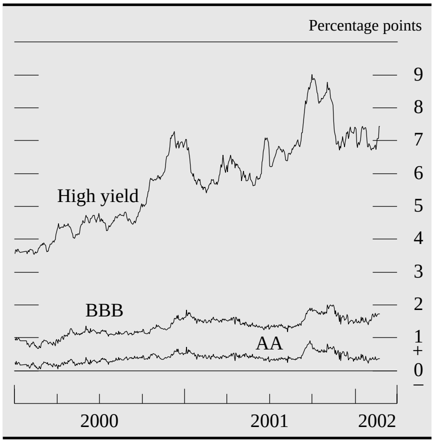
Business borrowing slowed markedly last year because firms slashed investment in fixed capital and inventories even more than the drop in profits and other internally generated funds. Business debt expanded at a 6¼ percent annual rate in 2001, well below the double-digit rates of the two previous years, and its composition shifted decidedly toward longer-term sources of funds. Early in the year, favorable conditions in the corporate bond market, combined with firms' desire to lock in low interest rates, prompted investment-grade firms to issue a high volume of bonds. They used the proceeds to strengthen their balance sheets by repaying short-term debt obligations, refinancing other longer-term debt, and building up liquid assets. Junk bond issuance was also strong early in 2001, as speculative-grade yields fell in response to monetary policy easings, although investors shunned the riskiest issues amid increasing economic uncertainty and rising defaults among below-investment-grade borrowers.

The heavy pace of bond issuance, along with a reduced need to finance capital investments, enabled firms to decrease their business loans at banks and their commercial paper outstanding. The move out of commercial paper also reflected elevated credit spreads between high- and low-tier issuers resulting from the defaults of California utilities and several debt downgrades among prominent firms early in the year. Announcements of new equity share repurchase programs thinned considerably in the first half of the year, as firms sought to conserve their cash buffers in response to plummeting profits. A significant slowdown in cash-financed merger activity further damped equity retirements, although these retirements still outpaced gross equity issuance, which was restrained by falling share prices. Over the summer, issuance of investment-grade bonds dropped off appreciably. Moreover, market sentiment toward speculative-grade issues cooled, as further erosion in that sector's credit quality took its toll. Business loans and outstanding commercial paper continued to contract, and with share prices in the doldrums, nonfinancial firms raised only a small amount of funds in public equity markets in the third quarter.

The terrorist attacks on September 11 constricted corporate financing flows for a time. The stock market closed for that week, and trading in corporate bonds came to a virtual halt. After the shutdown of the stock market, the Securities and Exchange Commission, in an effort to ensure adequate liquidity, temporarily lifted some restrictions on firms' repurchases of their own shares. According to reports from dealers, this change triggered a spate of repurchases in the first few days after the stock markets reopened on September 17. When full-scale trading in corporate bonds resumed on September 17, credit spreads on corporate bonds widened sharply: Risk spreads on speculative-grade private debt soared to levels not seen since late 1991, and spreads on investment-grade corporate bonds also moved higher, although by a considerably smaller amount. Against this backdrop, junk bond issuance nearly dried up for the rest of the month. Commercial paper rates—even for top-tier issuers—jumped immediately after the attacks, as risk of payment delays increased. In response to elevated rates, some issuers tapped their backup lines at commercial banks, and business loans spiked in the weeks after the attacks. Risk spreads for low-tier borrowers in the commercial paper market remained elevated, even after market operations had largely recovered, because of ongoing concerns about credit quality and ratings downgrades among some high-profile issuers in the fall.

By early October, the investment-grade corporate bond market had largely recovered from the disruptions associated with the terrorist attacks, and bond issuance in that segment of the market picked up considerably. Firms capitalized on relatively low longer-term interest rates to pay down short-term obligations, to refinance existing higher-coupon debt, and to boost their holdings of liquid assets. With high-yield bond risk spreads receding moderately, issuance in the speculative-grade segment of the corporate bond market stirred somewhat from its moribund state, although investors remained highly selective. Public equity issuance, after stalling in September, also regained some ground in the fourth quarter, spurred by a rebound in stock prices. As was the case for most of the year, initial

Spreads of Corporate Bond Yields over the Ten-Year Swap Rate



NOTE. The data are daily and extend through February 21, 2002. The spreads compare the yields on the Merrill Lynch AA, BBB, and 175 indexes with the ten-year swap rate.

public offerings and venture capital financing remained at depressed levels.

Commercial paper issuance recovered somewhat early in the fourth quarter as firms repaid bank loans made in the immediate aftermath of the terrorist attacks and as credit spreads for lower-rated issuers started to narrow. However, the collapse of the Enron Corporation combined with typical year-end pressures to widen quality spreads in early December. All told, the volume of domestic nonfinancial commercial paper outstanding shrank by one-third over the year as a whole. Business loans at banks fell further in the fourth quarter; for the year, business loans contracted 4¼ percent, their first annual decline since 1993.

The slowing of sales and the drop in profits caused corporate credit quality to deteriorate noticeably last year. In part because of the decline in market interest rates, the ratio of net interest payments to cash flow in the nonfinancial corporate sector moved only modestly above the relatively low levels of recent years, and most firms did not experience significant difficulties servicing their debt. However, many firms were downgraded, and evidence of financial distress mounted over the course of the year. The twelve-month trailing average of the default rate on corporate bonds nearly tripled last year and by December ran almost ½ percentage point higher than its peak in 1991. Delinquency rates on business loans at banks also rose, although not nearly as dramatically. The amount of nonfinancial debt downgraded by Moody's Investors Service last year was more than five times the amount upgraded; downgrades were especially pronounced in the fourth quarter, when ratings agencies lowered debt ratings of firms in the telecommunication, energy, and auto sectors.

Default Rate on Outstanding Bonds

NOTE. The data are monthly; the series shown is a twelve-month moving average.

Commercial mortgage debt, supported by still-strong construction spending, expanded at a brisk 10 percent pace over the first half of 2001. The growth of commercial mortgage debt edged down only ½ percentage point in the second half, despite a sharp slowdown in business spending on nonresidential structures. As a result, the issuance of commercial-mortgage-backed securities (CMBS) maintained a robust pace throughout the year. Available data indicate some deterioration in the quality of commercial real estate credit. Delinquency rates on commercial real estate loans at banks rose steadily in 2001 and have started to edge out of their recent record-low range. In addition, CMBS delinquency rates increased, especially toward the end of the year, amid the rise in office vacancy rates. Despite the erosion in credit quality in commercial real estate and heavy issuance of CMBS, yield spreads on investment-grade CMBS over swap rates were about unchanged over the year, suggesting that investors view credit problems in this sector as being contained. Commercial banks, however, stiffened their lending posture in response to eroding prospects for the commercial real estate sector; significant net fractions of loan officers surveyed over the course of the year reported that their institutions had firmed standards on commercial real estate loans.

The Government Sector

Federal Government

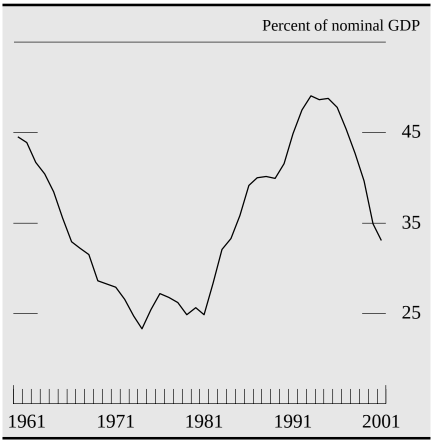
Deteriorating economic conditions and new fiscal initiatives have led to smaller federal budget surpluses than had been anticipated earlier. The fiscal 2001 surplus on a unified basis was $127 billion, or about 1¼ percent of GDP—well below both the record $236 billion surplus recorded in fiscal 2000 and the $281 billion surplus that the Congressional Budget Office had anticipated for fiscal 2001 at this time last year. Receipts, which had increased at least 6 percent in each of the preceding seven fiscal years, declined around 2 percent in fiscal 2001; the rise in individual tax receipts slowed dramatically and corporate receipts plunged 27 percent. The lower receipts reflected both the weakening economy—specifically, slow growth of personal income, the drop in corporate profits, and a pattern of declines in equity values that led to lower net capital gains realizations—and changes associated with the Economic Growth and Tax Relief Reconciliation Act of 2001. Some provisions of the act went into effect immediately, including the rebate checks that were mailed last summer. In addition, the act shifted some corporate tax payments into fiscal 2002.

Meanwhile, outlays were up 4 percent in fiscal 2001; abstracting from a decline in net interest payments, outlays increased nearly 6 percent, a second year of increases larger than had prevailed for some time. Outlays have increased across all major categories of expenditure, including defense, Medicare and Medicaid, and social security. As for the part of federal spending that is counted in GDP, real federal outlays for consumption and gross investment increased somewhat more rapidly than in recent years through the first three quarters of 2001 as defense expenditures picked up. Spending rose faster still in the fourth quarter because of increases for homeland security and the additional costs associated with the war in Afghanistan.

The existence of surpluses through fiscal 2001 meant that the federal government continued to contribute to the pool of national saving. Nevertheless, gross saving by households, businesses, and governments has been trending down over the past few years from the recent high of around 19 percent of GDP in 1998.

The Treasury used federal budget surpluses over the first half of the year to pay down its outstanding marketable debt. In the third quarter, however, the cut in personal income taxes and a weakening in receipts as the economy contracted led the Treasury to reenter the credit markets as a significant borrower of new funds. The Treasury's budget position swung back into surplus late in the year owing to somewhat stronger-than-expected tax receipts, which helped push fourth-quarter net borrowing below its third-quarter level. Despite the increase in the Treasury's net borrowing over the second half of the year, publicly held debt remained at only about one-third of nominal GDP last year, its lowest level since the mid-1980s and well below the 1993 peak of almost 50 percent.

Federal Government Debt
Held by the Public



NOTE. The data are as of the end of the fiscal year. Excludes debt held in federal government accounts and by the Federal Reserve System.

The terrorist attacks on September 11 and the associated disruptions to financial markets had some spillover effects on Treasury financing. On the day of the attacks, the Treasury cancelled its scheduled bill auction; over the next several days, it drew down nearly all of its compensating balances with commercial banks—about $12½ billion in total—to meet its obligations. On Thursday of that week, the settlement of securities sold the day before the attacks eased the Treasury's immediate cash squeeze, and the incoming stream of estimated quarterly personal income tax payments provided additional funds. Infrastructure problems involving the trading and clearing of Treasury securities were largely resolved over the following week, and when the Treasury resumed its regular bill issuance on September 17, exceptionally strong demand for bills pushed stop-out rates—that is, the highest yield accepted during the auction—to their lowest level since 1961. Although the Treasury cancelled debt buybacks scheduled for late September to conserve cash, it later announced that buyback operations would begin again in October.

With its credit needs still limited, the Treasury announced on October 31 that it was suspending issuance of nominal and inflation-indexed thirty-year securities. Subsequently, the thirty-year Treasury bond yield fell sharply, bid-asked spreads on outstanding bonds widened, and liquidity in the bond sector deteriorated. Although bid-asked spreads narrowed over the balance of the year, market participants reported that liquidity in the bond sector remained below its level before the Treasury's announcement. The announcement on October 31 also indicated that after the January 2002 buyback operations, the Treasury would determine the amount and timing of buybacks on a quarter-by-quarter basis, thereby fueling speculation that future buybacks might be scaled back in light of the changed budget outlook.

State and Local Governments

Real expenditures for consumption and gross investment by states and localities rose 5 percent last year after an increase of 2½ percent in 2000. Much of the acceleration reflected a burst of spending on construction of schools and other infrastructure needs. In addition, outlays at the end of last year were boosted by the cleanup from the September 11 attacks in New York. As for employment, state and local governments added jobs in 2001 at a more rapid pace than they did over the previous year and thereby helped to offset job losses in the private sector.

The fiscal condition of state and local governments has been strained by the deterioration in economic performance. State governments are considering a variety of actions to achieve budget balance in the current fiscal year. Most states are intending to cut planned expenditures, and many are considering drawing down rainy-day funds, which governments had built up in earlier years. According to the National Conference of State Legislators, these rainy-day funds stood at the relatively high level of $23 billion at the end of fiscal 2001 (June 30). Moreover, some states that had planned to fund capital expenditures with current receipts appear to be shifting to debt financing. Finally, a few states are considering actions such as postponing tax cuts that were enacted earlier.

Debt of the state and local government sector expanded rapidly last year after slow growth in 2000. Gross issuance of long-term municipal bonds accelerated over the first half of 2001 as state and local governments took advantage of lower yields to refund outstanding debt. Spurred by falling interest rates and declining tax revenues, these governments continued to issue long-term bonds to finance new capital projects at a rapid clip over the second half of the year. Despite a deterioration in tax receipts, credit quality in the municipal market remained high in 2001. Late in the year, however, signs of weakness had emerged, as the pace of net credit-ratings upgrades slowed noticeably. Especially significant problems continue to plague California and New York, both of which saw their debt ratings lowered in November. In California, the problems were attributed to declining tax revenues and difficulties related to the state's electricity crisis earlier in the year, while New York's slip in credit quality resulted not only from deteriorating tax receipts but also from fears of higher-than-expected costs related to clean up and rebuilding after the terrorist attacks.

The External Sector

Trade and the Current Account

The U.S. current account deficit narrowed significantly during 2001, with both imports and exports of goods and services falling sharply in response to a global weakening of economic activity. The deficit in goods and services narrowed to $333 billion at an annual rate in the fourth quarter of 2001 from $401 billion at the end of the previous year. In addition, the deficit was temporarily reduced further in the third quarter because service import payments were lowered by a large one-time estimated insurance payment from foreign insurers (reported on an accrual basis) related to the events of September 11.[1] Excluding the estimated insurance figure, the current account deficit was $434 billion at an annual rate over the first three quarters of the year, or 4¼ percent of GDP, compared with $445 billion and 4½ percent for the year 2000. Net investment income payments were about the same during the first three quarters of 2001 as in the corresponding period a year earlier; higher net payments on our growing net portfolio liability position were offset by higher net direct investment receipts.

U.S. real exports were hit by slower growth abroad, continued appreciation of the dollar, and plunging global

1. The "insurance payment" component of imported services is calculated as the value of premiums paid to foreign companies less the amount of losses recovered from foreign companies. In the third quarter, the estimated size of losses recovered far exceeded the amount paid for insurance premiums, resulting in a negative recorded insurance payment. According to NIPA accounting, the entire amount of a recovery is recorded in the quarter in which the incident occurred.

demand for high-tech products. Real exports of goods and services fell 11 percent over the four quarters of 2001, with double-digit declines beginning in the second quarter. Service receipts decreased 7 percent; all of the decline came after the events of September 11. Receipts from travel and passenger fares, which plunged following the terrorist attacks, were about one-fourth lower in the fourth quarter than in the second quarter. Receipts from foreigners for other services changed little over the year. Exports declined in almost all major goods categories, with the largest drops by far in high-tech capital goods and other machinery. Two exceptions were exports of automotive products, which rose during the second and third quarters (largely parts to Canada and Mexico destined ultimately for use in U.S. markets, and vehicles to Canada), and agricultural goods. About 45 percent of U.S. exports of goods were capital equipment; 20 percent were industrial supplies; and 5 percent to 10 percent each were agricultural, automotive, consumer, and other goods. The value of exported goods declined at double-digit rates for almost all major market destinations. Even exports to Canada and Mexico declined sharply, despite support from two-way trade with the United States in such sectors as automotive products.

As growth of the U.S. economy slowed noticeably, real imports of goods and services turned down and declined 8 percent for 2001 as a whole. Service payments dropped 15 percent last year. The plunge in outlays for travel and passenger fares after September 11 held down total real service payments, bringing their level in the fourth quarter 15 percent below that in the second quarter. Spending on services other than travel and passenger fares changed little during the year.[2] Imported goods fell 6 percent last year, with much of the decrease in capital goods (computers, semiconductors, and other machinery). In contrast, real imports of automotive products, consumer goods, oil, and other industrial supplies were little changed, and imports of foods rose. The pattern of import growth appears to have shifted toward the end of the year. Imports of real non-oil goods declined at about a 10 percent annual rate during the first three quarters of the year but fell less rapidly in the fourth quarter. The price of imported non-oil goods, after rising in the first quarter, declined at an annual rate of about 6 percent from the second quarter through the fourth quarter, led by decreases in the price of imported industrial supplies.

The value of imported oil fell more than one-third over the four quarters of 2001, a drop resulting almost entirely from a sharp decline in oil prices. The spot price of West Texas intermediate (WTI) crude decreased about $10 per barrel during the year, with much of the decline occurring after September 11. During the first eight months of 2001, the spot price of WTI averaged $28 per barrel as weakened demand for oil and increased non-OPEC supply were largely offset by OPEC production restraint. In the wake of the terrorist attacks, oil prices dropped sharply in response to a decline in jet fuel consumption, weaker economic activity, and reassurance from Saudi Arabia that supply would be forthcoming. Oil prices continued to drift lower during the

2. According to NIPA accounting, the value of the one-time insurance payments by foreign insurers is not reflected in NIPA real imports of services. The deflator for service imports was adjusted down for the third quarter to offset the lower value of service imports; the deflator returned to its usual value in the fourth quarter.

fourth quarter, reflecting OPEC's apparent unwillingness to continue to sacrifice market share in order to defend higher oil prices. In late December, however, OPEC worked out an arrangement in which it agreed to reduce its production targets an additional 1.5 million barrels per day, contingent on the pledges from several non-OPEC producers (Angola, Mexico, Norway, Oman, and Russia) to reduce oil exports a total of 462,500 barrels per day. Given the uncertainty over the extent to which these reductions will actually be implemented and the comfortable level of oil inventories, the spot price of WTI remained near $20 per barrel in early 2002.

Financial Account

The slowing of U.S. and foreign economic growth over the course of last year had noticeable effects on the composition of U.S. capital flows, especially when the slowing became more pronounced in the second half. On balance, net private capital flowed in at a pace only slightly below the record set in 2000, including unprecedented net inflows through private securities transactions.

During the first half of 2001, sagging stock prices and signs of slower growth brought a shift in the types of U.S. securities demanded by private foreigners but did not reduce the overall demand for them. Indeed, during the first half, foreign private purchases of U.S. securities averaged $137 billion per quarter, a rate well above the record $109 billion pace set in 2000. A slowing of foreign purchases of U.S. equities, relative to 2000, was more than offset by a pickup in foreign purchases of corporate and agency bonds. In addition, private foreigners, who had sold a significant quantity of Treasury securities during 2000, roughly halted their sales in the first half of 2001. The increased capital inflows arising from larger foreign purchases of U.S. securities in the first half was only partly offset by an increase in the pace at which U.S. residents acquired foreign securities, especially equities.

The pattern of private securities transactions changed significantly in the third quarter: Foreign purchases of U.S. equities slowed markedly, and U.S. investors shifted from net purchases of foreign securities to net sales. However, the reduced flows in the third quarter seem to have reflected short-lived reactions to events in the quarter. Preliminary data for the fourth quarter show a significant bounceback in foreign purchases of U.S. securities and a return to purchases of foreign securities by U.S. residents.

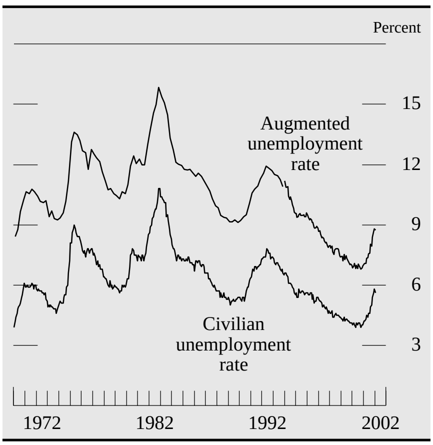
The changing economic climate also affected direct investment capital flows. During 2000, foreign direct investment in the United States averaged more than $70 billion per quarter. These flows slowed to less than $60 billion per quarter in the first half and then dropped to only $26 billion in the third quarter (the last available data). The drop resulted in part from a decline in the outlook for corporate profits and a significant reduction in general merger and acquisition activity. By contrast, U.S. direct investment abroad picked up over the course of 2001. The third quarter outflow of $52 billion—a record—reflected both a large merger and robust retained earnings by the foreign affiliates of U.S. firms. Capital inflows from official sources were relatively modest in 2001, totaling only $15 billion, compared with $36 billion in 2000.

The Labor Market

Employment and Unemployment

Last year's weakening in economic activity took its toll on the labor market. Payroll employment edged up early last year and then dropped nearly 1½ million by January 2002. Declines were particularly large in manufacturing, which has shed one in twelve jobs since mid-2000. Job cuts accelerated in the months following the terrorist attacks of September 11, with declines occurring in a wide variety of industries. The unemployment rate moved up from 4 percent in late 2000 to 5.8 percent by December 2001. In January 2002, the unemployment rate edged down to 5.6 percent.

Measures of Labor Utilization



NOTE. The data extend through January 2002. The augmented umemployment rate is the number of unemployed plus those who are not in the labor force and want a job, divided by the civilian labor force plus those who are not in the labor force and want a job. In January 1994, a redesigned survey was introduced; data for the augmented rate from that point on are not directly comparable with those of earlier periods. For the augmented rate, the data are quarterly through December 1993 and monthly thereafter; for the civilian labor force rate, the data are monthly.

Early last year, employment in manufacturing, which had been trending down for several years, began to decline more rapidly. Job losses were widespread within the manufacturing sector but were most pronounced in durable-goods industries, such as those producing electrical and industrial machinery and metals. Employment at help supply firms and in wholesale trade—industries that are directly related to manufacturing—also began to decline. Outside of manufacturing and its related industries, private payrolls continued to increase robustly in the first quarter of last year, but hiring then slowed, although it remained positive, on net, in the second and third quarters. Construction payrolls increased into the spring but flattened out thereafter. Employment at retail trade establishments also continued to increase moderately through the spring but began to decline in the late summer. In services industries other than help supply firms—a broad group that accounted for nearly half of the private payroll increases over the preceding several years—job gains slowed but remained positive in the second and third quarters of last year. In all, private payroll employment declined about 115,000 per month in the second and third quarters, and the unemployment rate moved up steadily to 4½ percent by the spring and to nearly 5 percent by August.

The labor market was especially hard hit by the terrorist attacks. Although labor demand was weak prior to the attacks, the situation turned far worse following the events of September 11, and private payrolls plunged more than 400,000 per month on average in October and November. Employment fell substantially not only in manufacturing and in industries directly affected by the attacks, such as air transportation, hotels, and restaurants, but also in a wide variety of other industries such as construction and much of the retail sector.

Employment continued to decline in December and January but much less than in the preceding two months. Manufacturing and its related industries lost jobs at a slower pace, and employment leveled off in other private industries. The unemployment rate moved up to 5.8 percent in December but then ticked down to 5.6 percent in January. The recent reversal of the October and November spikes in new claims for unemployment insurance and in the level of insured unemployment also point to some improvement in labor market conditions early this year.

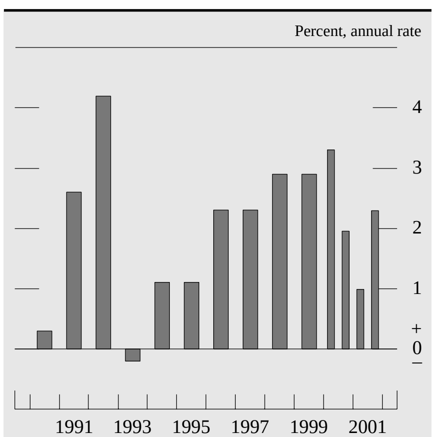
Productivity and Labor Costs

Given economic conditions, growth of labor productivity was impressive in 2001. Productivity growth typically drops when the economy softens, partly because businesses tend not to shed workers in proportion to reduced demand. Last year, however, output per hour in the nonfarm business sector increased a relatively solid 1½ percent, according to the advance estimate, after having risen 2½ percent in 2000—a mild deceleration by past cyclical standards. Indeed, productivity is estimated to have increased at an annual rate of more than 2 percent in the second half of the year, an impressive performance during a period when real GDP was, on net, contracting. The buoyancy of productivity during 2001 provides further support to the view that the underlying trend of productivity growth has stepped up notably in recent years.

Hourly labor compensation costs increased more slowly last year than in 2000, although different compensation measures paint different pictures of the magnitude of that deceleration. The slowing likely reflected the influence of the soft labor market, energy-driven declines in price inflation toward the latter part of the year, and subdued inflation expectations. Compensation probably was also held down by a reduction in variable pay, such as bonuses that are tied to company performance and stock-option activity.

According to the employment cost index, hourly compensation costs increased 4¼ percent during 2001, down from a 4½ percent increase in 2000; both the wages and salaries and benefits components recorded slightly smaller increases. The deceleration in the index for wages and salaries was concentrated among sales workers, whose wages often include a substantial commission component and so are especially sensitive to cyclical developments. Although the increase in employers' cost of benefits slowed overall, the cost of providing health insurance increased more than 9 percent last year; the rise continued this component's accelerating contribution to labor costs over the past few years after a period

Change in Output per Hour



NOTE. Nonfarm business sector.

of restrained cost increases in the mid-1990s.

An alternative measure of hourly compensation is the BLS's measure of compensation per hour in the nonfarm business sector, which is derived from compensation information in the national accounts; this measure increased 4 percent last year, a very large drop from the 7¾ percent increase registered in 2000. One reason that these two compensation measures may diverge is that only nonfarm compensation per hour captures the cost of stock options. Although the two compensation measures differ in numerous other respects as well, the much sharper deceleration in nonfarm compensation per hour may indicate that stock option exercises leveled off or declined in 2001 in response to the fall in equity values. However, because nonfarm compensation per hour can be revised substantially, one must be cautious in interpreting the most recent quarterly figures from this series.

Unit labor costs, the ratio of hourly compensation to output per hour in the nonfarm business sector, increased about 2 percent last year. Although down from a huge 5 percent increase in 2000 that reflected that year's surge in nonfarm compensation per hour, the figure for 2001 is still a little higher than the moderate increases seen over the preceding several years. Last year's increase in unit labor costs was held up by the smaller productivity increases that accompanied weak economic activity; accordingly, subsequent increases in unit labor costs would be held down if output per hour begins to increase more rapidly as the economy strengthens.

Prices

Inflation declined in 2001 largely because of a steep drop in energy prices. The chain-type price index for personal consumption expenditures (PCE) increased 1.3 percent last year after having increased 2.6 percent in 2000; the turnaround in consumer energy prices accounted for almost all of that deceleration. Increases in PCE prices excluding food and energy items also slowed a little last year after having moved up in 2000. The chain-type price index for gross domestic purchases—the broadest price measure for domestically *purchased* goods and services—decelerated considerably last year. The small increase in this index reflected both the drop in energy prices and a resumption of rapid declines for prices of investment goods, especially computers, following a period of unusual firmness in 2000. The price index for GDP—the broadest price measure for domestically *produced* goods and services—posted a smaller deceleration of about ½ percentage point between 2000 and 2001 because lower oil prices have a smaller weight in U.S. production than in U.S. purchases.

Consumer energy prices continued to move higher through the early months of 2001 before turning down sharply in the second half of the year. Despite the fact that crude oil prices were declining

Alternative Measures of Price Change

Percent

Price measure	2000	2001
Chain-type		
Gross domestic product	2.4	1.8
Gross domestic purchases	2.5	1.1
Personal consumption expenditures	2.6	1.3
Excluding food and energy	1.9	1.6
Fixed-weight		
Consumer price index	3.4	1.9
Excluding food and energy	2.5	2.7

NOTE. Changes are based on quarterly averages and are measured to the fourth quarter of the year indicated from the fourth quarter of the preceding year.

over the first half of the year, retail gasoline prices increased at an annual rate of 8 percent during that period. The sizable increase in margins on gasoline reflected both refinery disruptions and low inventory levels going into the summer driving season. But gasoline prices fell sharply thereafter as refineries came back on line, imports of gasoline picked up, and crude oil prices moved considerably lower over the latter half of the year. In all, gasoline prices were down 19 percent over the year as a whole. Heating oil prices reflected crude oil developments more directly and declined sharply through most of the year. Meanwhile, spot prices of natural gas peaked in January 2001 at the extraordinarily high level of nearly $10 per million BTUs, and prices at the consumer level continued to surge in the first few months of the year. These increases reflected the pressure from ongoing strength in demand coupled with unusually cold weather early last winter that left stocks at very low levels. But the situation improved as expanded supply allowed stocks to be replenished: Spot prices reversed those earlier increases, and prices of consumer natural gas declined substantially through the rest of the year.

In contrast, electricity prices rose through most of last year. The increases reflected the effects of the earlier rises in the prices of natural gas and coal on fuel costs of utilities as well as problems with electricity generation in California. California was able to avoid serious power disruptions last summer because high electricity prices, weak economic activity, and moderate weather all helped keep demand in check.

Consumer food prices increased more rapidly last year, rising about 3 percent after having risen only 2½ percent in 2000. Early in the year, strong demand, both domestic and foreign, led to large increases in livestock prices—especially beef. But these prices softened later in the year under the influence of higher supplies, lower domestic demand, and foreign outbreaks of mad cow disease, which apparently damped demand for beef no matter where produced.

Excluding food and energy items, PCE prices rose 1.6 percent last year, a small deceleration from its 1.9 percent increase over 2000. That deceleration was concentrated in prices of goods, with prices especially soft for motor vehicles and apparel. By contrast, prices of many services continued to accelerate last year. In particular, shelter costs—which include residential rent, the imputed rent of owner-occupied housing, and hotel and motel prices—increased 4¼ percent last year after having risen 3½ percent in 2000.

Standing somewhat in contrast to the small deceleration in core PCE prices, the core consumer price index (CPI) increased 2¾ percent last year, about the same rate as in 2000. Although components of the CPI are key inputs of the PCE price index, the two price measures differ in a variety of ways. One important difference is that the PCE measure is broader in scope; it includes expenditures made by nonprofit institutions and consumption of items such as checking services that banks provide without explicit charge. Prices for the PCE categories that are outside the scope of the CPI decelerated notably in 2001 and accounted for much of the differential movements of inflation measured by the two price indexes. Another difference is that the CPI places a larger weight on housing than does the PCE price index, and last year's acceleration of housing prices therefore boosted the CPI relative to the PCE measure.

The leveling off or decline in core consumer price inflation reflects a variety of factors, including the weakening of economic activity and the accompanying slackening of resource utilization; the decline in energy prices that reduced firms' costs; and continuing intense competitive pressures in product markets. These factors also likely helped to reduce inflation expectations late last year, and this reduction itself may be contributing to lower inflation. According to the Michigan SRC, median one-year inflation expectations, which had held near 3 percent through 2000 and into last summer, moved down to 2¾ percent in the third quarter and plummeted to 1 percent or lower in October and November. Falling energy prices and widespread reports of discounting following the September 11 attacks likely played a role in causing this sharp break in expectations. Part of this drop was reversed in December, and since then, inflation expectations have remained around 2 percent—a rate still well below the levels that had prevailed earlier. Meanwhile, the Michigan SRC's measure of longer-term inflation expectations, which had also remained close to 3 percent through 2000 and the first half of 2001, ticked down to 2¾ percent in October and stood at that level early this year.

U.S. Financial Markets

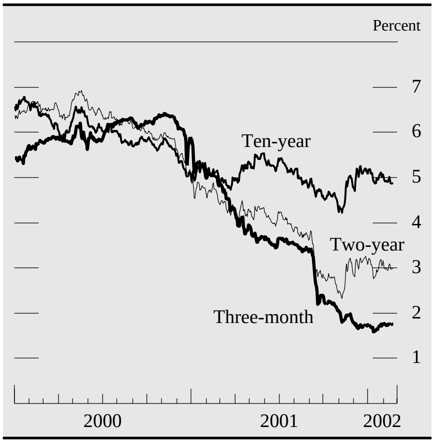
As a consequence of the Federal Reserve's aggressive easing of the stance of monetary policy in 2001, interest rates on short- and intermediate-term Treasury securities fell substantially over the course of the year. Longer-term Treasury bond yields, however, ended the year about unchanged, on balance. These rates had already fallen appreciably in late 2000 in anticipation of monetary policy easing. They may also have been held up last year by an increased likelihood of federal budget deficits and, except in the immediate aftermath of the terrorist attacks, by investors' optimism about future economic prospects. Despite this optimism, the slowdown in final demand, a slump in corporate earnings, and a marked deterioration in credit quality of businesses in a number of sectors made investors more wary about risk. Although interest rates on higher-rated investment- grade corporate bonds generally moved in line with those on comparably dated government securities, lower-rated firms found credit to be considerably more expensive, as risk spreads on speculative-grade debt soared for most of the year before narrowing somewhat over the last few months. Interest rates on commercial paper and business loans fell last year by about as much as the federal funds rate, but risk spreads generally remained in the elevated range. In addition, commercial banks tightened standards and terms for business borrowers throughout the year. Equity prices were exceptionally volatile and fell further, on balance, in 2001.

Increased caution on the part of lenders did not appear to materially damp aggregate credit flows. Private borrowing was robust last year, especially when compared with the marked slowing in nominal spending. Relatively low long-term interest rates encouraged both businesses and households to concentrate borrowing in longer-term instruments, thereby locking in lower debt-service obligations. The proceeds of long-term borrowing were also used to strengthen balance sheets by building stocks of liquid assets. A shift toward safer and more liquid asset holdings showed through in rapid growth of M2, which was spurred further by reduced short-term market interest rates and elevated stock market volatility.

Interest Rates

Short-term market interest rates moved down with the FOMC's cumulative cut in the target federal funds rate of 4¾ percentage points, and yields on intermediate-term Treasury securities declined almost 2 percentage points. Longer-term interest rates had already fallen in the latter part of 2000, when investors began to anticipate significant policy easing in response to weakening economic growth. As the FOMC aggressively eased the stance of monetary policy during the winter and spring, investors' expectations of a prompt revival in economic activity took hold and were manifested in a sharp upward tilt of money market futures rates and an appreciable rise in longer-term interest rates over the second quarter. However, signs of the anticipated economic turnaround failed to materialize as the summer progressed. Indeed, the weakening in economic activity was becoming more widespread, which prompted expectations of further monetary policy easing over the near term, and longer-term interest rates turned down again.

Rates on Selected Treasury Securities



NOTE. The data are daily and extend through February 21, 2002.

The terrorist attacks of September 11 dramatically redrew the picture of the nation's near-term economic prospects. Market participants lowered markedly their expected trajectory for the path of the federal funds rate in the immediate aftermath of the attacks, and revisions to policy expectations, combined with considerable flight-to-safety demands, cut short- and intermediate-term Treasury yields substantially over subsequent days. The FOMC, confronted with evidence of additional weakness in final demand and prices, eased policy further over the balance of the year, and short-term market interest rates continued to decline. In early November, however, intermediate- and long-term interest rates turned up, as it became apparent that the economic fallout from the attacks would be more limited than some had originally feared, and as military success in Afghanistan bolstered investors' confidence and moderated safe-haven demands. By the end of the year, yields on intermediate-term Treasury securities had reversed about half of their post–September 11 decline, while yields on longer-term Treasury securities had risen enough to top their pre-attack levels. In early 2002, however, yields on intermediate- and longer-term Treasuries edged down again, as market participants trimmed their expectations for the strength of the economic rebound, and the Congress failed to move forward with additional fiscal stimulus.

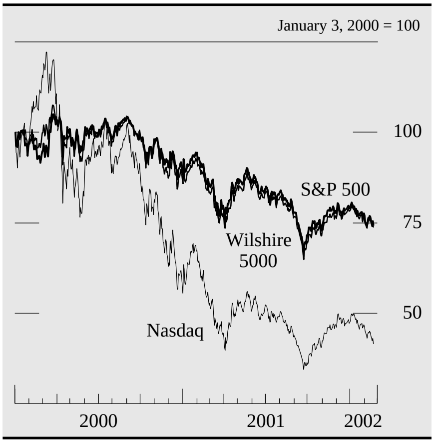
Yields on higher quality investment-grade corporate bonds generally followed those on comparably dated Treasury securities last year, although risk spreads widened moderately before narrowing over the last few months. In contrast, interest rates on speculative-grade corporate debt increased steadily in 2001, as risk spreads ballooned in response to mounting signs of financial distress among weaker firms. Even with a considerable narrowing over the final two months of the year, risk spreads on below-investment-grade bonds remained quite wide. Spreads for high-yield bonds edged down further in 2002 after rising sharply in early January, when several important technology and telecommunications companies revised down their earnings forecasts or released corrections to past earnings statements. Interest rates on commercial and industrial (C&I) loans at banks fell last year by about as much as the federal funds rate. According to the Federal Reserve's quarterly Survey of Terms of Business Lending, the spread over the target federal funds rate of the average interest rate on C&I loans varied somewhat over the year, falling for a while then rising sharply between August and November; nonetheless, it has generally remained in the elevated range that has persisted since late 1998. The same survey also indicated that over the course of last year commercial banks, like other lenders, have become especially cautious about lending to marginal credits, as indicated by the average spread on riskier C&I loans not made under a previous commitment, which soared in 2001.

Equity Markets

The exceptional volatility of equity prices in 2001 likely reflected the dramatic fluctuations in investors' assessment of the outlook for the economy and corporate earnings. Share prices tumbled early last year, as pessimism and uncertainty about the direction of the economy were intensified by a spate of negative earnings announcements and profit warnings in February and March. The pronounced sell-off of equities came to a halt at the end of the first quarter, with the Wilshire 5000—a very broad index of stock prices—down about 13 percent, while the tech-heavy Nasdaq ended the first quarter at its lowest level since 1998 and more than 60 percent below its record high reached in March of 2000.

Companies, especially in the technology sector, reported weak profits for the first quarter, but their announcements generally surpassed analysts' sharply lowered expectations. With the 1 percentage point reduction in the federal funds rate over March and April, investors became more confident that an improvement in economic conditions was in train, and equity prices rallied; the rebound was particularly strong for technology companies—the Nasdaq rose almost 40 percent between April and the end of May. The forward momentum in equity markets was checked in June, however, in part because analysts slashed their estimates for near-term corporate earnings growth. Although the stock market initially proved resilient in the face of the bleak

Major Stock Price Indexes



NOTE. The data are daily and extend through February 21, 2002.

profit news, suggesting that weak earnings had been largely anticipated by investors, the steady barrage of dismal economic news—particularly in the technology and telecommunications sectors—started to exert downward pressure on share prices by early August. The slide in stock prices intensified in early September, with technology stocks taking an exceptional drubbing. By September 10, the Wilshire 5000 was down almost 10 percent from the end of July, while the Nasdaq had lost more than 16 percent.

The attacks on September 11, a Tuesday, caused stock markets to shut down and to remain closed for the rest of that week. Trading resumed in an orderly fashion on Monday, September 17, but the day ended with the market as a whole down about 5 percent—with airline and hotel stocks pounded most—and trading volume on the New York Stock Exchange hitting a record high. Major stock price indexes, which sagged further in subsequent days and weeks, were weighed down by investors' more pessimistic evaluation of the near-term economic outlook and by sizable downward revisions to analysts' earnings projections for the rest of 2001. By the third week of the month, broad stock price indexes had fallen a total of 12 percent from their levels on September 10.

In late September, stock prices staged a comeback that lasted through the fourth quarter, as incoming information suggested that the economy had proven remarkably resilient and economic prospects were improving. On the perception that the worst for the technology sector would soon pass, share prices of firms in technology industries jumped sharply, lifting the Nasdaq more than 35 percent from its September nadir. On balance, last year's gyrations in stock prices left the Wilshire 5000 down about 10 percent, while the Nasdaq fell 20 percent. The widespread decline in equity prices through the first three quarters of 2001 is estimated to have wiped out nearly $3½ trillion in household wealth, translating into 8¼ percent of total household net worth. Of this total, however, about $1¼ trillion was restored by the stock market rally in the fourth quarter. Moreover, the level of household net worth at the end of last year was still almost 50 percent higher than it was at the end of 1995, when stepped-up productivity gains had begun to induce investors to boost significantly their expectations of long-term earnings growth. In January and early February of 2002, investors reacted to generally disappointing news about expected earnings, especially in the telecommunications sector, and to concerns about corporate accounting practices by erasing some of the fourth-quarter gain in equity prices. Despite this decline, the price-earnings ratio for the S&P 500 index (calculated using operating earnings expected over the next year) remained close to its level at the beginning of 2001. The relatively elevated ratio reflected lower market interest rates as well as investor anticipation of a return to robust earnings growth.

Debt and Depository Intermediation

The growth of the debt of nonfederal sectors was strong over the first half of the year, as the decline in longer-term interest rates during the final months of 2000 prompted some opportunistic tapping of bond markets by businesses and helped keep the expansion of household credit brisk. However, the combination of a stepdown in the growth of consumer durables purchases, a further drop in capital expenditures, and a substantial inventory liquidation over the second half of the year resulted in a significantly slower pace of private borrowing. On balance, growth of nonfederal debt retreated about 1 percentage point in 2001, to 7½ percent. Federal debt continued to contract early last year; it then turned up as the budget fell into a deficit reflecting the implementation of the tax cut, the effect of the weaker economy on tax receipts, and emergency spending in the wake of the terrorist attacks. As a result, the federal government paid down only 1¼ percent of its debt, on net, over 2001, compared with 6¾ percent in the previous year. With nominal GDP decelerating sharply, the ratio of nonfinancial debt to GDP moved up notably in 2001, more than reversing its decrease in the previous year.

The economic slowdown and the decline in market interest rates last year left a noticeable imprint on the composition of financial flows, with borrowing by businesses and households migrating toward longer-term bond and mortgage markets. As a consequence, credit at depository institutions expanded sluggishly over the year. Growth of loans at commercial banks dropped off sharply, from 12 percent in 2000 to 2¼ percent in 2001. The slowdown in total bank credit—after adjustments for mark-to-market accounting rules—was less severe, because banks acquired securities, largely mortgage-backed securities, at a brisk pace throughout the year. A healthy banking sector served as an important safety valve for several weeks after September 11, as businesses tapped backup lines of credit to overcome problems associated with the repayment of maturing commercial paper and issuance of new paper. Moreover, with payment flows temporarily interrupted by the terrorist attacks, a substantial volume of overdrafts was created, causing a spike in the "other" loan category that includes loans to depository institutions. By the end of October, however, the disruptions to business financing patterns and payment systems that bloated bank balance sheets had largely dissipated, and loans contracted sharply.

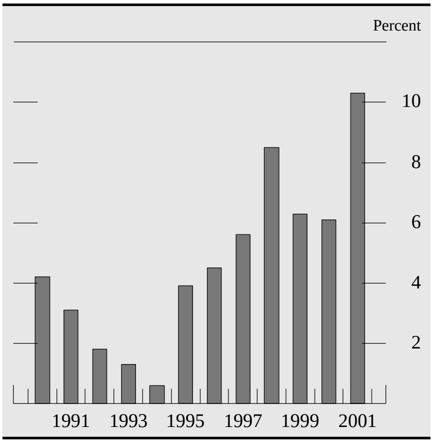
Commercial banks reported a marked deterioration in loan performance last year. Delinquency and charge-off rates on C&I loans trended up appreciably, although they remained well below rates recorded during the 1990-91 recession. Delinquency rates on credit card accounts increased for the second year in a row, reaching 5 percent for the first time since early 1992. Banks responded to the deteriorating business and household balance sheets by tightening credit standards and terms for both types of loan, according to the Federal Reserve's Senior Loan Officer Opinion Survey on Bank Lending Practices. Banks indicated that they had tightened business lending policies in response to greater uncertainty about the economic outlook and their reduced tolerance for risk. Similarly, the net fractions of banks reporting that they had tightened standards for both credit card and other consumer loans rose markedly over the first half of last year. As household financial conditions continued to slip, the net proportion of banks that tightened standards on consumer loans remained at an elevated level in the second half of the year.

In response to rising levels of delinquent and charged-off loans, commercial banks significantly boosted the rate of provisioning for loan losses last year, which, along with reduced income from capital market activities, cut into the banking sector's profits. Nonetheless, through the third quarter of 2001—the latest period for which Call Report data are available—measures of industry profitability remained near the elevated range recorded for the past several years, and banks continued to hold substantial capital to absorb losses. Indeed, virtually all assets were at well-capitalized banks at the end of the third quarter, and the substitution of securities for loans on banks' balance sheets also helped edge up risk-based capital ratios. In the fourth quarter, a number of large banks saw their profits decline further because of their exposure to Enron and, to a lesser extent, Argentina. On the positive side, wider net interest margins helped support profits throughout 2001.

The Monetary Aggregates

The broad monetary aggregates grew very rapidly in 2001. Over the four quarters of the year, M2 increased 10¼ percent, a rate significantly above the pace of the past several years. Because the rates of return provided by many components of M2 move sluggishly, the swift decline in short-term market interest rates last year significantly lowered the opportunity cost of holding M2 assets, especially for its liquid deposits (the sum of checking and savings accounts) and retail money funds components. Moreover, negative returns and elevated volatility in equity markets likely raised household demand for M2 assets through the fall. An unprecedented level of mortgage refinancing activity (which results in prepayments that temporarily accumulate in deposit accounts before being distributed to investors in mortgage-backed securities), as well as increased foreign demand for U.S. currency, also bolstered the growth of M2 over the course of the year.

M2 Growth Rate



NOTE. M2 consists of currency, travelers checks, demand deposits, other checkable deposits, savings deposits (including money market deposit accounts), small-denomination time deposits, and balances in retail money market funds. Annual growth rates are computed from fourth-quarter averages.

Involuntary accumulation of liquid deposits resulting from payment system disruptions after the terrorist attacks, combined with elevated safe-haven demands, caused M2 to surge temporarily in the weeks following September 11. At the same time, plunging equity prices led to a sharp step-up in the growth of retail money market mutual funds. After a substantial unwinding of distortions to money flows in October, M2 growth over the balance of the year was spurred by further declines in its opportunity cost resulting from additional monetary policy easings and by heightened volatility in equity markets. The hefty advance in M2 last year outpaced the anemic expansion of nominal income, and M2 velocity—the ratio of nominal GDP to M2—posted a record decline.

M3—the broadest monetary aggregate—grew 13 percent over 2001. In addition to the surge in its M2 component, huge inflows into institutional money funds boosted M3 growth. Investors' appetite for these instruments was enormous last year because their returns were unusually attractive as they lagged the steep decline in market interest rates. The slow-down in the growth of bank credit over the summer, which resulted in a contraction in managed liabilities, damped the rise in M3 somewhat. The velocity of M3 dropped for the seventh year in the row, to a record low.

International Developments

Economic activity in foreign economies weakened substantially in 2001. Early in the year, activity abroad was depressed by high oil prices, the global slump in the high-tech sector, and spillover from the U.S. economic slowdown. The September terrorist attacks further heightened economic uncertainty. On average, foreign economic activity was about flat over the year. The weakest performer among industrial economies was Japan, where output declined. The euro area eked out a slight increase in its real GDP. Activity in most emerging market economies in both Asia and Latin America declined. Asian developing economies were particularly hard hit by the falloff in demand for their high-tech exports. In Latin America, the output decline in Mexico largely reflected sharply reduced export demand from the United States; Argentina's financial crisis precipitated a further sharp drop in output in that country. An easing of average foreign inflation reflected the weakness of activity as well as a net decline in global oil prices over the course of the year.

In response to the pronounced weakness in economic activity, monetary authorities in the major industrial countries eased policy throughout the year. Nevertheless, interest rates on long-term government securities showed little net change from the beginning to the end of the year in most major industrial countries. Weak economic conditions tended to put downward pressure on long-term rates, but moves toward more stimulative macroeconomic policies appeared to encourage market participants to expect economic recovery, thereby supporting long-term interest rates. Following the terrorist attacks in September, interest rates declined around the globe as expected economic activity weakened and demand shifted away from equities and toward the relative safety of bonds. However, toward year-end, as the period of crisis passed, long-term interest rates rebounded strongly.

Overall stock indexes in foreign industrial economies declined for the second consecutive year as activity faltered and actual and projected corporate earnings fell sharply. Technology-oriented stock indexes again fell more than the overall indexes. Among emerging market economies, the performance of stocks was mixed; stock indexes in several Asian emerging market economies rebounded strongly late in the year, a move possibly reflecting market participants' hopes for a revival in global demand for the high technology products that feature prominently in these countries' exports. Argentine financial markets came under increasing pressure

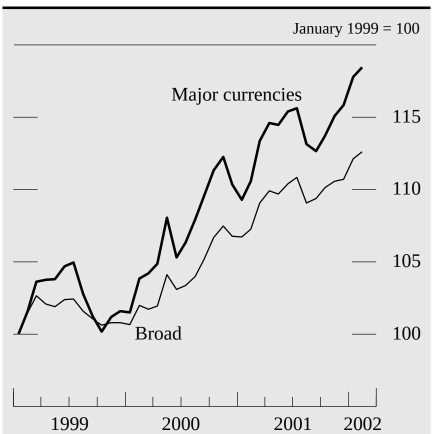
Foreign Equity Indexes

NOTE. The data are monthly. The last observations are the average of trading days through February 21, 2002.

throughout the year because of growing fears of a debt default and the end of the peso's peg to the dollar. Near year-end, Argentine authorities in fact suspended debt payments to the private sector and, early in 2002, ended the one-to-one peg to the dollar. There was limited negative spillover to other emerging financial markets from the sharp deterioration in Argentina's economic and financial condition, in contrast to the situation that prevailed during other emerging market financial crises of recent years.

The dollar's average foreign exchange value remained strong through most of 2001. The dollar continued to rise despite mounting evidence of weakening U.S. economic activity and the significant easing of monetary policy by the FOMC. Market participants may have felt that the falloff in economic growth in foreign economies and expectations that the United States offered stronger prospects for economic growth in the future outweighed disappointing U.S. economic performance in the near term. The dollar's average foreign exchange value against the currencies of other major industrial countries recorded a net increase of 8 percent over 2001 as a whole. The dollar also strengthened, but by a lesser amount, against the currencies of our most important developing country trading partners. So far this year, the dollar's average value has risen further on balance.

Nominal U.S. Dollar Exchange Rate Indexes



NOTE. The data are monthly. Indexes are trade-weighted averages of the exchange value of the dollar against major currencies and against the currencies of a broader group of important U.S. trading partners. Last observations are the average of trading days through February 21, 2002.

Industrial Economies

The dollar showed particular strength against the Japanese yen last year, appreciating nearly 15 percent. The weakness of the yen reflected serious ongoing structural problems and the relapse of the Japanese economy back into recession. Early in the year, in response to signs of renewed weakening of the economy, the Bank of Japan announced that it was easing policy by shifting its operating target from the overnight rate—already not far above zero—to balances held by financial institutions at the Bank of Japan. Policy was eased further and more liquidity was injected into the banking system when the balances target was raised three times later in the year. The yen received a temporary boost when Junichiro Koizumi, widely seen as more likely to introduce economic reforms, became prime minister in April. The yen again strengthened in the immediate wake of the September terrorist attacks, prompting the Bank of Japan to make substantial intervention sales of yen. However, later in the year, amid signs of a renewed deterioration of economic conditions, the yen again started to weaken significantly.

For the year as a whole, Japanese real GDP is estimated to have declined more than 1 percent, a reversal of the rebound recorded the previous year. Private investment declined and private consumption moved lower, as households curtailed spending in the face of rising unemployment and falling real income. The winding-down of the large-scale public works programs of recent years more than offset the effect on growth from the additional spending contained in several supplemental budgets. Last year marked the third consecutive year of deflation, with the prices of both consumer goods and real estate continuing to move lower.

The dollar's movements against the euro in 2001 appear to have been mainly influenced by market perceptions of the strength of economic activity in the United States relative to that in the euro area. In the early part of the year, the euro weakened as evidence mounted that the economic slowdown that was already apparent in the United States as the year began was also taking hold in Europe. During the summer, the euro rose against the dollar as market participants appeared to revise downward their expectation of an early U.S. recovery. Then, later in the year, with more signs of a further weakening of activity in Europe, the euro again declined. On balance, the dollar appreciated more than 5 percent relative to the euro over the course of the year. Real GDP in the euro area is estimated to have increased at less than a 1 percent rate in 2001, a sharp slowing from the nearly 3 percent growth rate of the previous year. Fixed investment and inventory investment both are estimated to have made negative contributions to the growth of real GDP, whereas consumption growth remained near the rate of the previous year. The slowing of growth in the euro area was not uniform across countries, with weakness being more pronounced in Germany and less so in France.

U.S. Dollar Exchange Rate against the Euro and the Japanese Yen

NOTE. The data are monthly. Exchange rates are in foreign currency units per dollar. Last observations are the average of trading days through February 21, 2002.

The European Central Bank (ECB) held off easing monetary policy in the early months of the year, restrained by the euro's weakness, growth of M3 that remained in excess of the ECB's reference value, and a euro-area inflation rate above its 2 percent target ceiling. In May, evidence of slowing activity prompted the ECB to reduce its key policy rate 25 basis points. Three additional reductions followed later in the year, as activity weakened further and the inflation rate receded toward its target ceiling. The total reduction in the ECB's key policy rate over the course of the year was 150 basis points. The beginning of 2002 saw the introduction of euro notes and coins, a process that proceeded smoothly.

The dollar appreciated 6 percent against the Canadian dollar in 2001 as the Canadian economy slowed abruptly. Real GDP in Canada is estimated to have been about flat last year after growing more than 3 percent in 2000. A key factor in this slowing was the sharp drop-off in Canadian exports to the

United States. An inventory correction also depressed output. Earlier in the year, consumption was buoyed by continued employment growth, tax cuts, and a housing boom. However, later in the year, growth of consumption faltered as employment prospects worsened and asset prices weakened. The Bank of Canada has moved aggressively to counter the slowing of economic activity by lowering its key policy interest rate nine times in 2001 and once in January 2002 for a cumulative total of 375 basis points.[3] When the Bank of Canada initiated easing moves early in 2001, inflation was slightly above the Bank's target range of 1 percent to 3 percent; but by the end of the year, slack activity and falling energy prices had pushed the inflation rate down to near the bottom of the range.

Emerging Market Economies

Argentina was a main focus of attention among emerging market economies in 2001. In the first part of the year, worse-than-expected data on the fiscal situation and concerns that the government would be unable to implement announced fiscal measures heightened doubts about whether Argentina would be able to avoid a default on its debt. Argentine financial markets received only temporary support from a large-scale debt exchange completed in June and an enhancement of IMF support approved in September. With financial market confidence eroding, conditions took a dramatic turn for the worse late in the year; financial asset prices fell sharply, and funds moved out of the banking system as the government moved to restructure its debt and the one-to-one peg to the dollar looked increasingly precarious. In early December, the government imposed capital controls, including limits on bank account withdrawals. These restrictions led to widespread protests, which triggered the resignation of President de la Rua and an interval of political turmoil. After the resignation of President de la Rua, the government announced it would suspend debt payments to the private sector. The government of the new president, Eduardo Duhalde, suspended Argentina's currency board arrangement and established a temporary dual exchange rate system. In early February, the dual exchange rate system was abandoned, and the peso's floating rate moved to about 2 pesos per dollar amid continuing economic uncertainty. For 2001 as a whole, Argentine real GDP is estimated to have fallen at well over a 5 percent rate, and prices declined further.

To date, the negative spillover from events in Argentina to other emerging financial markets has been limited, possibly because market participants had been well aware of Argentina's problems for some time and viewed them as largely confined to that country. Brazil was probably most heavily affected by events in Argentina, and the bond spread on Brazilian debt showed a net increase of about 110 basis points over the course of last year while the spread on Argentina debt exploded upward. Other important factors weighing on Brazilian economic activity last year likely were weak growth in the United States—Brazil's most important export market—and the emergence of an energy shortage as drought limited hydroelectric output. For the year as a whole, Brazil-

3. Among these reductions was one on September 17, when the Bank of Canada (along with the ECB) announced a reduction of its policy rate by 50 basis points, following the 50 basis point reduction in the federal funds rate announced by the FOMC earlier in the day.

ian real GDP is estimated to have risen at less than a 1 percent rate after growing at a 4 percent rate the previous two years. The Brazilian currency registered a net depreciation against the dollar of about 16 percent over the course of last year, while stock prices declined more than 10 percent. The Brazilian central bank tightened policy last year in an effort to hold down the inflationary impact of currency depreciation.

Real GDP in Mexico declined about 1 percent in 2001, a sharp reversal from the 5 percent growth rates recorded in the previous two years. The falloff in activity was mainly a reflection of the negative effects on direct trade and confidence in Mexico arising from the slowdown of the U.S. economy. In light of the marked weakening of activity, declining inflation, and a strong peso, the Bank of Mexico started to loosen the stance of monetary policy in May, and short-term interest rates continued to decline over the rest of the year. In February 2002, the Bank of Mexico moved to tighten monetary conditions, citing concerns that an increase in administered prices would raise inflation. Mexican financial markets fared quite well last year, with the peso appreciating 5 percent against the dollar and stock prices rising nearly 15 percent. The effect on Mexican financial markets from Argentina's difficulties appeared to have been quite limited, as indicated by the net decline of the Mexican debt spread by 80 basis points over the course of the year.

Economic growth in the Asian emerging market economies turned negative last year. On average, real GDP in developing Asia is estimated to have declined about 1 percent in 2001, compared with average growth of 6 percent in the previous year. A key factor in this slowing was the sharp falloff in global demand for the high-tech products that had fueled rapid export growth in the region in recent years.

The economies of Taiwan, Singapore, and Malaysia are highly dependent on exports of semiconductors and other high-tech products, and as global demand for these goods was cut back sharply, real GDP in these countries declined by an estimated 5 percent on average last year. Indonesia and Thailand, both relatively less dependent on high-tech exports and experiencing some reduction in political tension over the course of the year, managed to record small positive real GDP growth rates last year, albeit well below rates of the previous year.

Korean real GDP is estimated to have increased about 2 percent in 2001. While in an absolute sense Korea is an important exporter of high-tech products such as semiconductors, it has a relatively more diversified economy than most of its Asian neighbors, and thus the magnitude of its slowdown last year was somewhat muted. Government moves toward monetary and fiscal policy stimulus over the course of the year helped support domestic demand in Korea.

In China, recorded growth of real GDP remained robust last year. China's lesser dependency on exports in general, and high-tech exports in particular, cushioned it from last year's global slowdown, and the government stepped up the pace of fiscal stimulus to offset weakening private demand. Hong Kong, with exports not heavily concentrated in high-tech goods and an economy closely integrated with a rapidly growing Chinese economy, is nevertheless estimated to have experienced a decline in real GDP last year. The peg of Hong Kong's currency to a strengthening U.S. dollar put pressure on its competitive position, and domestic price deflation continued.

Conditions in financial markets in emerging Asia were, for the most part, not particularly volatile last year. Debt spreads were little changed on average for the region as a whole, exchange rates against the dollar generally moved lower, and stock indexes declined somewhat on average.

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Monetary Policy Reports to the Congress

Report submitted to the Congress on February 13, 2001, pursuant to section 2B of the Federal Reserve Act

Report of February 13, 2001

Monetary Policy and the Economic Outlook

When the Federal Reserve submitted its previous Monetary Policy Report to the Congress, in July of 2000, tentative signs of a moderation in the growth of economic activity were emerging following several quarters of extraordinarily rapid expansion. After having increased the interest rate on federal funds through the spring to bring the growth of aggregate demand and potential supply into better alignment and thus contain inflationary pressures, the Federal Reserve had stopped tightening as evidence of an easing of economic growth began to appear.

Indications that the expansion had moderated from its earlier rapid pace gradually accumulated during the summer and into the autumn. For a time, this downshifting of growth seemed likely to leave the economy expanding at a pace roughly in line with that of its potential. Over the last few months of the year, however, elements of economic restraint emerged from several directions to slow growth even more. Energy prices, rather than turning down as had been anticipated, kept climbing, raising costs throughout the economy, squeezing business profits, and eroding the income available for discretionary expenditures. Equity prices, after coming off their highs earlier in the year, slumped sharply starting in September, slicing away a portion of household net worth and discouraging the initial offering of new shares by firms. Many businesses encountered tightening credit conditions, including a widening of risk spreads on corporate debt issuance and bank loans. Foreign economic activity decelerated noticeably in the latter part of the year, contributing to a weakening of the demand for U.S. exports, which also was being restrained by an earlier appreciation in the exchange value of the U.S. dollar.

The dimensions of the economic slowdown were obscured for a time by the usual lags in the receipt of economic data, but the situation began to come into sharper focus late in the year as the deceleration steepened. Spending on business capital, which had been rising rapidly for several years, elevating stocks of these assets, flattened abruptly in the fourth quarter. Consumers clamped down on their outlays for motor vehicles and other durables, the stocks of which also had climbed to high levels. As the demand for goods softened, manufacturers adjusted production quickly to counter a buildup in inventories. Rising concern about slower growth and worker layoffs contributed to a sharp deterioration of consumer confidence. In response to the accumulating weakness, the Federal Open Market Committee (FOMC) lowered the intended interest rate on federal funds ½ percentage point on January 3 of this year. Another rate reduction of that same size was implemented at the close of the most recent meeting of the FOMC at the end of last month.

As weak economic data induced investors to revise down their expectations of future short-term interest rates in recent months and as the Federal Reserve eased policy, financial market conditions became more accommodative. Since the November FOMC meeting, yields on many long-term corporate bonds have dropped on the order of a full percentage point, with the largest declines taking place on riskier bonds as the yield spreads on those securities narrowed considerably from their elevated levels. In response, borrowing in long-term credit markets has strengthened appreciably so far in 2001. The less restrictive conditions in financial markets should help lay the groundwork for a rebound in economic growth.

That rebound should also be encouraged by underlying strengths of the economy that still appear to be present despite the sluggishness encountered of late. The most notable of these strengths is the remarkable step-up in structural productivity growth since the mid-1990s, which seems to be closely related to the spread of new technologies. Even as the economy slowed in 2000, evidence of ongoing efficiency gains were apparent in the form of another year of rapid advance in output per worker hour in the nonfarm business sector. With households and businesses still in the process of putting recent innovations in place and with technological breakthroughs still occurring, an end to profitable investment opportunities in the technology area does not yet seem to be in sight. Should investors continue to seek out emerging opportunities, the ongoing transformation and expansion of the capital stock will be maintained, thereby laying the groundwork for further gains in productivity and ongoing advances in real income and spending. The impressive performance of productivity and the accompanying environment of low and stable underlying inflation suggest that the longer-run outlook for the economy is still quite favorable, even though downside risks may remain prominent in the period immediately ahead.

Monetary Policy, Financial Markets, and the Economy over the Second Half of 2000 and Early 2001

As described in the preceding Monetary Policy Report to the Congress, the very rapid pace of economic growth over the first half of 2000 was threatening to place additional strains on the economy's resources, which already appeared to be stretched thin. Private long-term interest rates had risen considerably in response to the strong economy, and, in an effort to slow the growth of aggregate demand and thereby prevent a buildup of inflationary pressures, the Federal Reserve had tightened its policy settings substantially through its meeting in May 2000. Over subsequent weeks, preliminary signs began to emerge suggesting that growth in aggregate demand might be slowing, and at its June meeting the FOMC left the federal funds rate unchanged.

Further evidence accumulated over the summer to indicate that demand growth was moderating. The rise in mortgage interest rates over the previous year seemed to be damping activity in the housing sector. Moreover, the growth of consumer spending had slowed from the exceptional pace of earlier in the year; the impetus to spending from outsized equity price gains in 1999 and early 2000 appeared to be partly wearing off, and rising energy prices were continuing to erode the purchasing power of households. By contrast, business fixed investment still was increasing very rapidly, and strong growth of foreign economies was fostering greater demand for U.S. exports. Weighing this evidence and recognizing that the effects of previous tightenings had not yet been fully felt, the FOMC decided at its meeting in August to hold the federal funds rate unchanged. The Committee remained concerned that demand could continue to grow faster than potential supply at a time when the labor market was already taut, and it saw the balance of risks still tilted toward heightened inflation pressures.

The FOMC faced fairly similar circumstances at its October meeting. By then, it had become more apparent that the growth in demand had fallen to a pace around that of potential supply. Although consumer spending had picked up again for a time, it did not regain the vigor it had displayed earlier in the year, and capital spending, while still growing briskly, had decelerated from its first-half pace. With increases in demand moderating, private employment gains slowed from the rates seen earlier in the year. However, labor markets remained exceptionally tight, and the hourly compensation of workers had accelerated to a point at which unit labor costs were edging up despite strong gains in productivity. In addition, sizable increases in energy prices were pushing broad inflation measures above the levels of recent years. Although core inflation measures were at most only creeping up, the Committee felt that there was some risk that the increase in energy prices, which was lasting longer than had seemed likely earlier in the year, would start to leave an imprint on business costs and longer-run inflation expectations, posing the risk that core inflation rates could rise more substantially. Weighing these considerations, the FOMC decided to hold the federal funds rate unchanged at its October meeting. While recognizing that the risks in the outlook were shifting, the FOMC believed that the tautness of labor markets and the rise in energy prices meant that the balance of those risks still was weighted toward heightened inflation pressures, and this assessment was noted in the balance-of-risks statement.

By the time of the November FOMC meeting, conditions in the financial markets were becoming less accommodative in some ways, even as the Federal Reserve held the federal funds rate steady. Equity prices had declined considerably over the previous several months, resulting in an erosion of household wealth that seemed likely to restrain consumer spending going forward. Those price declines, along with the elevated volatility of equity prices, also hampered the ability of firms to raise funds in equity markets and were likely discouraging business investment. Some firms faced more restrictive conditions in credit markets as well, as risk spreads in the corporate bond market widened significantly for firms with lower credit ratings and as banks tightened the standards and terms on their business loans. Meanwhile, incoming data indicated that the pace of economic activity had softened a bit further. Still, the growth of aggregate demand apparently had moved only modestly below that of potential supply. Moreover, while crude oil prices appeared to be topping out, additional inflationary pressures were arising in the energy sector in the form of surging prices for natural gas, and there had been no easing of the tightness in the labor market. In assessing the evidence, the members of the Committee felt that the risks to the outlook were coming into closer balance but had not yet shifted decisively. At the close of the meeting, the FOMC left the funds rate unchanged once again, and it stated that the balance of risks continued to point toward increased inflation. However, in the statement released after the meeting, the FOMC noted the possibility of subpar growth in the economy in the period ahead.

Toward the end of the year, the moderation of economic growth gave way, fairly abruptly, to more sluggish conditions. By the time of the December FOMC meeting, manufacturing activity had softened considerably, especially in motor vehicles and related industries, and a number of industries had accumulated excessive stocks of inventories. Across a broader set of firms, forecasts for corporate sales and profits in the fourth quarter and in 2001 were being slashed, contributing to a continued decline in equity prices and a further widening of risk spreads on lower-rated corporate bonds. In this environment, growth in business fixed investment appeared to be slowing appreciably. Consumer spending showed signs of decelerating further, as falling stock prices eroded household wealth and consumer confidence weakened. Moreover, growth in foreign economies seemed to be slowing, on balance, and U.S. export performance began to deteriorate. Market interest rates had declined sharply in response to these developments. Against this backdrop, the FOMC at its December meeting decided that the risks to the outlook had swung considerably and now were weighted toward economic weakness, although it decided to wait for additional evidence on the extent and persistence of the slowdown before moving to an easier policy stance. Recognizing that the current position of the economy was difficult to discern because of lags in the data and that prospects for the near term were particularly uncertain, the Committee agreed at the meeting that it would be especially attentive over coming weeks to signs that an intermeeting policy action was called for.

Additional evidence that economic activity was slowing significantly emerged not long after the December meeting. New data indicated a marked weakening in business investment, and retail sales over the holiday season were appreciably lower than businesses had expected. To contain the resulting buildup in inventories, activity in the manufacturing sector continued to drop. In addition, forecasts of near-term corporate profits were being marked down further, resulting in additional declines in equity prices and in business confidence. Market interest rates continued to fall, as investors became more pessimistic about the economic outlook. Based on these developments, the Committee held a telephone conference call on January 3, 2001, and decided to cut the intended federal funds rate ½ percentage point. Equity prices surged on the announcement, and the Treasury yield curve steepened considerably, apparently because market participants became more confident that a prolonged downturn in economic growth would likely be forestalled. Following the policy easing, the Board of Governors approved a decrease in the discount rate of a total of ½ percentage point.

The Committee's action improved financial conditions to a degree. Over the next few weeks, equity prices rose, on net. Investors seemed to become less wary of credit risk, and yield spreads narrowed across most corporate bonds even as the issuance of these securities picked up sharply. But in some other respects, investors remained cautious, as evidenced by widening spreads in commercial paper markets. Incoming data pointed to further weakness in the manufacturing sector and a sharp decline in consumer confidence. Moreover, slower U.S. growth appeared to be spilling over to several important trading partners. In late January, the FOMC cut the intended federal funds rate ½ percentage point while the Board of Governors approved a decrease in the discount rate of an equal amount. Because of the significant erosion of consumer and business confidence and the need for additional adjustments to production to work off elevated inventory levels, the FOMC indicated that the risks to the outlook continued to be weighted toward economic weakness.

Economic Projections for 2001

Although the economy appears likely to be sluggish over the near term, the members of the Board of Governors and the Reserve Bank presidents expect stronger conditions to emerge as the year progresses. For 2001 overall, the central tendency of their forecasts of real GDP growth is 2 percent to 2½ percent, measured as the change from the fourth quarter of 2000 to the fourth quarter of 2001. With growth falling short of its potential rate, especially in the first half of this year, unemployment is expected to move up a little further. Most of the governors and Reserve Bank presidents are forecasting that the average unemployment rate in the fourth quarter of this year will be about 4½ percent, still quite low by historical standards.

The rate of economic expansion over the near term will depend importantly on the speed at which inventory overhangs that developed over the latter part of 2000 are worked off. Gains in information technology have no doubt enabled businesses to respond more quickly to a softening of sales, which has steepened the recent production cuts but should also damp the buildup in inventories and facilitate a turnaround. The motor vehicle industry made some progress toward reducing excess stocks in January owing to a combination of stronger sales and a further sharp cutback in assemblies. In other parts of manufacturing, the sizable reductions in production late last year suggest that producers in general were moving quickly to get output into better alignment with sales. Nevertheless, stocks at year-end were above desired levels in a number of industries.

Once inventory imbalances are worked off, production should become more closely linked to the prospects for sales. Household and business expenditures have decelerated markedly in recent months, and uncertainties about

Economic Projections for 2001

Percent

Indicator	Memo: 2000 actual	Federal Reserve governors and Reserve Bank presidents	
		Range	Central tendency
Change, fourth quarter to fourth quarter[1]			
Nominal GDP	5.9	3¾–5¼	4–5
Real GDP[2]	3.5	2–2¾	2–2½
PCE chain-type price index	2.4	1¾–2½	1¾–2¼
Average level, fourth quarter			
Civilian unemployment rate	4.0	4½–5	About 4½

1. Change from average for fourth quarter of 2000 to average for fourth quarter of 2001.

2. Chain-weighted.

how events might unfold are considerable. But, responding in part to the easing of monetary policy, financial markets are shifting away from restraint, and this shift should create a more favorable underpinning to the expected pickup in the economy as the year progresses. The sharp drop in mortgage interest rates since May of last year appears to have stemmed the decline in housing activity; it also has enabled many households to refinance existing mortgages at lower rates, an action that should free up cash for added spending. Conditions of business finance also have eased to some degree. Interest rates on investment-grade corporate bonds have recently fallen to their lowest levels in about 1½ years. Moreover, the premiums required of bond issuers that are perceived to be at greater risk have dropped back in recent weeks from the elevated levels of late 2000. As credit conditions have eased, firms have issued large amounts of corporate bonds so far in 2001. However, considerable caution is evident in the commercial paper market and among banks, whose loan officers have reported a further tightening of lending conditions since last fall. In equity markets, prices have recently dropped in response to negative reports on corporate earnings, reversing the gains that took place in January.

The restraint on domestic demand from high energy prices is expected to ease in coming quarters. Natural gas prices have dropped back somewhat in recent weeks as the weather has turned milder, and crude oil prices also are down from their peaks. Although these prices could run up again in conjunction with either a renewed surge in demand or disruptions in supply, participants in futures markets are anticipating that prices will be trending gradually lower over time. A fall in energy prices would relieve cost pressures on businesses to some degree and would leave more discretionary income in the hands of households.

How quickly investment spending starts to pick up again will depend not only on the cost of finance but also on the prospective rates of return to capital. This past year, expectations regarding the prospects of some high-tech companies clearly declined, and capital spending seems unlikely to soon regain the exceptional strength that was evident in the latter part of the 1990s and for a portion of last year. From all indications, however, technological advance still is going forward at a rapid pace, and investment will likely pick up again if, as expected, the expansion of the economy gets back on more solid footing. Private analysts are still anticipating high rates of growth in corporate earnings over the long-run, suggesting that the current sluggishness of the economy has not undermined perceptions of favorable long-run fundamentals.

The degree to which increases in exports might help to support the U.S. economy through a stretch of sluggishness has become subject to greater uncertainty recently because foreign economies also seem to have decelerated toward the end of last year. However, the expansion of imports has slowed sharply, responding in part to the softening of domestic demand growth. In effect, some of the slowdown in demand in this country is being shifted to foreign suppliers, implying that the adjustments required of domestic producers are not as great as they otherwise would have been.

In adjusting labor input to the slowing of the economy, businesses are facing conflicting pressures. Speedy adjustment of production and ongoing gains in efficiency argue for cutbacks in labor input, but companies are also reluctant to lay off workers that have been difficult to attract and retain in the tight labor market conditions of the past few years. In the aggregate, the balance that has been struck in recent months has led, on net, to slower growth of employment, cutbacks in the length of the average workweek, and, in January of this year, a small increase in the unemployment rate.

Inflation is not expected to be a pressing concern over the coming year. Most of the governors and Reserve Bank presidents are forecasting that the rise in the chain-type price index for personal consumption expenditures will be smaller than the price rise in 2000. The central tendency of the range of forecasts is 1¾ percent to 2¼ percent. Inflation should be restrained this coming year by an expected downturn in energy prices. In addition, the reduced pressure on resources that is associated with the slowing of the economy should help damp increases in labor costs and prices.

Economic and Financial Developments in 2000 and Early 2001

The combination of exceptionally strong growth in the first half of 2000 and subdued growth in the second half resulted in a rise in real GDP of about 3½ percent for the year overall. Domestic demand started out the year with incredible vigor but decelerated thereafter and was sluggish by year-end. Exports surged for three quarters and then faltered. In the labor market, growth of employment slowed over the year but was sufficient to keep the unemployment rate around the lowest sustained level in more than thirty years.

Core inflation remained low in 2000 in the face of sharp increases in energy prices. Although the chain-type price index for personal consumption expenditures (PCE) moved up faster than in 1999, it showed only a slight step-up in the rate of increase after excluding the prices of food and energy. Unit labor costs picked up moderately, adding to the cost pressures from energy, but the ability of businesses to raise prices was restrained by the slowing of the economy and the persistence of competitive pricing conditions.

The Household Sector

Personal consumption expenditures increased 4½ percent in real terms in 2000 after having advanced 5 percent in 1998 and 5½ percent in 1999. A large portion of last year's gain came in the first quarter, when consumption moved ahead at an unusually rapid pace. The increase in consumer spending over the remainder of the year was moderate, averaging about 3½ percent at an annual rate. Consumer outlays for motor vehicles and parts surged to a record high early in 2000 but reversed that gain over the remainder of the year; sales of vehicles tailed off especially sharply as the year drew to a close. Real consumer purchases of gasoline fell during the year in response to the steep run-up in gasoline prices. Most other broad categories of goods and services posted sizable gains over the year as a whole, but results late in the year were mixed: Real outlays for goods other than motor vehicles eked out only a small gain in the fourth quarter, while real outlays for consumer services rose very rapidly, not only because of higher outlays for home heating fuels during a spell of colder-than-usual weather but also because of continued strength in real outlays for other types of services.

Changes in income and wealth provided less support to consumption in 2000 than in other recent years. Real disposable personal income rose about 2¼ percent last year after a gain of slightly more than 3 percent in 1999. Disposable income did not rise quite as much in nominal terms as it had in 1999, and rising prices eroded a larger portion of the nominal gain. Meanwhile, the net worth of households turned down in 2000 after having climbed rapidly for several years, as the effect of a decline in the stock market was only partially offset by a sizable increase in the value of residential real estate. With the peak in stock prices not coming until the year was well under way, and with valuations having previously been on a sharp upward course for an extended period, stock market wealth may well have continued to exert a strong positive effect on consumer spending for several months after share values had topped out. As time passed, however, the impetus to consumption from this source most likely diminished. The personal saving rate, which had dropped sharply during the stock market surge of previous years, fell further in 2000, but the rate of decline slowed, on average, after the first quarter.

Even with real income growth slowing and the stock market turning down, consumers maintained a high degree of optimism through most of 2000 regarding the state of the economy and the economic outlook. Indexes of sentiment from both the University of Michigan Survey Research Center and the Conference Board rose to new peaks in the first quarter of the year, and the indexes remained close to those levels for several more months. Survey readings on personal finances, general business conditions, and the state of the labor market remained generally favorable through most of the year. As of late autumn, only mild softness could be detected. Toward year-end, however, confidence in the economy dropped sharply. Both of the indexes of confidence showed huge declines over the two months ended in January. The marked shift in attitudes toward year-end probably was brought on by a combination of developments, including the weakness in the stock market over the latter part of the year and more frequent reports of layoffs.

Real outlays for residential investment declined about 2¼ percent, on net, over the course of 2000, as construction of new housing dropped back from the elevated level of the previous year. Investment in housing was influenced by a sizable swing in mortgage interest rates as well as by slower growth of employment and income and the downturn in the stock market. After having moved up appreciably in 1999, mortgage rates continued to advance through the first few months of 2000. By mid-May, the average commitment rate on conventional fixed-rate mortgages was above 8½ percent, up roughly 1½ percentage points from the level of a year earlier. New construction held up even as rates were rising in 1999 and early 2000, but it softened in the spring of last year. Starts and permits for single-family houses declined from the first quarter to the third quarter.

But even as homebuilding activity was turning down, conditions in mortgage markets were moving back in a direction more favorable to housing. From the peak in May, mortgage interest rates fell substantially over the remainder of the year and into the early part of 2001, reversing the earlier increases. Sales of new homes firmed as rates turned down, and prices of new houses continued to trend up faster than the general rate of inflation. Inventories of unsold new homes held fairly steady over the year and were up only moderately from the lows of 1997 and 1998. With demand well-maintained and inventories under control, activity stabilized. Starts and permits for single-family houses in the fourth quarter of 2000 were up from the average for the third quarter.

Households continued to borrow at a brisk pace last year, with household debt expanding an estimated 8¾ percent, well above the growth rate of disposable personal income. Consumer credit increased rapidly early in the year, boosted by strong outlays on durable goods; but as consumer spending cooled later in the year, the expansion of consumer credit slowed. For the year as a whole, consumer credit is estimated to have advanced more than 8½ percent, up from the 7 percent pace of 1999. Households also took on large amounts of mortgage debt, which grew an estimated 9 percent last year, reflecting the solid pace of home sales.

With the rapid expansion of household debt in recent years, the household debt service burden has increased to levels not seen since the late 1980s. Even so, with unemployment low and household net worth high, the credit quality of the household sector appears to have deteriorated little last year. Personal bankruptcy filings held relatively steady and remain well below their peak from several years ago. Delinquency rates on home mortgages, credit cards, and auto loans have edged up in recent quarters but are at most only slightly above their levels of the fourth quarter of 1999. Lenders did not appear to be significantly concerned about the credit quality of the household sector for most of last year, although some lenders have become more cautious of late. According to surveys of banks conducted by the Federal Reserve, few commercial banks tightened lending conditions on consumer installment loans and mortgage loans to households over the first three quarters of 2000. However, the most recent survey indicates that a number of banks tightened standards and terms on consumer loans, particularly non-credit-card loans, over the past several months, perhaps because of some uneasiness about how the financial position of households will hold up as the pace of economic activity slows.

The Business Sector

Real business fixed investment rose 10 percent in 2000 according to the advance estimate from the Commerce Department. Investment spending shot ahead at an annual rate of 21 percent in the first quarter of the year; its strength in that period came, in part, from high-tech purchases that had been delayed from 1999 by companies that did not want their operating systems to be in a state of change at the onset of the new millennium. Expansion of investment was slower but still relatively brisk in the second and third quarters, at annual rates of about 15 percent and 8 percent respectively. In the fourth quarter, however, capital spending downshifted abruptly in response to the slowing economy, tightening financial conditions, and rising concern about the prospects for profits; the current estimate shows real investment outlays having fallen at an annual rate of 1½ percent in that period.

Fixed investment in equipment and software was up 9½ percent in 2000, with the bulk of the gain coming in the first half of the year. Spending slowed to a rate of growth of about 5½ percent in the third quarter and then declined in the fourth quarter. Business investment in motor vehicles fell roughly 15 percent, on net, during 2000, with the largest portion of the drop coming in the fourth quarter; the declines in real outlays on larger types of trucks were particularly sizable. Investment in industrial equipment, tracking the changing conditions in manufacturing, also fell in the fourth quarter but was up appreciably for the year overall. Investment in high-tech equipment decelerated over the year but was still expanding in the fourth quarter: Real outlays for telecommunications equipment posted exceptionally large gains in the first half of the year, flattened out temporarily in the third quarter, and expanded again in the fourth. Spending on computers and peripherals increased, in real terms, at an average rate of about 45 percent over the first three quarters of the year but slowed abruptly to a 6 percent rate of expansion in the year's final quarter, the smallest quarterly advance in several years.

Investment in nonresidential structures rose substantially in 2000, about 12½ percent in all, after having declined 1¾ percent in 1999. Investment in factory buildings, which had fallen more than 20 percent in 1999 in an apparent reaction to the economic disruptions abroad and the associated softness in demand for U.S. exports, more than recouped that decline over the course of 2000. Real outlays for office construction, which had edged down in 1999 after several years of strong advance, got back on track in 2000, posting a gain of about 13½ percent. Real investment in commercial buildings other than offices was little changed after moderate gains in the two previous years. Spending on structures used in drilling for energy strengthened in response to the surge in energy prices.

Business inventory investment was subdued early in the year when final sales were surging; aggregate inventory–sales ratios, which have trended lower in recent years as companies became more efficient at managing stocks, edged down further. As sales moderated in subsequent months, production growth did not decelerate quite as quickly, and inventories began to rise more rapidly. Incoming information through the summer suggested that some firms might be encountering a bit of backup in stocks but that the problems were not severe overall. In the latter part of the year, however, inventory–sales ratios turned up, indicating that more serious overhangs were developing. Responding to the slowing of demand and the increases in stocks, manufacturers reduced output in each of the last three months of the year by successively larger amounts. Businesses also began to clamp down on the flow of imports. Despite those adjustments, stocks in a number of domestic industries were likely well above desired levels as the year drew to a close.

The Commerce Department's compilation of business profits currently extends only through the third quarter of 2000, but these data show an evolving pattern much like that of other economic data. After having risen at an annual rate of more than 16 percent in the first half of the year, U.S. corporations' economic profits—that is, book profits with inventory and capital consumption adjustments—slowed to less than a 3 percent rate of growth in the third quarter. Profits from operations outside the United States continued to increase rapidly in the third quarter. However, economic profits from domestic operations edged down in that period, as solid gains for financial corporations were more than offset by a 4 percent rate of decline in the profits of nonfinancial corporations. Profits of nonfinancial corporations as a share of their gross nominal output rose about ½ percentage point in the first half of 2000 but reversed part of that gain in the third quarter. Earnings reports for the fourth quarter indicate that corporate profits fell sharply in that period.

Business debt expanded strongly over the first half of 2000, propelled by robust capital spending as well as by share repurchases and cash-financed merger activity. The high level of capital expenditures outstripped internally generated funds by a considerable margin despite continued impressive profits. To meet their borrowing needs, firms tapped commercial paper, bank loans, and corporate bonds in volume in the first quarter. The rapid pace of borrowing continued in the second quarter, although borrowers relied more heavily on bank loans and commercial paper to meet their financing needs in response to a rise in longer-term interest rates.

Business borrowing slowed appreciably in the second half of the year. As economic growth moderated and profits weakened, capital spending decelerated sharply. In addition, firms held down their borrowing needs by curbing their buildup of liquid assets, which had been accumulating quite rapidly in previous quarters. Borrowing may have been deterred by a tightening of financial conditions for firms with lower credit ratings, as investors and lenders apparently became more concerned about credit risk. Those concerns likely were exacerbated by indications that credit quality had deteriorated at some businesses. The default rate on high-yield bonds continued to climb last year, reaching its highest level since 1991. Some broader measures of credit quality also slipped. The amount of nonfinancial debt downgraded by Moody’s Investor Services in 2000 was more than twice as large as the amount upgraded, and the delinquency rate on business loans at commercial banks continued to rise over the year. But while some firms were clearly having financial difficulties, many other firms remained soundly positioned to service their debt. Indeed, the ratio of net interest payments to cash flow for all nonfinancial firms moved only modestly above the relatively low levels of recent years.

As concerns about risk mounted, lenders became more cautious about extending credit to some borrowers. An increasingly large proportion of banks reported firming terms and standards on business loans over the course of the year. In the corporate bond market, yield spreads on high-yield and lower-rated investment-grade bonds, measured relative to the ten-year swap rate, began climbing sharply in September and by year-end were at levels well above those seen in the fall of 1998. Lower-rated commercial paper issuers also had to pay unusually large premiums late in the year, particularly on paper spanning the year-end. As financial conditions became more stringent, issuance of high-yield debt was cut back sharply in the fourth quarter, although investment-grade bond issuance remained strong. Bank lending to businesses was also light at that time, and net issuance of commercial paper came to a standstill. In total, the debt of nonfinancial businesses expanded at an estimated 5½ percent rate in the fourth quarter, less than half the pace of the first half of the year. The slowdown in borrowing in the latter part of the year damped the growth of nonfinancial business debt over 2000, although it still expanded an estimated 8¾ percent.

In early 2001, borrowing appears to have picked up from its sluggish fourth-quarter pace. Following the easing of monetary policy in early January, yield spreads on corporate bonds reversed a considerable portion of their rise over the latter part of 2000, with spreads on high-yield bonds narrowing more than a percentage point. As yields declined, corporate bond issuance picked up, and even some below-investment grade issues were brought to the market. In contrast, investors in the commercial paper market apparently became more concerned about credit risk, partly in response to the defaults of two California utilities on some bonds and commercial paper in mid-January related to the difficulties in the electricity market in that state. After those defaults, spreads between top-tier and second-tier commercial paper widened further, and investors became more discriminating even within the top rating tier. Some businesses facing resistance in the commercial paper market reportedly met their financing needs by tapping backup credit lines at banks.

Growth in commercial mortgage debt slowed last year to an estimated rate of 9¼ percent, and issuance of commercial-mortgage-backed securities in 2000 fell back from its 1999 pace. Spreads on lower-rated commercial-mortgage-backed securities over swap rates widened by a small amount late in the year, and banks on net reported tightening their standards on commercial real estate credit over the year. Nevertheless, fundamentals in the commercial real estate market remain solid, and delinquency rates on commercial mortgages stayed around their historic lows.

The Government Sector

Real consumption and investment expenditures of federal, state, and local governments, the part of government spending that is included in GDP, rose only 1¼ percent in the aggregate during 2000. The increase was small partly because the consumption and investment expenditures of the federal government had closed out 1999 with a large increase in advance of the century date change. Federal purchases in the fourth quarter of 2000 were about 1 percent below the elevated level at year-end 1999. Abstracting from the bumps in the spending data, the underlying trend in real federal consumption and investment outlays appears to have been mildly positive over the past couple of years. The consumption and investment expenditures of state and local governments rose about 2½ percent in 2000 after an unusually large increase of 4¼ percent in 1999. The slowdown in spending was mainly a reflection of a downshift in government investment in structures, which can be volatile from year to year and had posted a large gain in 1999.

Total federal spending, as reported in the unified budget, rose 5 percent in fiscal year 2000, the largest increase in several years. A portion of the rise stemmed from shifts in the timing of some outlays in a way that tended to boost the tally for fiscal 2000. But even allowing for those shifts, the rise in spending would have exceeded the increases of other recent years. Outlays accelerated for most major functions, including defense, health, social security, and income security. Of these, spending on health—about three-fourths of which consists of outlays for Medicaid—recorded the biggest increase. Medicaid grants to the states were affected last fiscal year by increased funding for the child health insurance initiative that was passed in 1997 and by a rise in the portion of Medicaid expenses picked up by the federal government. Spending on agriculture rose very sharply for a third year but not as rapidly as in fiscal 1999. The ongoing paydown of debt by the federal government led to a decline of nearly 3 percent in net interest payments in fiscal 2000 after a somewhat larger drop in these payments in fiscal 1999.

Federal receipts increased 10¾ percent in fiscal year 2000, the largest advance in more than a decade. The increase in receipts from taxes on the income of individuals amounted to more than 14 percent. In most recent years, these receipts have grown much faster than nominal personal income as measured in the national income and product accounts. One important factor in the difference is that rising levels of income and a changing distribution have shifted more taxpayers into higher tax brackets; another is an increase in revenues from taxes on capital gains and other items that are not included in personal income. Receipts from the taxation of corporate profits also moved up sharply in fiscal 2000, rebounding from a small decline the previous fiscal year. With federal receipts rising much faster than spending, the surplus in the unified budget rose to $236 billion in fiscal 2000, nearly double that of fiscal 1999. The on-budget surplus, which excludes surpluses accumulating in the social security trust fund, rose from essentially zero in fiscal 1999 to $86 billion in fiscal 2000. Excluding net interest payments, a charge resulting from past deficits, the surplus in fiscal 2000 was about $460 billion.

Federal saving, which is basically the federal budget surplus adjusted to conform to the accounting practices followed in the national income and product accounts, amounted to about 3½ percent of nominal GDP over the first three quarters of 2000. This figure has been rising roughly 1 percentage point a year over the past several years. Mainly because of that rise in federal saving, the national saving rate has been running at a higher level in recent years than was observed through most of the 1980s and the first half of the 1990s, even as the personal saving rate has plunged. The rise in federal saving has kept interest rates lower than they otherwise would have been and has contributed, in turn, to the rapid growth of capital investment and the faster growth of the economy's productive potential.

The burgeoning federal budget surplus allowed the Treasury to pay down its debt last year at an even faster pace than in recent years. As of the end of fiscal 2000, the stock of marketable Treasury debt outstanding had fallen about $500 billion from its peak in 1997. The existing fiscal situation and the anticipation that budget surpluses would continue led the Treasury to implement a number of debt management changes during 2000, many designed to preserve the liquidity of its securities. In particular, the Treasury sought to maintain large and regular offerings of new securities at some key maturities, because such attributes are thought to importantly contribute to market liquidity. In part to make room for continued sizable auctions of new securities, the Treasury initiated a debt buyback program through which it can purchase debt that it previously issued. In total, the Treasury conducted twenty buyback operations in 2000, repurchasing a total of $30 billion par value of securities with maturities ranging from twelve to twenty-seven years. Those operations were generally well received and caused little disruption to the market. Going forward, the Treasury intends to conduct two buyback operations per month and expects to repurchase about $9 billion par value of outstanding securities in each of the first two quarters of 2001.

Despite conducting buybacks on that scale, the Treasury had to cut back considerably its issuance of new securities. To still achieve large sizes of individual issues at some maturities, the Treasury implemented a schedule of regular reopenings—in which it auctions additional amounts of a previously issued security instead of issuing a new one—for its five-, ten-, and thirty-year instruments. Under that schedule, every other auction of each of those securities is a smaller reopening of the previously auctioned security. At other maturities, the Treasury reduced the sizes of its two-year notes and inflation-indexed securities and eliminated the April auction of the thirty-year inflation-indexed bond. In addition, the Treasury recently announced that it would stop issuing one-year bills following the February auction, after having cut back the frequency of new offerings of that security last year.

These reductions in the issuance of Treasury securities have caused the Federal Reserve to modify some of its procedures for obtaining securities at Treasury auctions, as described in detail below. In addition, the Treasury made changes in the rules for auction participation by foreign and international monetary authority (FIMA) accounts, which primarily include foreign central banks and governmental monetary entities. The new rules, which went into effect on February 1, 2001, impose limits on the size of non-competitive bids from individual FIMA accounts and on the total amount of such bids that will be awarded at each auction. These limits will leave a larger pool of securities available for competitive bidding at the auctions, helping to maintain the liquidity and efficiency of the market. Moreover, FIMA purchases will be subtracted from the total amount of securities offered, rather than being added on as they were in some previous instances, making the amount of funds raised at the auction more predictable.

State and local government debt increased little in 2000. Gross issuance of long-term municipal bonds was well below the robust pace of the past two years. Refunding offerings were held down by higher interest rates through much of the year, and the need to raise new capital was diminished by strong tax revenues. Net issuance was also damped by an increase in the retirement of bonds from previous refunding activity. Credit quality in the municipal market improved considerably last year, with credit upgrades outnumbering downgrades by a substantial margin. The only notable exception was in the not-for-profit health care sector, where downgrades predominated.

The External Sector

Trade and Current Account

The current account deficit reached $452 billion (annual rate) in the third quarter of 2000, or 4.5 percent of GDP, compared with $331 billion and 3.6 percent for 1999. Most of the expansion in the current account deficit occurred in the balance of trade in goods and services. The deficit on trade in goods and services widened to $383 billion (annual rate) in the third quarter from $347 billion in the first half of the year. Data for trade in October and November suggest that the deficit may have increased further in the fourth quarter. Net payments on investments were a bit less during the first three quarters of 2000 than in the second half of 1999 owing to a sizable increase in income receipts from direct investment abroad.

U.S. exports of goods and services rose an estimated 7 percent in real terms during 2000. Exports surged during the first three quarters, supported by a pickup in economic activity abroad that began in 1999. By market destination, U.S. exports were strongest to Mexico and countries in Asia. About 45 percent of U.S. goods exports were capital equipment, 20 percent were industrial supplies, and roughly 10 percent each were agricultural, automotive, consumer, and other goods. Based on data for October and November, real exports are estimated to have declined in the fourth quarter, reflecting in part a slowing of economic growth abroad. This decrease was particularly evident in exports of capital goods, automotive products, consumer goods, and agricultural products.

The quantity of imported goods and services expanded rapidly during the first three quarters of 2000, reflecting the continuing strength of U.S. domestic demand and the effects of past dollar appreciation on price competitiveness. Increases were widespread among trade categories. Based on data for October and November, real imports of goods and services are estimated to have risen only slightly in the fourth quarter. Moderate increases in imported consumer and capital goods were partly offset by declines in other categories of imports, particularly industrial supplies and automotive products, for which domestic demand had softened. The price of non-oil imports is estimated to have increased by less than 1 percent during 2000.

The price of imported oil rose nearly $7 per barrel over the four quarters of 2000. During the year, oil prices generally remained high and volatile, with the spot price of West Texas intermediate (WTI) crude fluctuating between a low of $24 per barrel in April and a high above $37 per barrel in September. Strong demand—driven by robust world economic growth—kept upward pressure on oil prices even as world supply increased considerably. Over the course of 2000, OPEC raised its official production targets by 3.7 million barrels per day, reversing the production cuts made in the previous two years. Oil production from non-OPEC sources rebounded as well. During the last several weeks of 2000, oil prices fell sharply as market participants became convinced that the U.S. economy was slowing. In early 2001, however, oil prices moved back up when OPEC announced a planned production cut of 1.5 million barrels per day.

Financial Account

The counterpart to the increased U.S. current account deficit in 2000 was an increase in net capital inflows. As in 1999, U.S. capital flows in 2000 reflected the relatively strong cyclical position of the U.S. economy for most of the year and the global wave of corporate mergers. Foreign private purchases of U.S. securities were exceptionally robust—well in excess of the record set in 1999. The composition of U.S. securities purchased by foreigners continued the shift away from Treasuries as the U.S. budget surplus, and the attendant decline in the supply of Treasuries, lowered their yield relative to other debt. Last year private foreigners sold, on net, about $50 billion in Treasury securities, compared with net sales of $20 billion in 1999. Although sizable, these sales were slightly less than what would have occurred had foreigners reduced their holdings in proportion to the reduction in Treasuries outstanding. The increased sale of Treasuries was fully offset by larger foreign purchases of U.S. securities issued by government-sponsored agencies. Net purchases of agency securities topped $110 billion, compared with the previous record of $72 billion set in 1999. In contrast to the shrinking supply of Treasury securities, U.S. government-sponsored agencies accelerated the pace of their debt issuance. Private foreign purchases of U.S. corporate debt grew to $180 billion, while net purchases of U.S. equities ballooned to $170 billion compared with $108 billion in 1999.

The pace of foreign direct investment inflows in the first three quarters of 2000 also accelerated from the record pace of 1999. As in the previous two years, direct investment inflows were driven by foreign acquisition of U.S. firms, reflecting the global strength in merger and acquisition activity. Of the roughly $200 billion in direct investment inflows in the first three quarters, about $100 billion was directly attributable to merger activity. Many of these mergers were financed, at least in part, by an exchange of equity, in which shares in the U.S. firm were swapped for equity in the acquiring firm. Although U.S. residents generally appear to have sold a portion of the equity acquired through these swaps, the swaps likely contributed significantly to the $97 billion capital outflow attributed to U.S. acquisition of foreign securities. U.S. direct investment abroad was also boosted by merger activity and totaled $117 billion in the first three quarters of 2000, a slightly faster pace than that of 1999.

Capital inflows from foreign official sources totaled $38 billion in 2000—a slight increase from 1999. Nearly all of the official inflows were attributable to reinvested interest earnings. Modest official sales of dollar assets associated with foreign exchange intervention were offset by larger inflows from some non-OPEC oil exporting countries, which benefited from the elevated price of oil.

The Labor Market

Nonfarm payroll employment increased about 1½ percent in 2000, measured on a December-to-December basis. The job count had risen slightly more than 2 percent in 1999 and roughly 2½ percent a year over the 1996–98 period. Over the first few months of 2000, the expansion of jobs proceeded at a faster pace than in 1999, boosted both by the federal government's hiring for the decennial Census and by a somewhat faster rate of job creation in the private sector. Indications of a moderation in private hiring started to emerge toward mid-year, but because of volatility of the incoming data a slowdown could not be identified with some confidence until late summer. Over the remainder of the year monthly increases in private employment stepped down further. Job growth came almost to a stop in December, when severe weather added to the restraint from a slowing economy. In January of this year, employment picked up, but the return of milder weather apparently accounted for a sizable portion of the gain.

Employment rose moderately in the private service-producing sector of the economy in 2000, about 2 percent overall after an increase of about 3 percent in 1999. In the fourth quarter, however, hiring in the services-producing sector was relatively slow, in large part because of a sizable decline in the number of jobs in personnel supply—a category that includes temporary help agencies. Employment in construction increased about 2½ percent in 2000 after several years of gains that were considerably larger. The number of jobs in manufacturing was down for a third year, owing to reductions in factory employment in the second half of the year, when manufacturers were adjusting to the slowing of demand. Those adjustments in manufacturing may also have involved some cutbacks in the employment of temporary hires, which would help to account for the sharp job losses in personnel supply. The average length of the workweek in manufacturing was scaled back as well over the second half of the year.

The slowing of the economy did not lead to any meaningful easing in the tightness of the labor market in 2000. The household survey's measure of the number of persons employed rose 1 percent, about in line with the expansion of labor supply. On net, the unemployment rate changed little; its fourth-quarter average of 4.0 percent was down just a tenth of a percentage point from the average unemployment rate in the fourth quarter of 1999. The flatness of the rate through the latter half of 2000, when the economy was slowing, may have partly reflected a desire of companies to hold on to labor resources that had been difficult to attract and retain in the tight labor market of recent years. January of this year brought a small increase in the rate, to 4.2 percent.

Productivity continued to rise rapidly in 2000. Output per hour in the nonfarm business sector was up about 3½ percent over the year as a whole. Sizable gains in efficiency continued to be evident even as the economy was slowing in the second half of the year. Except for 1999, when output per hour rose about 3¾ percent, the past year's increase was the largest since 1992, a year in which the economy was in cyclical recovery from the 1990–91 recession. Cutting through the year-to-year variations in measured productivity, the underlying trend still appears to have traced out a pattern of strong acceleration since the middle part of the 1990s. Support for a step-up in the trend has come from increases in the amount of capital per worker—especially high-tech capital—and from organizational efficiencies that have resulted in output rising faster than the combined inputs of labor and capital.

Alternative measures of the hourly compensation of workers, while differing in their coverage and methods of construction, were consistent in showing some acceleration this past year. The employment cost index for private industry (ECI), which attempts to measure changes in the labor costs of nonfarm businesses in a way that is free from the effects of employment shifts among occupations and industries, rose nearly 4½ percent during 2000 after having increased about 3½ percent in 1999. Compensation per hour in the nonfarm business sector, a measure that picks up some forms of employee compensation that the ECI omits but that also is more subject to eventual revision than the ECI, showed hourly compensation advancing 5¾ percent this past year, up from a 1999 increase of about 4½ percent. Tightness of the labor market was likely one factor underlying the acceleration of hourly compensation in 2000, with employers relying both on larger wage increases and more attractive benefit packages to attract and retain workers. Compensation gains may also have been influenced to some degree by the pickup of consumer price inflation since 1998. Rapid increases in the cost of health insurance contributed importantly to a sharp step-up in benefit costs.

Unit labor costs, the ratio of hourly compensation to output per hour, increased about 2¼ percent in the nonfarm business sector in 2000 after having risen slightly more than ½ percent in 1999. Roughly three-fourths of the acceleration was attributable to the faster rate of increase in compensation per hour noted above. The remainder stemmed from the small deceleration of measured productivity. The labor cost rise for the latest year was toward the high end of the range of the small to moderate increases that have prevailed over the past decade.

Prices

Led by the surge in energy prices, the aggregate price indexes showed some acceleration in 2000. The chain-type price index for real GDP, the broadest measure of goods and services *produced* domestically, rose 2¼ percent in 2000, roughly ¾ percentage point more than in 1999. The price index for gross domestic purchases, the broadest measure of prices for goods and services *purchased* by domestic buyers, posted a rise of almost 2½ percent in 2000 after having increased slightly less than 2 percent the previous year. Prices paid by consumers, as measured by the chain-type price index for personal consumption expenditures, picked up as well, about as much as the gross purchases index. The consumer price index (CPI) continued to move up at a faster pace than the PCE index this past year, and it exhibited slightly more acceleration—an increase of nearly 3½ percent in 2000 was ¾ percentage point larger than the 1999 rise. Price indexes for fixed investment and government purchases also accelerated this past year.

The prices of energy products purchased directly by consumers increased about 15 percent in 2000, a few percentage points more than in 1999. In response to the rise in world oil prices, consumer prices of motor fuels rose nearly 20 percent in 2000, bringing the cumulative price hike for those products over the past two years to roughly 45 percent. Prices also rose rapidly for home heating oil. Natural gas prices increased 30 percent, as demand for that fuel outpaced the growth of supply, pulling stocks down to low levels. Prices of natural gas this winter have been exceptionally high because of the added demand for heating that resulted from unusually cold weather in November and December. Electricity costs jumped for some users, and prices nationally rose faster than in other recent years, about 2¼ percent at the consumer level.

Alternative Measures of Price Change

Percent

Price measure	1999	2000
Chain-type		
Gross domestic product	1.6	2.3
Gross domestic purchases	1.9	2.4
Personal consumption expenditures	2.0	2.4
Excluding food and energy	1.5	1.7
Fixed-weight		
Consumer price index	2.6	3.4
Excluding food and energy	2.1	2.6

NOTE. Changes are based on quarterly averages and are measured to the fourth quarter of the year indicated from the fourth quarter of the preceding year.

Businesses had to cope with rising costs of energy in production, transportation, and temperature control. In some industries that depend particularly heavily on energy inputs, the rise in costs had a large effect on product prices. Producer prices of goods such as industrial chemicals posted increases that were well above the average rates of inflation last year, and rising prices for natural gas sparked especially steep price advances for nitrogen fertilizers used in farming. Prices of some services also exhibited apparent energy impacts: Producers paid sharply higher prices for transportation services via air and water, and consumer airfares moved up rapidly for a second year, although not nearly as much as in 1999. Late in 2000 and early this year, high prices for energy inputs prompted shutdowns in production at some companies, including those producing fertilizers and aluminum.

Despite the spillover of energy effects into other markets, inflation outside the energy sector remained moderate overall. The ongoing rise in labor productivity helped to contain the step-up in labor costs, and the slow rate of rise in the prices of non-oil imports meant that domestic businesses had to remain cautious about raising their prices because of the potential loss of market share. Rapid expansion of capacity in manufacturing prevented bottlenecks from developing in the goods-producing sector of the economy when domestic demand was surging early in the year; later on, an easing of capacity utilization was accompanied by a softening of prices in a number of industries. Inflation expectations, which at times in the past have added to the momentum of rising inflation, remained fairly quiescent in 2000.

Against this backdrop, core inflation remained low in 2000. Producer prices of intermediate materials excluding food and energy, after having accelerated through the first few months of 2000, slowed thereafter, and their four-quarter rise of 1¾ percent was only a bit larger than the increase during 1999. Prices of crude materials excluding food and energy fell moderately this past year after having risen about 10 percent a year earlier. At the consumer level, the CPI excluding food and energy moved up 2½ percent in 2000, an acceleration of slightly less than ½ percentage point from 1999 when put on a basis that maintains consistency of measurement. The rise in the chain-type price index for personal consumption expenditures excluding food and energy was 1¾ percent, just a bit above the increases recorded in each of the two previous years.

Consumer food prices rose 2½ percent in 2000 after an increase of about 2 percent in 1999. In large part, the moderate step-up in these prices probably reflected cost and price considerations similar to those at work elsewhere in the economy. Also, farm commodity prices moved up, on net, during 2000, after three years of sharp declines, and this turnabout likely showed through to the retail level to some extent. Meat prices, which are linked more closely to farm prices than is the case with many other foods, recorded increases that were appreciably larger than the increases for food prices overall.

The chain-type price index for private fixed investment rose about 1¾ percent in 2000, but that small increase amounted to a fairly sharp acceleration from the pace of the preceding few years, several of which had brought small declines in investment prices. Although the price index for investment in residential structures slowed a little, to about a 3½ percent rise, the index for nonresidential structures sped up from a 2¾ percent increase in 1999 to one of 4½ percent in 2000. Moreover, the price index for equipment and software ticked up slightly, after having declined 2 percent or more in each of the four preceding years. To a large extent, that turnabout was a reflection of a smaller rate of price decline for computers; they had dropped at an average rate of more than 20 percent through the second half of the 1990s but fell at roughly half that rate in 2000. Excluding computers, equipment prices increased slightly in 2000 after having declined a touch in 1999.

U.S. Financial Markets

Financial markets in 2000 were influenced by the changing outlook for the U.S. economy and monetary policy and by shifts in investors' perceptions of and attitudes toward risk. Private longer-term interest rates generally firmed in the early part of the year as growth remained unsustainably strong and as market participants anticipated a further tightening of monetary policy by the Federal Reserve. Later in the year, as it became apparent that the pace of economic growth was slowing, market participants began to incorporate expectations of significant policy easing into asset prices, and most longer-term interest rates fell sharply over the last several months of 2000 and into 2001. Over the course of the year, investors became more concerned about credit risk and demanded larger yield spreads to hold lower-rated corporate bonds, especially once the growth of the economy slowed in the second half. Banks, apparently having similar concerns, reported widening credit spreads on business loans and tightening standards for lending to businesses. Weakening economic growth and tighter financial conditions in some sectors led to a slowing in the pace of debt growth over the course of the year.

Stock markets had another volatile year in 2000. After touching record highs in March, stock prices turned lower, declining considerably over the last four months of the year. Valuations in some sectors fell precipitously from high levels, and near-term earnings forecasts were revised down sharply late in the year. On balance, the broadest stock indexes fell more than 10 percent last year, and the tech-heavy Nasdaq was down nearly 40 percent.

Interest Rates

The economy continued to expand at an exceptionally strong and unsustainable pace in the early part of 2000, prompting the Federal Reserve to tighten its policy stance in several steps ending at its May meeting. Private interest rates and shorter-term Treasury yields rose considerably over that period, reaching a peak just after the May FOMC meeting. Investors apparently became more concerned about credit risk as well; spreads between rates on lower-rated corporate bonds and swaps widened in the spring, adding to the upward pressure on private interest rates. Long-term Treasury yields, in contrast, remained below their levels from earlier in the year, as market participants became increasingly convinced that the supply of those securities would shrink considerably in coming years and incorporated a "scarcity premium" into their prices. By mid-May, with the rapid expansion of economic activity showing few signs of letting up, rates on federal funds and eurodollar futures, which can be used as a rough gauge of policy expectations, were indicating that market participants expected additional policy tightening going forward.

Signs of a slowdown in the growth of aggregate demand began to appear in the incoming data soon after the May FOMC meeting and continued to gradually accumulate over subsequent months. In response, market participants became increasingly convinced that the FOMC would not have to tighten its policy stance further, which was reflected in a flattening of the term structure of rates on federal funds and eurodollar futures. Interest rates on most corporate bonds declined gradually on the shifting outlook for the economy, and by the end of August had fallen more than ½ percentage point from their peaks in May.

Most market interest rates continued to edge lower into the fall, as the growth of the economy seemed to moderate further. Over the last couple months of 2000 and into early 2001, as it became apparent that economic growth was slowing more abruptly, market participants sharply revised down their expectations for future short-term interest rates. Treasury yields plummeted over that period, particularly at shorter maturities: The two-year Treasury yield dropped more than a full percentage point from mid-November to early January, moving below the thirty-year yield for the first time since early 2000. Yields on inflation-indexed securities also fell considerably, but by less than their nominal counterparts, suggesting that the weakening of economic growth lowered expectations of both real interest rates and inflation.

Although market participants had come to expect considerable policy easing over the first part of this year, the timing and magnitude of the intermeeting cut in the federal funds rate in early January was a surprise. In response, investors built into asset prices anticipations of a more rapid policy easing over the near-term. Indeed, the further substantial reduction in the federal funds rate implemented at the FOMC meeting later that month was largely expected and elicited little response in financial markets. Even with a full percentage point reduction in the federal funds rate in place, futures rates have recently pointed to expectations of additional policy easing over coming months. Investors appear to be uncertain about this outlook, however, judging from the recent rise in the implied volatilities of interest rates derived from option prices. On balance since the beginning of 2000, the progressive easing in the economic outlook, in combination with the effects of actual and prospective reductions in the supply of Treasury securities, has resulted in a sizable downward shift in the Treasury yield curve.

The prospect of a weakening in economic growth, along with sizable declines in equity prices and downward revisions to profit forecasts, apparently caused investors to reassess credit risks in the latter part of last year. Spreads between rates on high-yield corporate bonds and swaps soared beginning in September, pushing the yields on those bonds substantially higher. Concerns about credit risk also spilled over into the investment-grade sector, where yield spreads widened considerably for lower-rated securities. For most investment-grade issuers, though, the effects of the revised policy outlook more than offset any widening in risk spreads, resulting in a decline in private interest rates in the fourth quarter. Since the first policy easing in early January, yield spreads on corporate bonds have narrowed considerably, including a particularly large drop in the spread on high-yield bonds. Overall, yields on most investment-grade corporate bonds have reached their lowest levels since the first half of 1999, while rates on most high-yield bonds have fallen about 2 percentage points from their peaks and have reached levels similar to those of mid-2000.

Although investors at times in recent months appeared more concerned about credit risk than they were in the fall of 1998, the recent financial environment, by most accounts, did not resemble the market turbulence and disruption of that time. The Treasury and investment-grade corporate bond markets remained relatively liquid, and the investment-grade market easily absorbed the high volume of bond issuance over 2000. Investors continued to show a heightened preference for larger, more liquid corporate issues, but they did not exhibit the extreme desire for liquidity that was apparent in the fall of 1998. For example, the liquidity premium for the on-the-run ten-year Treasury note this year remained well below the level of that fall.

Nonetheless, the Treasury market has become somewhat less liquid than it was several years ago. Moreover, in 2000, particular segments of the Treasury market occasionally experienced bouts of unusually low liquidity that appeared related to actual or potential reductions in the supply of individual securities. Given the possibility that liquidity could deteriorate further as the Treasury continues to pay down its debt, market participants reportedly increased their reliance on alternative instruments—including interest rate swaps and debt securities issued by government-sponsored housing agencies and other corporations—for some of the hedging and pricing functions historically provided by Treasury securities. Fannie Mae and Freddie Mac continued to issue large amounts of debt under their Benchmark and Reference debt programs, which are designed to mimic characteristics of Treasury securities—such as large issue sizes and a regular calendar of issuance—that are believed to contribute to their liquidity. By the end of 2000, the two firms together had more than $300 billion of notes and bonds and more than $200 billion of bills outstanding under those programs. Trading volume and dealer positions in agency securities have risen considerably since 1998, and the market for repurchase agreements in those securities has reportedly become more active. Also, several exchanges listed options and futures on agency debt securities. Open interest on some of those futures contracts has picked up significantly, although it remains small compared to that on futures contracts on Treasury securities.

The shrinking supply of Treasury securities and the possibility of a consequent decline in market liquidity also pose challenges for the Federal Reserve. For many years, Treasury securities have provided the Federal Reserve with an effective asset for System portfolio holdings and the conduct of monetary policy. The remarkable liquidity of Treasury securities has allowed the System to conduct sizable policy operations quickly and with little disruption to markets, while the safety of Treasury securities has allowed the System to avoid credit risk in its portfolio. However, if Treasury debt continues to be paid down, at some point the amount outstanding will be insufficient to meet the Federal Reserve's portfolio needs. Well before that time, the proportion of Treasury securities held by the System could reach levels that would significantly disrupt the Treasury market and make monetary policy operations increasingly difficult or costly. Recognizing this possibility, last year the FOMC initiated a study to consider alternative approaches to managing the Federal Reserve's portfolio, including expanding the use of the discount window and broadening the types of assets acquired in the open market. As it continues to study various alternatives, the FOMC will take into consideration the effect that such approaches might have on the liquidity and safety of its portfolio and the potential for distorting the allocation of credit to private entities.

Meanwhile, some measures have been taken to prevent the System's holdings of individual Treasury securities from reaching possibly disruptive levels and to help curtail any further lengthening of the average maturity of the System's holdings. On July 5, 2000, the Federal Reserve Bank of New York announced guidelines limiting the System's holdings of individual Treasury securities to specified percentages of their outstanding amounts, depending on the remaining maturity of the issue. Those limits range from 35 percent for Treasury bills to 15 percent for longer-term bonds. As a result, the System has redeemed some of its holdings of Treasury securities on occasions when the amount of maturing holdings has exceeded the amount that could be rolled over into newly issued Treasury securities under these limits. Redemptions of Treasury holdings in 2000 exceeded $28 billion, with more than $24 billion of the redemptions in Treasury bills. In addition, the Federal Reserve accommodated a portion of the demand for reserves last year by increasing its use of longer-term repurchase agreements rather than by purchasing Treasury securities outright. The System maintained an average of more than $15 billion of longer-term repurchase agreements over 2000, typically with maturities of twenty-eight days.

Equity Prices

After having moved higher in the first quarter of 2000, equity prices reversed course and finished the year with considerable declines. Early in the year, the rapid pace of economic activity lifted corporate profits, and stock analysts became even more optimistic about future earnings growth. In response, most major equity indexes reached record highs in March, with the Wilshire 5000 rising 6¾ percent above its 1999 year-end level and the Nasdaq soaring 24 percent, continuing its rapid run-up from the second half of 1999. Equity prices fell from these highs during the spring, with a particularly steep drop in the Nasdaq, as investors grew more concerned about the lofty valuations of some sectors and the prospect of higher interest rates.

Broader equity indexes recovered much of those losses through August, supported by the decline in market interest rates and the continued strength of earnings growth in the second quarter. But from early September through the end of the year, stock prices fell considerably in response to the downshift in economic growth, a reassessment of the prospects for some high-tech industries, and disappointments in corporate earnings. In December and January, equity analysts significantly reduced their forecasts for year-ahead earnings for the S&P 500. However, analysts apparently view the slowdown in earnings as short-lived, as long-run earnings forecasts did not fall much and remain at very high levels, particularly for the technology sector.

On balance, the Wilshire 5000 index fell 12 percent over 2000—its first annual decline since 1994. The Nasdaq composite plunged 39 percent, leaving it at year-end more than 50 percent below its record high and erasing nearly all of its gains since the beginning of 1999. The broad decline in equity prices last year is estimated to have lopped more than $1¾ trillion from household wealth, or more than 4 percent of the total net worth of households. Nevertheless, the level of household net worth is still quite high—about 50 percent above its level at the end of 1995. Investors continued to accumulate considerable amounts of equity mutual funds over 2000, although they may have become increasingly discouraged by losses on their equity holdings toward the end of the year, when flows into equity funds slumped. At that time, money market mutual funds expanded sharply, as investors apparently sought a refuge for financial assets amid the heightened volatility and significant drops in equity prices. So far in 2001, major equity indexes are little changed, on balance, as the boost from lower interest rates has been countered by continued disappointments over corporate earnings.

Some of the most dramatic plunges in share prices in 2000 took place among technology, telecommunications, and Internet shares. While these declines partly stemmed from downward revisions to near-term earnings estimates, which were particularly severe in some cases, they were also driven by a reassessment of the elevated valuations of many companies in these sectors. The price–earnings ratio (calculated using operating earnings expected over the next year) for the technology component of the S&P 500 index fell substantially from its peak in early 2000, although it remains well above the ratio for the S&P 500 index as a whole. For the entire S&P 500 index, share prices fell a bit more in percentage terms than the downward revisions to year-ahead earnings forecasts, leaving the price–earnings ratio modestly below its historical high.

The volatility of equity price movements during 2000 was at the high end of the elevated levels observed in recent years. In the technology sector, the magnitudes of daily share price changes were at times remarkable. There were twenty-seven days during 2000 in which the Nasdaq composite index moved up or down by at least 5 percent; by comparison, such outsized movements were observed on a total of only seven days from 1990 to 1999.

Despite the volatility of share price movements and the large declines on balance over 2000, equity market conditions were fairly orderly, with few reports of difficulties meeting margin requirements or of large losses creating problems that might pose broader systemic concerns. The fall in share prices reined in some of the margin debt of equity investors. After having run up sharply through March, the amount of outstanding margin debt fell by about 30 percent over the remainder of the year. At year-end, the ratio of margin debt to total equity market capitalization was slightly below its level a year earlier.

The considerable drop in valuations in some sectors and the elevated volatility of equity price movements caused the pace of initial public offerings to slow markedly over the year, despite a large number of companies waiting to go public. The slowdown was particularly pronounced for technology companies, which had been issuing new shares at a frantic pace early in the year. In total, the dollar amount of initial public offerings by domestic nonfinancial companies tapered off in the fourth quarter to its lowest level in two years and has remained subdued so far in 2001.

Debt and the Monetary Aggregates

Debt and Depository Intermediation

Aggregate debt of domestic nonfinancial sectors increased an estimated 5¼ percent over 2000, a considerable slowdown from the gains of almost 7 percent posted in 1998 and 1999. The expansion of nonfederal debt moderated to 8½ percent in 2000 from 9½ percent in 1999; the slowing owed primarily to a weakening of consumer and business borrowing in the second half of the year, as the growth of durables consumption and capital expenditures fell off and financial conditions tightened for some firms. Some of the slowdown in total nonfinancial debt was also attributable to the federal government, which paid down 6¾ percent of its debt last year, compared with 2½ percent in 1999. In 1998 and 1999, domestic nonfinancial debt increased faster than nominal GDP, despite the reduction in federal debt over those years. The ratio of nonfinancial debt to GDP edged down in 2000, however, as the federal debt paydown accelerated and nonfederal borrowing slowed.

Depository institutions continued to play an important role in meeting the demand for credit by businesses and households. Credit extended by commercial banks, after adjustment for mark-to-market accounting rules, increased 10 percent over 2000, well above the pace for total nonfinancial debt. Bank credit expanded at a particularly brisk rate through late summer, when banks, given their ample capital base and solid profits, were willing to meet strong loan demand by households and businesses. Over the remainder of the year, the growth of bank credit declined appreciably, as banks became more cautious lenders and as several banks shed large amounts of government securities.

Banks reported a deterioration of the quality of their business loan portfolios last year. Delinquency and charge-off rates on C&I loans, while low by historical standards, rose steadily, partly reflecting some repayment difficulties in banks' syndicated loan portfolios. Several large banks have stated that the uptrend in delinquencies is expected to continue in 2001. Higher levels of provisioning for loan losses and some narrowing of net interest margins contributed to a fallback of bank profits from the record levels of 1999. In addition, capitalization measures slipped a bit last year. Nevertheless, by historical standards banks remained quite profitable overall and appeared to have ample capital. In the aggregate, total capital (the sum of tier 1 and tier 2 capital) remained above 12 percent of risk-weighted assets over the first three quarters of last year, more than two percentage points above the minimum level required to be considered well-capitalized.

In response to greater uncertainty about the economic outlook and a reduced tolerance for risk, increasing proportions of banks reported tightening standards and terms on business loans during 2000 and into 2001, with the share recently reaching the highest level since 1990. The tightening became widespread for loans to large and middle-market firms. A considerable portion of banks reported firming standards and terms on loans to small businesses as well, consistent with surveys of small businesses indicating that a larger share of those firms had difficulty obtaining credit in 2000 than in previous years. With delinquency rates for consumer and real estate loans having changed little, on net, last year, banks did not tighten credit conditions significantly for loans to households over the first three quarters of 2000. More recently, however, an increasing portion of banks increased standards and terms for consumer loans other than credit cards, and some of the banks surveyed anticipated a further tightening of conditions on consumer loans during 2001.

The Monetary Aggregates

The monetary aggregates grew rather briskly last year. The expansion of the broadest monetary aggregate, M3, was particularly strong over the first three quarters of 2000, as the robust growth in depository credit was partly funded through issuance of the managed liabilities included in this aggregate, such as large time deposits. M3 growth eased somewhat in the fourth quarter because the slowing of bank credit led depository institutions to reduce their reliance on managed liabilities. Institutional money funds increased rapidly throughout 2000, despite the tightening of policy early in the year, in part owing to continued growth in their provision of cash management services for businesses. For the year as a whole, M3 expanded 9¼ percent, well above the 7¾ percent pace in 1999. This advance again outpaced that of nominal income, and M3 velocity—the ratio of nominal income to M3—declined for the sixth year in a row.

M2 increased 6¼ percent in 2000, about unchanged from its pace in 1999. Some slowing in M2 growth would have been expected based on the rise in short-term interest rates over the early part of the year, which pushed up the "opportunity cost" of holding M2, given that the

Growth of Money and Debt

Percent

Period	M1	M2	M3	Domestic non-financial debt
Annual[1]				
1990	4.2	4.2	1.9	6.7
1991	7.9	3.1	1.2	4.5
1992	14.4	1.8	.6	4.5
1993	10.6	1.3	1.0	4.9
1994	2.5	.6	1.7	4.8
1995	–1.5	3.8	6.1	5.4
1996	–4.5	4.5	6.8	5.3
1997	–1.2	5.6	8.9	5.4
1998	2.2	8.4	10.9	6.9
1999	1.8	6.2	7.7	6.8
2000	–1.5	6.3	9.2	5.3
Quarterly (annual rate)[2]				
2000:Q1	2.0	5.8	10.6	5.6
Q2	–1.8	6.4	9.0	6.2
Q3	–3.7	5.8	8.9	4.7
Q4	–2.7	6.6	7.1	4.1

NOTE. M1 consists of currency, travelers checks, demand deposits, and other checkable deposits. M2 consists of M1 plus savings deposits (including money market deposit accounts), small-denomination time deposits, and balances in retail money market funds. M3 consists of M2 plus large-denomination time deposits, balances in institutional money market funds, RP liabilities (overnight and term), and eurodollars (overnight and term). Debt consists of the outstanding credit market debt of the U.S. government, state and local governments, households and nonprofit organizations, nonfinancial businesses, and farms.

1. From average for fourth quarter of preceding year to average for fourth quarter of year indicated.

2. From average for preceding quarter to average for quarter indicated.

interest rates on many components of M2 do not increase by the same amount or as quickly as market rates. However, with the level of long-term rates close to that of short-term rates, investors had much less incentive to shift funds out of M2 assets and into assets with longer maturities, which helped support M2 growth. M2 was also boosted at times by households' increased preference for safe and liquid assets during periods of heightened volatility in equity markets. On balance over the year, the growth of M2 slightly exceeded that of nominal income, and M2 velocity edged down.

The behavior of the components of M2 was influenced importantly by interest rate spreads. The depressing effect of higher short-term market interest rates was most apparent in the liquid deposit components, including checkable deposits and savings accounts, whose rates respond very sluggishly to movements in market rates. Small time deposits and retail money market mutual funds, whose rates do not lag market rates as much, expanded considerably faster than liquid deposits. Currency growth was held down early in the year by a runoff of the stockpile accumulated in advance of the century date change. In addition, it was surprisingly sluggish over the balance of the year given the rapid pace of income growth, with weakness apparently in both domestic and foreign demands.

International Developments

In 2000, overall economic activity in foreign economies continued its strong performance of the previous year. However, in both industrial and developing countries, growth was strongest early, and clear signs of a general slowing emerged later in the year. Among industrial countries, growth in Japan last year moved up to an estimated 2 percent, and growth in the euro area slowed slightly to 3 percent. Emerging market economies in both Asia and Latin America grew about 6 percent on average in 2000. For Asian developing economies, this represented a slowing from the torrid pace of the previous year, while growth in Latin America, especially Mexico, picked up from 1999. Average foreign inflation edged up slightly to 3 percent, mainly reflecting higher oil prices. Over the first part of the year, monetary authorities moved to tighten conditions in many industrial countries, in reaction to continued strong growth in economic activity that was starting to impinge on capacity constraints, as well as some upward pressures on prices. Interest rates on long-term government securities declined on balance in most industrial countries, especially toward year-end when evidence of a slowdown in global economic growth started to emerge.

Conditions in foreign financial markets were somewhat more unsettled than in the previous year. Overall stock indexes in the foreign industrial countries generally declined, most notably in Japan. As in the United States, technology-oriented stock indexes were extremely volatile during the year. After reaching peaks in the first quarter, they started down while experiencing great swings toward mid-year, then fell sharply in the final quarter, resulting in net declines for the year of one-third or more. Stock prices in emerging market economies were generally quite weak, especially in developing Asia, where growth in recent years has depended heavily on exports of high-tech goods. Although there was no major default or devaluation among emerging market economies, average risk spreads on developing country debt still moved higher on balance over the course of the year, as the threat of potential crises in several countries, most notably Argentina and Turkey, heightened investor concerns.

The dollar's average foreign exchange value increased over most of the year, supported by continued robust growth of U.S. activity, rising interest rates on dollar assets, and market perceptions that longer-term prospects for U.S. growth and rates of return were more favorable than in other industrial countries. Part of the rise in the dollar's average value was reversed late in the year when evidence emerged that the pace of U.S. activity was slowing much more sharply than had been expected. Despite this decline, the dollar's average foreign exchange value against the currencies of other major foreign industrial countries recorded a net increase of over 7 percent for the year as a whole. The dollar also strengthened nearly as much on balance against the currencies of the most important developing country trading partners of the United States. So far this year, the dollar's average value has remained fairly stable.

Industrial Economies

The dollar showed particular strength last year against the euro, the common currency of much of Europe. During the first three quarters of the year, the euro continued to weaken, and by late October had fallen to a low of just above 82 cents, nearly one-third below its value when it was introduced in January 1999. The euro's decline against the dollar through most of last year appeared to be due mainly to the vigorous growth of real GDP and productivity in the United States contrasted with steady but less impressive improvements in Europe. In addition, investors may have perceived that Europe was slower to adopt "new economy" technologies, making it a relatively less attractive investment climate. In September, a concerted intervention operation by the monetary authorities of the G-7 countries, including the United States, was undertaken at the request of European authorities to provide support for the euro. The European Central Bank also made intervention purchases of euros on several occasions acting on its own. Late in the year, the euro abruptly changed course and started to move up strongly, reversing over half of its decline of earlier in the year. This recovery of the euro against the dollar appeared to reflect mainly a market perception that, while growth was slowing in both Europe and the United States, the slowdown was much sharper for the United States. For the year as a whole, the dollar appreciated, on net, about 7 percent against the euro.

The European Central Bank raised its policy interest rate target six times by a total of 175 basis points over the first ten months of the year. These increases reflected concerns that the euro's depreciation, tightening capacity constraints and higher oil prices would put upward pressure on inflation. While core inflation—inflation excluding food and energy—remained well below the 2 percent inflation target ceiling, higher oil prices pushed the headline rate above the ceiling for most of the year. Real GDP in the euro area is estimated to have increased about 3 percent for 2000 as a whole, only slightly below the rate of the previous year, although activity slowed toward the end of the year. Growth was supported by continued strong increases in investment spending. Net exports made only a modest contribution to growth, as rapid increases in exports were nearly matched by robust imports. Overall activity was sufficiently strong to lead to a further decline in the average euro-area unemployment rate to below 9 percent, a nearly 1 percentage point reduction for the year.

The dollar rose about 12 percent against the Japanese yen over the course of 2000, roughly reversing the decline of the previous year. Early in the year, the yen experienced periods of upward pressure on evidence of a revival of activity in Japan. On several of these occasions, the Bank of Japan made substantial intervention sales of yen. By August, signs of recovery were strong enough to convince the Bank of Japan to end the zero interest rate policy that it had maintained for nearly a year and a half, and its target for the overnight rate was raised to 25 basis points. Later in the year, evidence emerged suggesting that the nascent recovery in economic activity was losing steam, and in response the yen started to depreciate sharply against the dollar.

For the year as a whole, Japanese real GDP is estimated to have increased about 2 percent, a substantial improvement from the very small increase of the previous year and the decline recorded in 1998. Growth, which was concentrated in the first part of the year, was led by private nonresidential investment. In contrast, residential investment slackened as the effect of tax incentives waned. Consumption rebounded early in the year from a sharp decline at the end of 1999 but then stagnated, depressed in part by record-high unemployment and concerns that ongoing corporate restructuring could lead to further job losses. Public investment, which gave a major boost to the economy in 1999, remained strong through the first half of last year but then fell off sharply, and for the year as a whole the fiscal stance is estimated to have been somewhat contractionary. Inflation was negative for the second consecutive year, with the prices of both consumer goods and real estate continuing to move lower.

The dollar appreciated 4 percent relative to the Canadian dollar last year. Among the factors that apparently contributed to the Canadian currency's weakness were declines in the prices of commodities that Canada exports, such as metals and lumber, and a perception by market participants of unfavorable differentials in rates of return and economic growth prospects in Canada relative to the United States. For the year as a whole, real GDP growth in Canada is estimated to have been only slightly below the strong 5 percent rate of 1999, although, as in most industrial countries, there were signs that the pace of growth was tailing off toward the end of the year. Domestic demand continued to be robust, led by surging business investment and solid personal consumption increases. In the first part of the year, the sustained rapid growth of the economy led Canadian monetary authorities to become increasingly concerned with a buildup of inflationary pressures, and the Bank of Canada matched all of the Federal Reserve's interest rate increases in 2000, raising its policy rate by a total of 100 basis points. By the end of the year, the core inflation rate had risen to near the middle of the Bank of Canada's 1 percent to 3 percent target range, while higher oil prices pushed the overall rate above the top of the range. So far this year, the Bank of Canada has only partially followed the Federal Reserve in lowering interest rates, and the Canadian dollar has remained little changed.

Emerging Market Economies

In emerging market economies, the average growth rate of economic activity in 2000 remained near the very strong 6 percent rate of the previous year. However, there was a notable and widespread slowing near the end of the year, and results in a few individual countries were much less favorable. Growth in developing Asian economies slowed on average from the torrid pace of the previous year, while average growth in Latin America picked up somewhat. No major developing country experienced default or devaluation in 2000, but nonetheless, financial markets did undergo several periods of heightened unrest during the year. In the spring, exchange rates and equity prices weakened and risk spreads widened in many emerging market economies at a time of a general heightening of financial market volatility and rising interest rates in industrial countries, as well as increased political uncertainty in several developing countries. After narrowing at mid-year, risk spreads on emerging market economy debt again widened later in the year, reflecting a general movement on financial markets away from riskier assets, as well as concerns that Argentina and Turkey might be facing financial crises that could spread to other emerging market economies. Risk spreads generally narrowed in the early part of 2001.

Among Latin American countries, Mexico's performance was noteworthy. Real GDP rose an estimated 7 percent, an acceleration from the already strong result of the previous year. Growth was boosted by booming exports, especially to the United States, favorable world oil prices, and a rebound in domestic demand. In order to keep inflation on a downward path in the face of surging domestic demand, the Bank of Mexico tightened monetary conditions six times last year, pushing up short-term interest rates, and by the end of the year the rate of consumer price inflation had moved below the 10 percent inflation target. The run-up to the July presidential election generated some sporadic financial market pressures, but these subsided in reaction to the smooth transition to the new administration. Over the course of the year, the risk spread on Mexican debt declined on balance, probably reflecting a favorable assessment by market participants of macroeconomic developments and government policies, reinforced by rating upgrades of Mexican debt. During 2000, the peso depreciated slightly against the dollar, but by less than the excess of Mexican over U.S. inflation.

Argentina encountered considerable financial distress last year. Low tax revenues due to continued weak activity along with elevated political uncertainty greatly heightened market concerns about the ability of the country to fund its debt. Starting in October, domestic interest rates and debt risk spreads soared amid market speculation that the government might lose access to credit markets and be forced to abandon the exchange rate peg to the dollar. Financial markets began to recover after an announcement in mid-November that an IMF-led international financial support package was to be put in place. Further improvement came in the wake of an official announcement in December of a $40 billion support package. The fall in U.S. short-term interest rates in January eased pressure on Argentina's dollar-linked economy as well.

Late in the year, Brazilian financial markets received some negative spillover from the financial unrest in Argentina, but conditions did not approach those prevailing during Brazil's financial crisis of early 1999. For 2000 as a whole, the Brazilian economy showed several favorable economic trends. Real GDP growth increased to an estimated 4 percent after being less than 1 percent the previous two years, inflation continued to move lower, and short-term interest rates declined.

Growth in Asian developing countries in 2000 slowed from the previous year, when they had still been experiencing an exceptionally rapid bounceback from the 1997–1998 financial crises experienced by several countries in the region. In Korea, real GDP growth last year is estimated to have been less than half of the blistering 14 percent rate of 1999. Korean exports, especially of high-tech products, started to fade toward the end of 2000. Rapid export growth had been a prominent feature of the recovery of Korea and other Asian developing economies following their financial crises. In addition, a sharp fall in Korean equity prices over the course of the year, as well as continued difficulties with the process of financial and corporate sector restructuring, tended to depress consumer and business confidence. These developments contributed to the downward pressure on the won seen near the end of the year. Elsewhere in Asia, market concerns over heightened political instability were a major factor behind financial pressures last year in Indonesia, Thailand, and the Philippines. In China, output continued to expand rapidly in 2000, driven by a combination of surging exports early in the year, sustained fiscal stimulus, and some recovery in private consumption. In contrast, growth in both Hong Kong and Taiwan slowed, especially in the latter part of the year. In Taiwan, the exchange rate and stock prices both came under downward pressure as a result of the slowdown in global electronics demand and apparent market concerns over revelations of possible weaknesses in the banking and corporate sectors.

Turkey's financial markets came under severe strain in late November as international investors withdrew capital amid market worries about the health of Turkey's banks, the viability of the government's reform program and its crawling peg exchange rate regime, and the widening current account deficit. The resulting liquidity shortage caused short-term interest rates to spike up and led to a substantial decline in foreign exchange reserves held by the central bank. Markets stabilized somewhat after it was announced in December that Turkey had been able to reach loan agreements with the IMF, major international banks, and the World Bank in an effort to provide liquidity and restore confidence in the banking system.

Report submitted to the Congress on July 18, 2001, pursuant to section 2B of the Federal Reserve Act

Report of July 18, 2001

Monetary Policy and the Economic Outlook

When the Federal Reserve submitted its report on monetary policy in mid-February, the Federal Open Market Committee (FOMC) had already reduced its target for the federal funds rate twice to counter emerging weakness in the economy. As the year has unfolded, the weakness has become more persistent and widespread than had seemed likely last autumn. The shakeout in the high-technology sector has been especially severe, and with overall sales and profits continuing to disappoint, businesses are curtailing purchases of other types of capital equipment as well. The slump in demand for capital goods has also worked against businesses' efforts to correct the inventory imbalances that emerged in the second half of last year and has contributed to sizable declines in manufacturing output this year. At the same time, foreign economies have slowed, limiting the demand for U.S. exports.

To foster financial conditions that will support strengthening economic growth, the FOMC has lowered its target for the federal funds rate four times since February, bringing the cumulative decline this year to 2¾ percentage points. A number of factors spurred this unusually steep reduction in the federal funds rate. In particular, the slowdown in growth was rapid and substantial and carried considerable risks that the sluggish performance of the economy in the first half of this year would persist. Among other things, the abruptness of the slowing, by jarring consumer and business confidence, raised the possibility of becoming increasingly self-reinforcing were households and businesses to postpone spending while reassessing their situations. In addition, other financial developments, including a higher foreign exchange value of the dollar, lower equity prices, and tighter lending terms and standards at banks, were tending to restrain aggregate demand and thus were offsetting some of the influence of the lower federal funds rate. Finally, despite some worrisome readings early in the year, price increases remained fairly well contained, and prospects for inflation have become less of a concern as rates of resource utilization have declined and energy prices have shown signs of turning down.

The information available at midyear for the recent performance of both the U.S. economy and some of our key trading partners remains somewhat downbeat, on balance. Moreover, with inventories still excessive in some sectors, orders for capital goods very soft, and the effects of lower stock prices and the weaker job market weighing on consumers, the economy may expand only slowly, if at all, for a while longer. Nonetheless, a number of factors are in place that should set the stage for stronger growth later this year and in 2002. In particular, interest rates have declined since last fall; the lower rates have helped businesses and households strengthen their financial positions and should show through to aggregate demand in coming quarters. The recently enacted tax cuts and the apparent cresting of energy prices should also bolster aggregate demand fairly soon. In addition, as firms at some point become more satisfied with their inventory holdings, the cessation of liquidation will boost production and, in turn, provide a lift to employment and incomes; a subsequent shift to inventory accumulation in association with the projected strengthening in demand should provide additional impetus to production. Moreover, with no apparent sign of abatement in the rapid pace of technological innovation, the outlook for productivity growth over the longer run remains favorable. The efficiency gains made possible by these innovations should spur demand for the capital equipment that embodies the new technologies once the overall economic situation starts to improve and should support consumption by leading to solid increases in real incomes over time.

Even though an appreciable recovery in the growth of economic activity by early next year seems the most likely outcome, there is as yet no hard evidence that this improvement is in train, and the situation remains very uncertain. In these circumstances, the FOMC continues to believe that the risks are weighted toward conditions that may generate economic weakness in the foreseeable future. At the same time, the FOMC recognizes the importance of sustaining the environment of low inflation and well-anchored inflation expectations that enabled the Federal Reserve to react rapidly and forcefully to the slowing in real GDP growth over the past several quarters. When, as the FOMC expects, activity begins to firm, the Committee will continue to ensure that financial conditions remain consistent with holding inflation in check, a key requirement for maximum sustainable growth.

Monetary Policy, Financial Markets, and the Economy over the First Half of 2001

By the time of the FOMC meeting on December 19, 2000, it had become evident that economic growth had downshifted considerably, but the extent of that slowing was only beginning to come into focus. At that meeting, the FOMC concluded that the risks to the economy in the foreseeable future had shifted to being weighted mainly toward conditions that may generate economic weakness and that economic and financial developments could warrant further close review of the stance of policy well before the next scheduled meeting. Subsequent data indicated that holiday retail sales had come in below expectations and that conditions in the manufacturing sector had deteriorated. Corporate profit forecasts had also been marked down, and it seemed possible that the resulting decline in equity values, along with the expense of higher energy costs, could damp future business investment and household spending. In response, the FOMC held a telephone conference on January 3, 2001, and decided to reduce the target federal funds rate ½ percentage point, to 6 percent, and indicated that the risks to the outlook remained weighted toward economic weakness.

The timing and size of the cut in the target rate seemed to ease somewhat the concerns of financial market participants about the longer-term outlook for the economy. Equity prices generally rose in January, risk spreads on lower-rated corporate bonds narrowed significantly, and the yield curve steepened. However, incoming data over the month revealed that the slowing in consumer and business spending late last year had been sizable. Furthermore, a sharp erosion in survey measures of consumer confidence, a backup of inventories, and a steep decline in capacity utilization posed the risk that spending could remain depressed for some time. In light of these developments, the FOMC at its scheduled meeting on January 30 and 31 cut its target for the federal funds rate another ½ percentage point, to 5½ percent, and stated that it continued to judge the risks to be weighted mainly toward economic weakness.

The information reviewed by the FOMC at its meeting on March 20 suggested that economic activity continued to expand, but slowly. Although consumer spending seemed to be rising moderately and housing had remained relatively firm, stock prices had declined substantially in February and early March, and reduced equity wealth and lower consumer confidence had the potential to damp household spending going forward. Moreover, manufacturing output had contracted further, as businesses continued to work down their excess inventories and cut back on capital equipment expenditures. In addition, economic softness abroad raised the likelihood of a weakening in U.S. exports. Core inflation had picked up a bit in January, but some of the increase reflected the pass-through of a rise in energy prices that was unlikely to continue, and the FOMC judged that the slowdown in the growth of aggregate demand would ease inflationary pressures on labor and other resources. Accordingly, the FOMC on March 20 lowered its target for the federal funds rate another ½ percentage point, to 5 percent. The members also continued to see the risks to the outlook as remaining weighted mainly toward economic weakness. Furthermore, the FOMC recognized that in a rapidly evolving economic situation, it would need to be alert to the possibility that a conference call would be desirable during the relatively long interval before the next scheduled meeting to discuss the possible need for a further policy adjustment.

Capital markets continued to soften in late March and early April, in part because corporate profits and economic activity remained quite weak. Although equity prices and bond yields began to rise in mid-April as financial market investors became more confident that a cumulative downward spiral in activity could be avoided, reports continued to suggest flagging economic performance and risks of extended weakness ahead. In particular, spending by consumers had leveled out and their confidence had fallen further. The FOMC discussed economic developments in conference calls on April 11 and April 18, deciding on the latter occasion to reduce its target for the federal funds rate another ½ percentage point, to 4½ percent. The Committee again indicated that it judged the balance of risks to the outlook as weighted toward economic weakness.

When the FOMC met on May 15, economic conditions remained quite sluggish, especially in manufacturing, where production and employment had declined further. Although members were concerned that some indicators of core inflation had moved up in the early months of the year and that part of the recent backup in longer-term interest rates may have owed to increased inflation expectations, most saw underlying price increases as likely to remain damped as continued subpar growth relieved pressures on resources. In light of the prospect of continued weakness in the economy and the significant risks to the economic expansion, the FOMC reduced its target for the federal funds rate an additional ½ percentage point, to 4 percent. With the softening in aggregate demand still of unknown persistence and dimension, the FOMC continued to view the risks to the outlook as weighted toward economic weakness. Still, the FOMC recognized that it had eased policy substantially this year and that, in the absence of further sizable adverse shocks to the economy, at future meetings it might need to consider adopting a more cautious approach to further policy actions.

Subsequent news on economic activity and corporate profits failed to point to a rebound. In June, interest rates on longer-term Treasuries and on higher-quality private securities declined, some risk spreads widened, and stock prices fell as financial market participants trimmed their expectations for economic activity and profits. When the FOMC met on June 26 and 27, conditions in manufacturing appeared to have worsened still more. It also seemed likely that slower growth abroad would restrain demand for exports and that weakening labor markets would hold down growth in consumer spending. In light of these developments, but also taking into account the cumulative 250 basis points of easing already undertaken and the other forces likely to be stimulating spending in the future, the FOMC lowered its target for the federal funds rate ¼ percentage point, to 3¾ percent, and continued to view the risks to the outlook as weighted toward economic weakness.

The Board of Governors of the Federal Reserve System approved cuts in the discount rate in the first half of the year that matched the FOMC's cuts in the target federal funds rate. As a result, the discount rate declined from 6 percent to 3¼ percent over the period.

Economic Projections for 2001 and 2002

The members of the Board of Governors and the Federal Reserve Bank presidents, all of whom participate in the deliberations of the FOMC, expect economic growth to remain slow in the near term, though most anticipate that it will pick up later this year at least a little. The central tendency of the forecasts for the increase in real GDP over the four quarters of 2001 spans a range of 1¼ percent to 2 percent, and the central tendency of the forecasts for real GDP growth in 2002 is 3 percent to 3¼ percent. The civilian unemployment rate, which averaged 4½ percent in the second quarter of 2001, is expected to move up to the area of 4¾ percent to 5 percent by the end of this year. In 2002, with the economy projected to expand at closer to its trend rate, the unemployment rate is expected to hold steady or perhaps to edge higher. With pressures in labor and product markets abating and with energy prices no longer soaring, inflation is expected to be well contained over the next year and a half.

Despite the projected increase in real GDP growth, the uncertainty about the near-term outlook remains considerable.

Economic Projections for 2001 and 2002

Percent

Indicator	Board of Governors and Reserve Bank presidents: Range	Central tendency
	2001	
Change, fourth quarter to fourth quarter[1]		
Nominal GDP	3¼–5	3½–4¼
Real GDP[2]	1–2	1¼–2
PCE prices	2–2¾	2–2½
Average level, fourth quarter		
Civilian unemployment rate	4¾–5	4¾–5
	2002	
Change, fourth quarter to fourth quarter[1]		
Nominal GDP	4¾–6	5–5½
Real GDP[2]	3–3½	3–3¼
PCE prices	1½–3	1¾–2½
Average level, fourth quarter		
Civilian unemployment rate	4¾–5½	4¾–5¼

1. Change from average for fourth quarter of previous year to average for fourth quarter of year indicated.
2. Chain-weighted.

This uncertainty arises not only from the difficulty of assessing when businesses will feel that conditions are sufficiently favorable to warrant a pickup in capital spending but also from the difficulty of gauging where businesses stand in the inventory cycle. Nonetheless, all the FOMC participants foresee a return to solid growth by 2002. By then, the inventory correction should have run its course, and the monetary policy actions taken this year, as well as the recently enacted tax reductions, should be providing appreciable support to final demand.

In part because of lower interest rates, many firms have been able to shore up their balance sheets. And although some lower-rated firms, especially in telecommunications and other sectors with gloomy near-term prospects, may continue to find it difficult to obtain financing, businesses generally are fairly well positioned to step up their capital spending once the outlook for sales and profits improves. By all accounts, technological innovation is still proceeding rapidly, and these advances should eventually revive high-tech investment, especially with the price of computing power continuing to drop sharply.

In addition, consumer spending is expected to get a boost from the tax cuts and from falling energy prices, which should help offset the effects of the weaker job market and the decline over the past year in stock market wealth. Housing activity, which has been buoyed in recent quarters by low mortgage interest rates, is likely to remain firm into 2002. Significant concerns remain about the foreign economic outlook and the prospects for U.S. exports. Nevertheless, economic activity abroad is expected to benefit from a strengthening of the U.S. economy, a stabilization of the global high-tech sector, an easing of oil prices, and stimulative macroeconomic policies in some countries.

The chain-type price index for personal consumption expenditures rose 2¼ percent over the four quarters of 2000, and most FOMC participants expect inflation to remain around that rate through next year; indeed, the central tendency of their forecasts for the increase in this price measure is 2 percent to 2½ percent in 2001 and 1¾ percent to 2½ percent in 2002. One favorable factor in the inflation outlook is the behavior of energy prices. Those prices have declined recently after having increased rapidly in the past couple of years, and prospects are good that they could stabilize or even fall further in coming quarters. In addition to their direct effects, lower energy prices should tend to limit increases in other prices by reducing input costs for a wide range of energy-intensive goods and services and by helping damp inflation expectations. More broadly, the competitive conditions that have restricted businesses' ability to raise prices in recent years are likely to persist. And although labor costs could come under upward pressure as wages tend to catch up to previous increases in productivity, the slackening in resource utilization this year is expected to contribute to reduced inflation pressures going forward.

Economic and Financial Developments in 2001

Economic growth remained very slow in the first half of 2001 after having downshifted in the second half of 2000. Real gross domestic product rose at an annual rate of just 1¼ percent in the first quarter, about the same as in the fourth quarter, and appears to have posted at best a meager gain in the second quarter. Businesses have been working to correct the inventory imbalances that emerged in the second half of last year, which has led to sizable declines in manufacturing output, and capital spending has weakened appreciably. In contrast, household spending—especially for motor vehicles and houses—has held up well. Employment increased only modestly over the first three months of the year and turned down in the spring; the unemployment rate in June stood at 4½ percent, ½ percentage point higher than in the fourth quarter of last year.

The inflation news early this year was not very favorable, as energy prices continued to soar and as measures of core inflation—which exclude food and energy—registered some pickup. More recently, however, energy prices have moved lower, and the monthly readings on core inflation have returned to more moderate rates. Moreover, apart from energy, prices at earlier stages of processing have been quiescent this year.

The Household Sector

Growth in household spending has slowed noticeably from the rapid pace of the past few years. Still, it was fairly well maintained in the first half of 2001 despite the weaker tenor of income, wealth, and consumer confidence, and the personal saving rate declined a bit further. A greater number of households encountered problems servicing debt, but widespread difficulties or restrictions on the availability of credit did not emerge.

Consumer Spending

Real consumer spending grew at an annual rate of 3½ percent in the first quarter. Some of the increase reflected a rebound in purchases of light motor vehicles, which were boosted by a substantial expansion of incentives and rose to just a tad below the record pace of 2000 as a whole. In addition, outlays for non-auto goods posted a solid gain, and spending on services rose modestly despite a weather-related drop in outlays for energy services. In the second quarter, however, the rise in consumer spending seems to have lessened as sales of light motor vehicles dropped a bit, on average, and purchases of other goods apparently did not grow as fast in real terms as they had in the first quarter.

The rise in real consumption so far this year has been considerably smaller than the outsized gains in the second half of the 1990s and into 2000. But the increase in spending still outstripped the growth in real disposable personal income (DPI), which has been restrained this year by further big increases in consumer energy prices and by the deterioration in the job market; between the fourth quarter of 2000 and May, real DPI increased just about 2 percent at an annual rate, well below the average pace of the preceding few years. In addition, the net worth of households fell again in the first quarter, to a level 8 percent below the high reached in the first quarter of 2000. On net, the ratio of household net worth to DPI has returned to about the level reached in 1997, significantly below the recent peak but still high by historical standards. In addition, consumer sentiment indexes, which had risen to extraordinary levels in the late 1990s and remained there through last fall, fell sharply around the turn of the year. However, these indexes have not deteriorated further, on net, since the winter and are still at reasonably favorable levels when compared with the readings for the pre-1997 period.

Rising household wealth almost certainly was a key factor behind the surge in consumer spending between the mid-1990s and last year, and thus helps to explain the sharp fall in the personal saving rate over that period. The saving rate has continued to fall this year—from −0.7 percent in the fourth quarter of 2000 to −1.1 percent in May—even though the boost to spending growth from the earlier run-up in stock prices has likely run its course and the effects of lower wealth should be starting to feed through to spending. The apparent decline in the saving rate may simply reflect noisiness in the data or a slower response of spending to wealth than average historical experience might suggest. In addition, consumers probably base their spending decisions on income prospects over a longer time span than just a few quarters. Thus, to the extent that consumers do not expect the current sluggishness in real income growth to persist, the tendency to maintain spending for a time by dipping into savings or by borrowing may have offset the effect of the decline in wealth on the saving rate.

Residential Investment

Housing activity remained buoyant in the first half of this year as lower mortgage interest rates appear to have offset the restraint from smaller gains in employment and income and from lower levels of wealth. In the single-family sector, starts averaged an annual rate of 1.28 million units over the first five months of the year—4 percent greater than the hefty pace for 2000 as a whole. Sales of new and existing homes strengthened noticeably around the turn of the year and were near record levels in March; they fell back in April but reversed some of that drop in May. Inventories of new homes for sale are exceptionally low; builders' backlogs are sizable; and, according to the Michigan survey, consumers' assessments of homebuying conditions remain favorable, mainly because of perceptions that mortgage rates are low.

Likely because of the sustained strength of housing demand, home prices have continued to rise faster than overall inflation, although the various measures that attempt to control for shifts in the regional composition of sales and in the characteristics of houses sold provide differing signals on the magnitude of the price increases. Notably, over the year ending in the first quarter, the constant-quality price index for new homes rose 4 percent, while the repeat-sales price index for existing homes was up nearly 9 percent. Despite the higher prices, the share of income required to finance a home purchase—one measure of affordability—has fallen in recent quarters as mortgage rates have dropped back after last year's bulge, and that share currently is about as low as it has been at any time in the past decade. Rates on thirty-year conventional fixed-rate loans now stand around 7¼ percent, and ARM rates are at their lowest levels in a couple of years.

In the multifamily sector, housing starts averaged 343,000 units at an annual rate over the first five months of the year, matching the robust pace that has been evident since 1997. Moreover, conditions in the market for multifamily housing continue to be conducive to new construction. The vacancy rate for multifamily rental units in the first quarter held near its low year-earlier level, and rents and property values continued to rise rapidly.

Household Finance

The growth of household debt is estimated to have slowed somewhat in the first half of this year to a still fairly hefty 7½ percent annual rate—about a percentage point below its average pace over the previous two years. Households have increased both their home mortgage debt and their consumer credit (debt not secured by real estate) substantially this year, although in both cases the growth has moderated a bit recently. The relatively low mortgage interest rates have boosted mortgage borrowing both by stimulating home purchases and by making it attractive to refinance existing mortgages and extract some of the buildup in home equity. The rapid growth in consumer credit has been concentrated in credit card debt, perhaps reflecting households' efforts to sustain their consumption in the face of weaker income growth.

The household debt service burden—the ratio of minimum scheduled payments on mortgage and consumer debt to disposable personal income—rose to more than 14 percent at the end of the first quarter, a twenty-year high, and available data suggest a similar reading for the second quarter. In part because of the elevated debt burden, some measures of household loan performance have deteriorated a bit in recent quarters. The delinquency rate on home mortgage loans has edged up but remains low, while the delinquency rate on credit card loans has risen noticeably and is in the middle part of its range over the past decade. Personal bankruptcies jumped to record levels in the spring, but some of the spurt was probably the result of a rush to file before Congress passed bankruptcy reform legislation.

Lenders have tightened up somewhat in response to the deterioration of household financial conditions. In the May Senior Loan Officer Opinion Survey on Bank Lending Practices, about a fifth of the banks indicated that they had tightened the standards for approving applications for consumer loans over the preceding three months, and about a fourth said that they had tightened the terms on loans they are willing to make, substantial increases from the November survey. Of those that had tightened, most cited actual or anticipated increases in delinquency rates as a reason.

The Business Sector

The boom in capital spending that has helped fuel the economic expansion came to a halt late last year. After having risen at double-digit rates over the preceding five years, real business fixed investment flattened out in the fourth quarter of 2000 and rose only a little in the first quarter of 2001. Demand for capital equipment has slackened appreciably, reflecting the sluggish economy, sharply lower corporate profits and cash flow, earlier overinvestment in some sectors, and tight financing conditions facing some firms. In addition, inventory investment fell substantially in the first quarter as businesses moved to address the overhangs that began to develop late last year. With investment spending weakening, businesses have cut back on new borrowing. Following the drop in longer-term interest rates in the last few months of 2000, credit demands have been concentrated in longer-term markets, though cautious investors have required high spreads from marginal borrowers.

Fixed Investment

Real spending on equipment and software (E&S) began to soften in the second half of last year, and it posted small declines in both the fourth quarter of 2000 and the first quarter of 2001. Much of the weakness in the first quarter was in spending on high-tech equipment and software; such spending, which now accounts for about half of E&S outlays when measured in nominal terms, declined at an annual rate of about

12 percent in real terms—the first real quarterly drop since the 1990 recession. An especially sharp decrease in outlays for communications equipment reflected the excess capacity that had emerged as a result of the earlier surge in spending, the subsequent re-evaluation of profitability, and the accompanying financing difficulties faced by some firms. In addition, real spending on computers and peripheral equipment, which rose more than 40 percent per year in the second half of the 1990s, showed little growth, on net, between the third quarter of 2000 and the first quarter of 2001. The leveling in real computer spending reportedly reflects some stretching out of businesses' replacement cycles for personal computers as well as a reduced demand for servers. Outside the high-tech area, spending rose in the first quarter as purchases of motor vehicles reversed some of the decline recorded over the second half of 2000 and as outlays for industrial equipment picked up after having been flat in the fourth quarter.

Real E&S spending likely dropped further in the second quarter. In addition to the ongoing contraction in outlays on high-tech equipment, the incoming data for orders and shipments point to a decline in investment in non-high-tech equipment, largely reflecting the weakness in the manufacturing sector this year.

Outlays on nonresidential construction posted another sizable advance in early 2001 after having expanded nearly 13 percent in real terms in 2000, but the incoming monthly construction data imply a sharp retrenchment in the second quarter. The downturn in spending comes on the heels of an increase in vacancy rates for office and industrial space in many cities. Moreover, while financing generally remains available for projects with viable tenants, lenders are now showing greater caution. Not surprisingly, one bright spot is the energy sector, where expenditures for drilling and mining have been on a steep uptrend since early 1999 (mainly because of increased exploration for natural gas) and the construction of facilities for electric power generation remains very strong.

Inventory Investment

A sharp reduction in the pace of inventory investment was a major damping influence on real GDP growth in the first quarter of 2001. The swing in real nonfarm inventory investment from an accumulation of $51 billion at an annual rate in the fourth quarter of 2000 to a liquidation of $25 billion in the first quarter of 2001 subtracted 3 percentage points from the growth in real GDP in the first quarter. Nearly half of the negative contribution to GDP growth came from the motor vehicle sector, where a sizable cut in assemblies (added to the reduction already in place in the fourth quarter) brought the overall days' supply down to comfortable levels by the end of the first quarter. A rise in truck assemblies early in the second quarter led to some backup of inventories in that segment of the market, but truck stocks were back in an acceptable range by June; automobile assemblies were up only a little in the second quarter, and stocks remained lean.

Firms outside the motor vehicles industry also moved aggressively to address inventory imbalances in the first half of the year, and this showed through to manufacturing output, which, excluding motor vehicles, fell at an annual rate of 7½ percent over this period. These production adjustments—along with a sharp reduction in the flow of imports—contributed to a small decline in real non-auto stocks in the first quarter, and book-value data for the manufacturing and trade sector point to a further decrease, on net, in April and May. As of May, stocks generally seemed in line with sales at retail trade establishments, but there were still some notable overhangs in wholesale trade and especially in manufacturing, where inventory–shipments ratios for producers of computers and electronic products, primary and fabricated metals, and chemicals remained very high.

Business Finance

The economic profits of U.S. corporations fell at a 19 percent annual rate in the first quarter after a similar decline in the fourth quarter of 2000. As a result, the ratio of profits to GDP declined 1 percentage point over the two quarters, to 8.5 percent; the ratio of the profits of nonfinancial corporations to sector output fell 2 percentage points over the interval, to 10 percent. Investment spending has declined by more than profits, however, reducing somewhat the still-elevated need of nonfinancial corporations for external funds to finance capital expenditures. Corporations have husbanded their increasingly scarce internal funds by cutting back on cash-financed mergers and equity repurchases. While equity retirements have therefore fallen, so has gross equity issuance, though by less. Inflows of venture equity capital, in particular, have been reduced substantially. Businesses have met their financing needs by borrowing heavily in the bond market while paying down both commercial and industrial (C&I) loans at banks and commercial paper. In total, after having increased 9½ percent last year, the debt of nonfinancial businesses rose at a 5 percent annual rate in the first quarter of this year and is estimated to have risen at about the same pace in the second quarter.

The decline in C&I loans and commercial paper owes, in part, to less hospitable conditions in shorter-term funding markets. The commercial paper market was rattled in mid-January by the defaults of two large California utilities. Commercial paper is issued only by highly rated corporations, and default is extremely rare. The defaults, along with some downgrades, led investors in commercial paper to pull back and reevaluate the riskiness of issuers. For a while, issuance by all but top-rated names became very difficult and quality spreads widened significantly, pushing some issuers into the shortest maturities and inducing others to exit the market entirely. As a consequence, the amount of commercial paper outstanding plummeted. In the second quarter, risk spreads returned to more typical levels and the runoff moderated. By the end of June, the amount of nonfinancial commercial paper outstanding was nearly 30 percent below its level at the end of 2000, with many firms still not having returned to the market.

Even though banks' C&I loans were boosted in January and February by borrowers substituting away from the commercial paper market, loans declined, on net, over the first half of the year, in part because borrowers paid down their bank loans with proceeds from bond issues. Many banks reported on the Federal Reserve's Bank Lending Practices surveys this year that they had tightened standards and terms—including the premiums charged on riskier loans, the cost of credit lines, and loan covenants—on C&I loans. Loan officers cited a worsened economic outlook, industry-specific problems, and a reduced tolerance for risk as the reasons for having tightened. Despite these adjustments to banks' lending stance, credit appears to remain amply available for sound borrowers, and recent surveys of small businesses indicate that they have not found credit significantly more difficult to obtain.

Meanwhile, the issuance of corporate bonds this year has proceeded at about double the pace of the preceding two years. With the yields on high-grade bonds back down to their levels in the first half of 1999 and with futures quotes suggesting interest rates will be rising next year, corporations apparently judged it to be a relatively opportune time to issue. Although investors remain somewhat selective, they have been willing to absorb the large volume of issuance as they have become more confident that the economy would recover and a prolonged disruption to earnings would be avoided. The heavy pace of issuance has been supported, in part, by inflows into bond mutual funds, which may have come at the expense of equity funds.

The flows are forthcoming at relatively high risk spreads, however. Spreads of most grades of corporate debt relative to rates on swaps have fallen a little this year, but spreads remain unusually high for lower investment-grade and speculative-grade credits. The elevated spreads reflect the deterioration in business credit quality that has occurred as the economy has slowed. While declines in interest rates have held aggregate interest expense at a relatively low percentage of cash flow, many individual firms are feeling the pinch of decreases in earnings. Over the twelve months ending in May, 11 percent of speculative-grade bonds, by dollar volume, have defaulted—the highest percentage since 1991 and a substantial jump from 1998, when less than 2 percent defaulted. This deterioration reflects not only the unusually large defaults by the California utilities, but also stress in the telecommunications sector and elsewhere. However, some other measures of credit performance have shown a more moderate worsening. The ratio of the liabilities of failed businesses to those of all nonfinancial businesses and the delinquency rate on C&I loans at banks have risen noticeably from their lows in 1998, but both remain well below levels posted in the early 1990s.

Commercial mortgage debt increased at about an 8¾ percent annual rate in the first half of this year, and the issuance of commercial-mortgage-backed securities (CMBS) maintained its robust pace of the past several years. While spreads of the yields on investment- and speculative-grade CMBS over swap rates have changed little this year, significant fractions of banks reported on the Bank Lending Practices survey that they have tightened terms and standards on commercial real estate loans. Although the delinquency rates on CMBS and commercial real estate loans at banks edged up in the first quarter, they remained near record lows. Nevertheless, those commercial banks that reported taking a more cautious approach toward commercial real estate lending stated that they are doing so, in part, because of a less favorable economic outlook in general and a worsening of the outlook for commercial real estate.

The Government Sector

The fiscal 2001 surplus in the federal unified budget is likely to be smaller than the surplus in fiscal 2000 because of the slower growth in the economy and the recently enacted tax legislation. Nonetheless, the unified surplus will remain large, and the paydown of the federal debt is continuing at a rapid clip. As a consequence, the Treasury has taken a number of steps to preserve liquidity in a shrinking market. The weaker economy is also reducing revenues at the state and local level, but these governments remain in reasonably good fiscal shape overall and are taking advantage of historically low interest rates to refund existing debt and to issue new debt.

Federal Government

The fiscal 2001 surplus in the federal government's unified budget is likely to come in below the fiscal 2000 surplus of $236 billion. Over the first eight months of the fiscal year—October to May—the unified budget recorded a surplus of $137 billion, $16 billion higher than during the comparable period last year. But over the balance of the fiscal year, receipts will continue to be restrained by this year's slow pace of economic growth and the associated decline in corporate profits. Receipts will also be reduced significantly over the next few months by the payout of tax rebates and the shift of some corporate payments into fiscal 2002, provisions included in the Economic Growth and Tax Relief Reconciliation Act of 2001.

Federal saving, which is basically the unified budget surplus adjusted to conform to the accounting practices followed in the national income and product accounts (NIPA), has risen dramatically since hitting a low of –3½ percent of GDP in 1992 and stood at 3¾ percent of GDP in the first quarter—a swing of more than 7 percentage points. Reflecting the high level of federal saving, national saving, which comprises saving by households, businesses, and governments, has been running at a higher rate since the late 1990s than it did over most of the preceding decade, even as the personal saving rate has plummeted. The deeper pool of national saving, along with large inflows of foreign capital, has provided resources for the technology-driven boom in domestic investment in recent years.

Federal receipts in the first eight months of the current fiscal year were just 4½ percent higher than during the first eight months of fiscal 2000—a much smaller gain than those posted, on average, over the preceding several years. Much of the slowing was in corporate receipts, which dropped below year-earlier levels, reflecting the recent deterioration in profits. In addition, individual income tax payments rose less rapidly than over the preceding few years, mainly because of slower growth in withheld tax payments. This spring's nonwithheld payments of individual taxes, which are largely payments on the previous year's liability, were relatively strong. Indeed, although there was no appreciable "April surprise" this year—that is, these payments were about in line with expectations—liabilities again appear to have risen faster than the NIPA tax base in 2000. One factor that has lifted liabilities relative to income in recent years is that rising levels of income and a changing distribution have shifted more taxpayers into higher tax brackets. Higher capital gains realizations also have helped raise liabilities relative to the NIPA tax base over this period. (Capital gains are not included in the NIPA income measure, which, by design, includes only income from current production.)

The faster growth in outlays that emerged in fiscal 2000 has extended into fiscal 2001. Smoothing through some timing anomalies at the start of the fiscal year, nominal spending during the first eight months of fiscal 2001 was more than 4 percent higher than during the same period last year; excluding the sizable drop in net interest outlays that has accompanied the paydown of the federal debt, the increase in spending so far this year was nearly 6 percent.

Spending in the past couple of years has been boosted by sizable increases in discretionary appropriations as well as by faster growth in outlays for the major health programs. The especially rapid increase in Medicaid outlays reflects the higher cost and utilization of medical care (including prescription drugs), growing enrollments, and a rise in the share of expenses picked up by the federal government. Outlays for Medicare have been lifted, in part, by the higher reimbursements to providers that were enacted last year.

Real federal expenditures for consumption and gross investment, the part of government spending that is included in GDP, rose at a 5 percent annual rate in the first quarter. Over the past couple of years, real nondefense purchases have remained on the moderate uptrend that has been evident since the mid-1990s, while real defense purchases have started to rise slowly after having bottomed out in the late 1990s.

The Treasury has used the substantial federal budget surpluses to pay down its debt further. At the end of June, the outstanding Treasury debt held by the public had fallen nearly $600 billion, or 15 percent, from its peak in 1997. Relative to nominal GDP, publicly held debt has dropped from nearly 50 percent in the mid-1990s to below 33 percent in the first quarter, the lowest it has been since 1984.

Declines in outstanding federal debt and the associated reductions in the sizes and frequency of auctions of new issues have diminished the liquidity of the Treasury market over the past few years. Bid–asked spreads are somewhat wider, quote sizes are smaller, and the difference between yields on seasoned versus most-recently issued securities has increased. In part, however, these developments may also reflect a more cautious attitude among securities dealers following the market turmoil in the fall of 1998.

The Treasury has taken a number of steps to limit the deterioration in the liquidity of its securities. In recent years, it has concentrated its issuance into fewer securities, so that the auction sizes of the remaining securities are larger. Last year, in order to enable issuance of a larger volume of new securities, the Treasury began buying back less-liquid older securities, and it also made every second auction of its 5- and 10-year notes and 30-year bond a reopening of the previously issued security. In February, the Treasury put limits on the noncompetitive bids that foreign central banks and governmental monetary entities may make, so as to leave a larger and more predictable pool of securities available for competitive bidding, helping to maintain the liquidity and efficiency of the market. In May, the Treasury announced that it would begin issuing Treasury bills with a four-week maturity to provide it with greater flexibility and cost efficiency in managing its cash balances, which, in part because new securities are now issued less frequently, have become more volatile. Finally, also in May, the Treasury announced it would in the next few months seek public comment on a plan to ease the "35 percent rule," which limits the bidding at auctions by those holding claims on large amounts of an issue. With reopenings increasingly being used to maintain liquidity in individual issues, this rule was constraining many potential bidders. As discussed below, the reduced issuance of Treasury securities has also led the Federal Reserve to modify its procedures for acquiring such securities and to study possible future steps for its portfolio.

In early 2000, as investors focused on the possibility that Treasury securities were going to become increasingly scarce, they became willing to pay a premium for longer-dated securities, pushing down their yields. However, these premiums appear to have largely unwound later in the year as market participants made adjustments to the new environment. These adjustments include the substitution of alternative instruments for hedging and pricing, such as interest rate swaps, prominent high-grade corporate bonds, and securities issued by government-sponsored enterprises (GSEs). To benefit from adjustments by market participants, in 1998, Fannie Mae and Freddie Mac initiated programs to issue securities that share some characteristics with Treasury securities, such as regular issuance calendars and large issue sizes; in the first half of this year they issued $88 billion of coupon securities and $502 billion of bills under these programs. The GSEs have also this year begun buying back older securities to boost the size of their new issues. Nevertheless, the market for Treasury securities remains considerably more liquid than markets for GSE and other fixed-income securities.

State and Local Governments

State and local governments saw an enormous improvement in their budget positions between the mid-1990s and last year as revenues soared and spending generally was held in check; accordingly, these governments were able both to lower taxes and to make substantial allocations to reserve funds. More recently, however, revenue growth has slowed in many states, and reports of fiscal strains have increased. Nonetheless, the sector remains in relatively good fiscal shape overall, and most governments facing revenue shortfalls have managed to adopt balanced budgets for fiscal 2002 with only minor adjustments to taxes and spending.

Real consumption and investment spending by state and local governments rose at nearly a 5 percent annual rate in the first quarter and apparently posted a sizable increase in the second quarter as well. Much of the strength this year has been in construction spending, which has rebounded sharply after a reported decline in 2000 that was hard to reconcile with the sector’s ongoing infrastructure needs and the good financial condition of most governments. Hiring also remained fairly brisk during the first half of the year; on average, employment rose 30,000 per month, about the same as the average monthly increase over the preceding three years.

Although interest rates on municipal debt have edged up this year, they remain low by historical standards. State and local governments have taken advantage of the low interest rates to refund existing debt and to raise new capital. Credit quality has remained quite high in the municipal sector even as tax receipts have softened, with credit upgrades outpacing downgrades in the first half of this year. Most notable among the downgrades was that of California’s general obligation bonds. Standard and Poor’s lowered California’s debt two notches from AA to A+, citing the financial pressures from the electricity crisis and the likely adverse effects of the crisis on the state’s economy.

The External Sector

The deficits in U.S. external balances narrowed sharply in the first quarter of this year, largely because of a smaller deficit in trade in goods and services. Most of the financial flows into the United States continued to come from private foreign sources.

Trade and Current Account

After widening continuously during the past four years, the deficits in U.S. external balances narrowed in the first quarter of 2001. The current account deficit in the first quarter was $438 billion at an annual rate, or 4.3 percent of GDP, compared with $465 billion in the fourth quarter of 2000. Most of the reduction of the current account deficit can be traced to changes in U.S. trade in goods and services; the trade deficit narrowed from an annual rate of $401 billion in the fourth quarter of 2000 to $380 billion in the first quarter of this year. The trade deficit in April continued at about the same pace. Net investment income payments were a bit less in the first quarter than the average for last year primarily because of a sizable decrease in earnings by U.S. affiliates of foreign firms.

As U.S. economic growth slowed in the second half of last year and early this year, real imports of goods and services, which had grown very rapidly in the first three quarters of 2000, expanded more slowly in the fourth quarter and then contracted 5 percent at an annual rate in the first quarter. The largest declines were in high-tech products (computers, semiconductors, and telecommunications equipment) and automotive products. In contrast, imports of petroleum and petroleum products increased moderately. A temporary surge in the price of imported natural gas pushed the increase of the average price of non-oil imports above an annual rate of 1 percent in the first quarter, slightly higher than the rate of increase recorded in 2000.

U.S. real exports were hit by slower growth abroad, the strength of the dollar, and plunging global demand for high-tech products. Real exports of goods and services, which had grown strongly in the first three quarters of 2000, fell 6½ percent at an annual rate in the fourth quarter of last year and declined another 1 percent in the first quarter of this year. The largest declines in both quarters were in high-tech capital goods and automotive products (primarily in intrafirm trade with Canada). By market destination, the largest increases in U.S. goods exports during the first three quarters of 2000 had been to Mexico and countries in Asia; the recent declines were mainly in exports to Asia and Latin America. In contrast, goods exports to Western Europe increased steadily throughout the entire period. About 45 percent of U.S. goods exports in the first quarter of 2001 were capital equipment; 20 percent were industrial supplies; and 5 to 10 percent each were agricultural, automotive, consumer, and other goods.

After increasing through much of 2000, the spot price of West Texas intermediate (WTI) crude oil reached a peak above $37 per barrel in September, the highest level since the Gulf War. As world economic growth slowed in the latter part of 2000, oil price declines reversed much of the year's price gain. In response, OPEC reduced its official production targets in January of this year and again in March. As a result, oil prices have remained relatively high in 2001 despite weaker global economic growth and a substantial increase in U.S. oil inventories. Oil prices have also been elevated by the volatility of Iraqi oil exports arising from tense relations between Iraq and the United Nations. During the first six months of this year, the spot price of WTI has fluctuated, with only brief exceptions, between $27 and $30 per barrel.

Financial Account

In the first quarter of 2001, as was the case in 2000 as a whole, nearly all of the net financial flows into the United States came from private foreign sources. Foreign official inflows were less than $5 billion and were composed primarily of the reinvestment of accumulated interest earnings. Reported foreign exchange intervention purchases of dollars were modest.

Inflows arising from private foreign purchases of U.S. securities accelerated further in the first quarter and are on a pace to exceed last year's record. All of the pickup is attributable to larger net foreign purchases of U.S. bonds, as foreign purchases of both corporate and agency bonds accelerated and private foreign sales of Treasuries paused. Foreign purchases of U.S. equities are only slightly below their 2000 pace despite the apparent decline in expected returns to holding U.S. equities.

The pace at which U.S. residents acquired foreign securities changed little between the second half of last year and the first quarter of this year. As in previous years, most of the foreign securities acquired were equities.

Net financial inflows associated with direct investment slowed a good bit in the first quarter, as there were significantly fewer large foreign takeovers of U.S. firms and U.S. direct investment abroad remained robust.

The Labor Market

Labor demand weakened in the first half of 2001, especially in manufacturing, and the unemployment rate rose. Increases in hourly compensation have continued to trend up in recent quarters, while measured labor productivity has been depressed by the slower growth of output.

Employment and Unemployment

After having risen an average of 149,000 per month in 2000, private payroll employment increased an average of only 63,000 per month in the first quarter of 2001, and it declined an average of 117,000 per month in the second quarter. The unemployment rate moved up over the first half of the year and in June stood at 4½ percent, ½ percentage point higher than in the fourth quarter of last year.

Much of the weakness in employment in the first half of the year was in the manufacturing sector, where job losses averaged 78,000 per month in the first quarter and 116,000 per month in the second quarter. Since last July, manufacturing employment has fallen nearly 800,000. Factory job losses were widespread in the first half of the year, with some of the biggest cutbacks at industries struggling with sizable inventory overhangs, including metals and industrial and electronic equipment. The weakness in manufacturing also cut into employment at help-supply firms and at wholesale trade establishments.

Apart from manufacturing and the closely related help-supply and wholesale trade industries, employment growth held up fairly well in the first quarter but began to slip noticeably in the second quarter. Some of the slowing in the second quarter reflected a drop in construction employment after a strong first quarter that likely absorbed a portion of the hiring that normally takes place in the spring; on average, construction employment rose a fairly brisk

15,000 per month over the first half, about the same as in 2000. Hiring in the services industry (other than help-supply firms) also slowed markedly in the second quarter. Employment in retail trade remained on a moderate uptrend over the first half of the year, and employment in finance, insurance, and real estate increased modestly after having been unchanged, on net, last year.

Labor Costs and Productivity

Through the first quarter, compensation growth remained quite strong—indeed, trending higher by some measures. These gains likely reflected the influence of earlier tight labor markets, higher consumer price inflation—largely due to soaring energy prices—and the greater real wage gains made possible by faster structural productivity growth. The upward pressures on labor costs could abate in coming quarters if pressures in labor markets ease and energy prices fall back.

Hourly compensation, as measured by the employment cost index (ECI) for private nonfarm businesses, moved up in the first quarter to a level about 4¼ percent above its level of a year earlier; this compares with increases of about 4½ percent over the preceding year and 3 percent over the year before that. The slight deceleration in the most recent twelve-month change in the ECI is accounted for by a slowdown in the growth of compensation for sales workers relative to the elevated rates that had prevailed in early 2000; these workers' pay includes a substantial commission component and thus is especially sensitive to cyclical developments. Compensation per hour in the nonfarm business sector—a measure that picks up some forms of compensation that the ECI omits but that sometimes has been revised substantially once the data go through the annual revision process—shows a steady uptrend over the past couple of years; it rose 6 percent over the year ending in the first quarter after having risen 4½ percent over the preceding year.

According to the ECI, wages and salaries rose at an annual rate of about 4½ percent in the first quarter. Excluding sales workers, wages rose 5 percent (annual rate) in the first quarter and 4¼ percent over the year ending in March; this compares with an increase of 3¾ percent over the year ending in March 2000. Separate data on average hourly earnings of production or nonsupervisory workers also show a discernible acceleration of wages: The twelve-month change in this series was 4¼ percent in June, ½ percentage point above the reading for the preceding twelve months.

Benefit costs as measured in the ECI have risen faster than wages over the past year, with the increase over the twelve months ending in March totaling 5 percent. Much of the pressure on benefits is coming from health insurance, where employer payments have accelerated steadily since bottoming out in the mid-1990s and are now going up about 8 percent per year. The surge in spending on prescription drugs accounts for some of the rise in health insurance costs, but demand for other types of medical care is increasing rapidly as well. Moreover, although there has been some revamping of drug coverage to counter the pressures of soaring demand, many employers have been reluctant to adjust other features of the health benefits package in view of the need to retain workers in a labor market that has been very tight in recent years.

Measured labor productivity in the nonfarm business sector has been bounced around in recent quarters by erratic swings in hours worked by selfemployed individuals, but on balance, it has barely risen since the third quarter of last year after having increased about 3 percent per year, on average, over the preceding three years. This deceleration coincides with a marked slowing in output growth and seems broadly in line with the experience of past business cycles; these readings remain consistent with a noticeable acceleration in structural productivity having occurred in the second half of the 1990s. Reflecting the movements in hourly compensation and in actual productivity, unit labor costs in the nonfarm business sector jumped in the first quarter and have risen 3½ percent over the past year.

Looking ahead, prospects for favorable productivity performance will hinge on a continuation of the rapid technological advances of recent years and on the willingness of businesses to expand and update their capital stocks to take advantage of the new efficiency-enhancing capital that is becoming available at declining cost in many cases. To be sure, the current weakness in business investment will likely damp the growth of the capital stock relative to the pace of the past couple of years. But once the cyclical weakness in the economy dissipates, continued advances in technology should provide impetus to renewed capital spending and a return to solid increases in productivity.

Prices

Inflation moved higher in early 2001 but has moderated some in recent months. After having risen 2¼ percent in 2000, the chain price index for personal consumption expenditures (PCE) increased about 3¼ percent in the first quarter of 2001 as energy prices soared and as core consumer prices—which exclude food and energy—picked up. Energy prices continued to rise rapidly in April and May but eased in June and early July. In addition, core PCE price inflation has dropped back after the first-quarter spurt, and the twelve-month change in this series, which is a useful indicator of the underlying inflation trend, stood at 1½ percent in May, about the same as the change over the preceding twelve months. The core consumer price index (CPI) continued to move up at a faster pace than the core PCE measure over the past year, rising 2½ percent over the twelve months ending in May, also the same rate as over the preceding year.

PCE energy prices rose at an annual rate of about 11 percent in the first quarter and, given the big increases in April and May, apparently posted another sizable advance in the second quarter. Unlike the surges in energy prices in 1999 and 2000, the increases in the first half of 2001 were not driven by developments in crude oil markets. Indeed, natural gas prices were the major factor boosting overall energy prices early this year as tight inventories and concerns about potential stock-outs pushed spot prices to extremely high levels; natural gas prices have since receded as additional supplies have come on line and inventories have been rebuilt. In the spring, gasoline prices soared in response to strong demand, refinery disruptions, and concerns about lean inventories; with refineries back on line, imports up, and inventories restored, gasoline prices have since fallen noticeably below their mid-May peaks. Electricity prices also rose substantially in the first half of the year, reflecting higher natural gas prices as well as the problems in California. Capacity problems in California and the hydropower shortages in the Northwest persist, though California's electricity consumption has declined recently and wholesale prices have dropped. In contrast, capacity in the rest of the country has expanded appreciably over the past year and, on the whole, appears adequate to meet the normal seasonal rise in demand.

Core PCE prices rose at a 2½ percent annual rate in the first quarter—a hefty increase by the standards of recent years. But the data are volatile, and the first-quarter increase, no doubt, exaggerates any pickup. Based on monthly data for April and May, core PCE inflation appears to have slowed considerably in the second quarter; the slowing was concentrated in the goods categories and seems consistent with reports that retailers have been cutting prices to spur sales in an environment of soft demand.

Core consumer price inflation—whether measured by the PCE index or by the CPI—in recent quarters almost certainly has been boosted by the effects of higher energy prices on the costs of producing other goods and services. Additional pressure has come from the step-up in labor costs. That said, firms appear to have absorbed much of these cost increases in lower profit margins. Meanwhile, non-oil import prices have remained subdued, thus continuing to restrain input costs for many domestic industries and to limit the ability of firms facing foreign competition to raise prices for fear of losing market share. In addition, apart from energy, price pressures at earlier stages of processing have been minimal. Indeed, excluding food and energy, the producer price index (PPI) for intermediate materials has been flat over the past year, and the PPI for crude materials has fallen 11 percent. Moreover, inflation expectations, on balance, seem to have remained quiescent: According to the Michigan survey, the median expectation for inflation over the upcoming year generally has been running about 3 percent this year, similar to the readings in 2000.

In contrast to the step-up in consumer prices, prices for private investment goods in the NIPA were up only a little in the first quarter after having risen about 2 percent last year. In large part, this pattern was driven by movements in the price index for computers, which fell at an annual rate of nearly 30 percent in the first quarter as demand for high-tech equipment plunged. This drop in computer prices was considerably greater than the average decrease of roughly 20 percent per year in the second half of the 1990s and the unusually small

Alternative Measures of Price Change

Percent, Q1 to Q1

Price measure	1998 to 1999	1999 to 2000	2000 to 2001
Chain-type			
Gross domestic product	1.5	1.8	2.3
Gross domestic purchases	1.2	2.3	2.2
Personal consumption expenditures	1.5	2.5	2.2
Excluding food and energy	1.8	1.6	1.7
Fixed-weight			
Consumer price index	1.7	3.3	3.4
Excluding food and energy	2.2	2.2	2.7

NOTE. A fixed-weight index uses quantity weights from a base year to aggregate prices from each distinct item category. A chain-type index is the geometric average of two fixed-weight indexes and allows the weights to change each year. The consumer price indexes are for all urban consumers. Changes are based on quarterly averages.

11 percent decrease in 2000. Monthly PPI data suggest that computer prices were down again in the second quarter, though much less than in the first quarter.

All told, the GDP chain-type price index rose at an annual rate of 3¼ percent in the first quarter and has risen 2¼ percent over the past four quarters, an acceleration of ½ percentage point from the comparable year-earlier period. The price index for gross domestic purchases—which is defined as the prices paid for consumption, investment, and government purchases—also accelerated in the first quarter—to an increase of about 2¾ percent; the increase in this measure over the past year was 2¼ percent, about the same as over the preceding year. Excluding food and energy, the latest four-quarter changes in both GDP and gross domestic purchases prices were roughly the same as over the preceding year.

U.S. Financial Markets

Longer-term interest rates and equity prices have shown remarkably small net changes this year, given the considerable shifts in economic prospects and major changes in monetary policy. To some extent, the expectations of the economic and policy developments in 2001 had already become embedded in financial asset prices as last year came to a close; from the end of August through year-end, the broadest equity price indexes fell 15 percent and investment-grade bond yields declined 40 to 70 basis points. In addition, however, equity prices and long-term interest rates were influenced importantly by growing optimism in financial markets over the second quarter of 2001 that the economy and profits would rebound strongly toward the end of 2001 and in 2002. On net, equity prices fell 6 percent in the first half of this year as near-term corporate earnings were revised down substantially. Rates on longer-term Treasury issues rose a little, but those on corporate bonds were about unchanged, with the narrowing spread reflecting greater investor confidence in the outlook. But risk spreads remained wide by historical standards for businesses whose debt was rated as marginally investment grade or below; many of these firms had been especially hard hit by the slowdown and the near-term oversupply of high-tech equipment and services, and defaults by these firms became more frequent. Nevertheless, for most borrowers the environment for long-term financing was seen to be quite favorable, and firms and households tended to tap long-term sources of credit in size to bolster their financial conditions and lock in more favorable costs.

Interest Rates

In response to the abrupt deceleration in economic growth and prospects for continued weakness in the economy, the FOMC lowered the target federal funds rate 2¾ percentage points in six steps in the first half of this year, an unusually steep decline relative to many past easing cycles. Through March, the policy easings combined with declining equity prices and accumulating evidence that the slowdown in economic growth was more pronounced than had been initially thought led to declines in yields on intermediate- and longer-term Treasury securities. Over the second quarter, despite the continued decrease in short-term rates and further indications of a weakening economy, yields on intermediate-term Treasury securities were about unchanged, while those on longer-term securities rose appreciably. On net, yields on intermediate-term Treasury securities fell about ¾ percentage point in the first half of this year, while those on longer-term Treasury securities rose about ¼ percentage point.

The increase in longer-term Treasury yields in the second quarter appears to have been the result of a number of factors. The main influence seems to have been increased investor confidence that the economy would soon pick up. That confidence likely arose in part from the aggressive easing of monetary policy and also in part from the improving prospects for, and passage of, a sizable tax cut. The tax cut and the growing support for certain spending initiatives implied stronger aggregate demand and less federal saving than previously anticipated. The prospect that the federal debt might be paid down less rapidly may also have reduced slightly the scarcity premiums investors were willing to pay for Treasury securities. Finally, a portion of the rise may have been the result of increased inflation expectations. Inflation compensation as measured by the difference between nominal Treasury rates and the rates on inflation-indexed Treasury securities rose about ¼ percentage point in the second quarter. Despite this increase, there is little evidence that inflation is expected to go up from its current level. At the end of last year, inflation compensation had declined to levels suggesting investors expected inflation to fall, and the rise in inflation compensation in the second quarter largely reversed those declines. Moreover, survey measures of longer-term inflation expectations have changed little since the middle of last year.

Yields on longer-maturity corporate bonds were about unchanged, on net, over the first half of this year. Yields on investment-grade bonds are near their lows for the past ten years, but those on speculative-grade bonds are elevated. Spreads of corporate bond yields relative to swap rates narrowed a bit, although they still remain high. Amidst signs of deteriorating credit quality and a worsening outlook for corporate earnings, risk spreads on speculative-grade bonds had risen by about 2 percentage points late last year, reaching levels not seen since 1991. Much of this widening was reversed early in the year, as investors became more confident that corporate balance sheets would not deteriorate substantially, but speculative-grade bond spreads widened again recently in response to negative news about second-quarter earnings and declines in share prices, leaving these spreads at the end of the second quarter only slightly below where they began the year. Nonetheless, investors, while somewhat selective, appear to remain receptive to new issues with speculative-grade ratings.

Interest rates on commercial paper and C&I loans have fallen this year by about as much as the federal funds rate, although some risk spreads widened. The average yield spread on second-tier commercial paper over top-tier paper widened to about 100 basis points in late January, about four times its typical level, following defaults by a few prominent issuers. As the year progressed, investors became less concerned about the remaining commercial paper borrowers, and this spread has returned to a more normal level. According to preliminary data from the Federal Reserve's quarterly Survey of Terms of Business Lending, the spread over the target federal funds rate of the average interest rate on commercial bank C&I loans edged up between November and May and remains in the elevated range it shifted to in late 1998. Judging from the widening since 1998 of the average spread between rates on riskier and less-risky loans, banks have become especially cautious about lending to marginal credits.

Equity Markets

After rising in January in response to the initial easing of monetary policy, stock prices declined in February and March in reaction to profit warnings and weak economic data, with the Wilshire 5000, the broadest major stock price index, ending the first quarter down 13 percent. Stock prices retraced some of those losses in the second quarter, rising 7 percent, as first-quarter earnings releases came in a little above sharply reduced expectations and as investors became more confident that economic growth and corporate profits would soon pick up. On net, the Wilshire 5000 ended the half down 6 percent, the DJIA declined 3 percent, and the tech-heavy Nasdaq fell 13 percent. Earnings per share of the S&P 500 in the first quarter decreased 10 percent from a year earlier. A disproportionate share of the decline in S&P earnings—more than half—was attributable to a plunge in the technology sector, where first-quarter earnings were down nearly 50 percent from their peak in the third quarter of last year.

The decline in stock prices has left the Wilshire 5000 down by about 20 percent, and the Nasdaq down by about 60 percent, from their peaks in March 2000. Both of these indexes are near their levels at the end of 1998, having erased the sharp run-up in prices in 1999 and early 2000. But both indexes remain more than two and one-half times their levels at the end of 1994, when the bull market shifted into a higher gear. The ratio of expected one-year-ahead earnings to equity prices began to fall in 1995 when, as productivity growth picked up, investors began to build in expectations that increases in earnings would remain rapid for some time. This measure of the earnings–price ratio remains near the levels reached in 1999, suggesting that investors still anticipate robust long-term earnings growth, likely reflecting expectations for continued strong gains in productivity.

Despite the substantial variation in share prices over the first half of this year, trading has been orderly, and financial institutions appear to have encountered no difficulties that could pose broader systemic concerns. Market volatility and a less ebullient outlook have led investors to buy a much smaller share of stock on margin. At the end of May, margin debt was 1.15 percent of total market capitalization, equal to its level at the beginning of 1999 and well below its high of 1.63 percent in March of last year.

Federal Reserve Open Market Operations

As noted earlier, the Federal Reserve has responded to the diminished size of the auctions of Treasury securities by modifying its procedures for acquiring such securities. To help maintain supply in private hands adequate for liquid markets, since July of last year the System has limited its holdings of individual securities to specified percentages, ranging from 15 percent to 35 percent, of outstanding amounts. To stay within these limits, the System has at times not rolled over all of its holdings of maturing securities, generally investing the difference by purchasing other Treasury securities on the open market. The Federal Reserve also has increased its holdings of longer-term repurchase agreements (RPs), including RPs backed by agency securities and mortgage-backed securities, as a substitute for outright purchases of Treasury securities. In the first half of the year, longer-term RPs, typically with maturities of twenty-eight days, averaged $13 billion.

As reported in the previous *Monetary Policy Report*, the FOMC also initiated a study to evaluate assets to hold on its balance sheet as alternatives to Treasury securities. That study identified several options for further consideration. In the near term, the Federal Reserve is considering purchasing and holding Ginnie Mae mortgage-backed securities, which are explicitly backed by the full faith and credit of the U.S. government, and engaging in repurchase operations against foreign sovereign debt. For possible implementation later, the Federal Reserve is studying whether to auction longer-term discount window credit, and it will over time take a closer look at a broader array of assets for repurchase and for holding outright, transactions that would require additional legal authority.

Debt and the Monetary Aggregates

The growth of domestic nonfinancial debt in the first half of 2001 is estimated to have remained moderate, slowing slightly from the pace in 2000 as a reduction in the rate of increase in nonfederal debt more than offset the effects of smaller net repayments of federal debt. In contrast, the monetary aggregates have grown rapidly so far this year, in large part because the sharp decline in short-term market interest rates has reduced the opportunity cost of holding the deposits and other assets included in the aggregates.

Debt and Depository Intermediation

The debt of the domestic nonfinancial sectors is estimated to have expanded at a 4¾ percent annual rate over the first half of 2001, a touch below the 5¼ percent growth recorded in 2000. Changes in the growth of nonfederal and federal debt this year have mostly offset each other. The growth of nonfederal debt moderated from 8½ percent in 2000 to a still-robust 7¼ percent pace in the first half of this year. Households' borrowing slowed some but was still substantial, buoyed by continued sizable home and durable goods purchases. Similarly, business borrowing moderated even as bond issuance surged, as a good portion of the funds raised was used to pay down commercial paper and bank loans. Tending to boost debt growth was a slowing in the decline in federal debt to a 6¼ percent rate in the first half of this year from 6¾ percent last year, largely because of a decline in tax receipts on corporate profits.

The share of credit to nonfinancial sectors held at banks and other depository institutions edged down in the first half of the year. Bank credit, which accounts for about three-fourths of depository credit, increased at a 3½ percent annual rate in the first half of the year, well off the 9½ percent growth registered in 2000. Banks' loans to businesses and households decelerated even more, in part because borrowers preferred to lock in the lower rates available from longer-term sources of funds such as bond and mortgage markets and perhaps also in part because banks firmed up their lending stance in reaction to concerns about loan performance. Loan delinquency and charge-off rates have trended up in recent quarters, and higher loan-loss provisions have weighed on profits. Nevertheless, through the first quarter, bank profits remained in the high range recorded for the past several years, and virtually all banks—98 percent by assets—were well capitalized. With banks' financial condition still quite sound, they remain well positioned to meet future increases in the demand for credit.

The Monetary Aggregates

The monetary aggregates have expanded rapidly so far this year, although growth rates have moderated somewhat recently. M2 rose 10¼ percent at an annual rate in the first half of this year after having grown 6¼ percent in 2000. The interest rates on many of the components of M2 do not adjust quickly or fully to changes in market interest rates. As a consequence, the steep declines in short-term market rates this year have left investments in M2 assets relatively more attractive, contributing importantly to the acceleration in the aggregate. M2 has also probably been buoyed by the volatility in the stock market this year, and perhaps by lower expected returns on equity investments, leading investors to seek the safety and liquidity of M2 assets.

M3, the broadest monetary aggregate, rose at a 13¼ percent annual rate through June, following 9¼ percent growth in 2000. All of the increase in M3, apart from that accounted for by M2, resulted from a ballooning of institutional money market funds, which expanded by nearly a third. Yields on these funds lag market yields somewhat, and so the returns to the funds, like those on many M2 assets, became relatively attractive as interest rates on short-term market instruments declined.

International Developments

So far this year, average foreign growth has weakened further and is well below its pace of a year ago. Activity abroad was restrained by the continued high level of oil prices, the global slump of the high-technology sector, and spillover effects from the U.S. economic slowdown, but in some countries domestic demand softened as well in reaction to local factors. High oil prices kept headline inflation rates somewhat elevated, but even though core rates of inflation have edged up in countries where economic slack has diminished, inflationary pressures appear to be well under control.

Monetary authorities in most cases reacted to signs of slowdown by lowering official rates, but by less than in the United States. Partly in response to these actions, yield curves have steepened noticeably so far in 2001. Although long-term interest rates moved down during the first quarter, they more than reversed those declines in most cases as markets reacted to a combination of the anticipation of stronger real growth and the risk of increased inflationary pressure. Foreign equity markets—especially for high-tech stocks—were buffeted early this year by many of the same factors that affected U.S. share prices: negative earnings reports, weaker economic activity, buildups of inventories of high-tech goods, and uncertainties regarding the timing and extent of policy responses. In recent months, the major foreign equity indexes moved up along with U.S. stock prices, but they have edged off lately and in most cases are down, on balance, for the year so far.

Slower U.S. growth, monetary easing by the Federal Reserve, fluctuations in U.S. stock prices, and the large U.S. external deficit have not undermined dollar strength. After the December 2000 FOMC meeting, the dollar lost ground against the major currencies; but shortly after the FOMC's surprise rate cut on January 3, the dollar reversed all of that decline as market participants evidently reassessed the prospects for recovery in the United States versus that in our major trading partners. The dollar as measured by a trade-weighted index against the currencies of major industrial countries gained in value steadily in the first three months of 2001, reaching a fifteen-year high in late March. Continued flows of foreign funds into U.S. assets appeared to be contributing importantly to the dollar's increase. Market reaction to indications that the U.S. economy might be headed toward a more prolonged slowdown undercut the dollar's strength somewhat in early April, and the dollar eased further after the unexpected April 18 rate cut by the FOMC. However, the dollar has more than made up that loss in recent months as signs of weakness abroad have emerged more clearly. On balance, the dollar is up about 7 percent against the major currencies so far this year; against a broader index that includes currencies of other important trading partners, the dollar has appreciated 5 percent.

The dollar has gained about 9 percent against the yen, on balance, as the Japanese economy has remained troubled by structural problems, stagnant growth, and continuing deflation. Industrial production has been falling, and real GDP declined slightly in the first quarter, with both private consumption and investment contracting. Japanese exports also have sagged because of slower demand from many key trading partners. Early in the year, under increasing pressure to respond to signs that their economy was weakening further, the Bank of Japan (BOJ) slightly reduced the uncollateralized overnight call rate, its key policy interest rate. By March, the low level of equity prices, which had been declining since early 2000, was provoking renewed concerns about the solvency of Japanese banks. In mid-March, the BOJ announced that it was shifting from aiming at a particular overnight rate to targeting balances that private financial institutions hold at the Bank, effectively returning the overnight rate to zero; the BOJ also announced that it would continue this easy monetary stance until inflation moves up to zero or above. After the yen had moved near the end of March to its weakest level relative to the dollar in more than four years, Japanese financial markets were buoyed by the surprise election in May of Junichiro Koizumi to party leadership and thereby to prime minister. The yen firmed slightly for several weeks thereafter, but continued weak economic fundamentals and increased market focus on the daunting challenges facing the new government helped push the yen back down and beyond its previous low level.

At the start of 2001, economic activity in the euro area had slowed noticeably from the more rapid rates seen early last year but still was fairly robust. Average GDP growth of near 2 percent was only slightly below estimated rates of potential growth, although some key countries (notably Germany) were showing signs of faltering further. Although high prices for oil and food had raised headline inflation, the rate of change of core prices was below the 2 percent ceiling for overall inflation set by the European Central Bank (ECB). The euro also was showing some signs of strength, having moved well off the low it had reached in October. However, negative spillovers from the global slowdown started to become more evident in weaker export performance in the first quarter, and leading indicators such as business confidence slumped. Nevertheless, the ECB held policy steady through April, as further weakening of the euro against the dollar (following a trend seen since the FOMC's rate cut in early January), growth of M3 in excess of the ECB's reference rate, and signs of an edging up of euro-area core inflation were seen as militating against an easing of policy.

In early May, the ECB surprised markets with a 25 basis point reduction of its minimum bid rate and parallel reductions of its marginal lending and deposit rates. In explaining the step, the ECB noted that monetary developments no longer posed a threat to price stability and projected that moderation of GDP growth would damp upward price pressure. The euro has continued to fall since then and, on balance, has declined 9 percent against the dollar since the beginning of the year. Faced with a similar slowdown in the U.K. economy that was exacerbated by the outbreak of foot-and-mouth disease, the Bank of England also cut its official call rate three times (by a total of 75 basis points) during the first half of the year. The Labor Party's victory in parliamentary elections in early June seemed to raise market expectations of an early U.K. euro referendum and put additional downward pressure on sterling, but that was partly offset by signs of stronger inflationary pressure. On balance, the pound has lost about 6 percent against the dollar this year, while it has strengthened against the euro.

The exchange value of the Canadian dollar has swung over a wide range in 2001. In the first quarter, the Canadian dollar fell about 5 percent against the U.S. dollar as the Canadian economy showed signs of continuing a deceleration of growth that had started in late 2000. Exports—especially autos, auto equipment, and electronic equipment—suffered from weaker U.S. demand. Softer global prices for non-oil commodities also appeared to put downward pressure on the Canadian currency. With inflation well within its target range, the Bank of Canada cut its policy rate several times by a total of 125 basis points. So far this year, industries outside of manufacturing and primary resources appear to have been much less affected by external shocks, and domestic demand has maintained a fairly healthy pace. Since the end of March, the Canadian dollar has regained much of the ground it had lost earlier and is down about 2 percent on balance since the beginning of the year.

Global financial markets were rattled in February by serious problems in the Turkish banking sector. Turkish interest rates soared and, after market pressures led authorities to allow the Turkish lira to float, it experienced a sharp depreciation of more than 30 percent. An IMF program announced in mid-May that will bring $8 billion in support this year and require a number of banking and other reforms helped steady the situation temporarily, but market sentiment started to deteriorate again in early July.

In Argentina, the weak economy and the government's large and growing debt burden stoked market fears that the government would default on its debt and alter its one-for-one peg of the peso to the dollar. In April, spreads on Argentina's internationally traded bonds moved up sharply, and interest rates spiked. In June, the government completed a nearly $30 billion debt exchange with its major domestic and international creditors aimed at alleviating the government's cash flow squeeze, improving its debt amortization profile, and giving it time to enact fiscal reforms and revive the economy. Argentine financial conditions improved somewhat following agreement on the debt swap. However, this improvement proved temporary, and an apparent intensification of market concerns about the possibility of a debt default triggered a sharp fall in Argentine financial asset prices at mid-July. This financial turbulence in Argentina negatively affected financial markets in several other emerging market economies. The turmoil in Argentina took a particular toll on Brazil, where an energy crisis added to other problems that have kept growth very slow since late last year. Intervention purchases of the *real* by the Brazilian central bank and a 300 basis point increase in its main policy interest rate helped take some pressure off the currency, but the *real* has declined about 24 percent so far this year.

The weak performance of the Mexican economy at the end of last year caused largely by a fall in exports to the United States (notably including a sharp drop in exports of automotive products) and tight monetary policy carried over into early 2001. With inflation declining, the Bank of Mexico loosened monetary policy in May for the first time in three years. Problems with Mexican growth did not spill over to financial markets, however. The peso has remained strong and is up about 3 percent so far this year, and stock prices have risen.

Average growth in emerging Asia slowed significantly in the first half; GDP grew more slowly or even declined in economies that were more exposed to the effects of the global drop in demand for high-tech products. Average growth of industrial production in Malaysia, Singapore, and Hong Kong, for example, fell from a 15 percent annual rate in late 2000 to close to zero in mid-2001. The turnaround of the high-tech component of industrial production in those countries was even more abrupt—from more than a 30 percent rate of increase to a slight decline by midyear. In the Philippines and Indonesia, economic difficulties were compounded by serious political tensions. Currencies in many of these countries moved down versus the dollar, and stock prices declined. In Korea, the sharp slump in activity that began late last year continued into 2001, as weakness in the external sector spread to domestic consumption and investment. The Bank of Korea lowered its target interest rate a total of 50 basis points over the first half of the year in response to the weakening in activity. The Chinese economy, which is less dependent on technology exports than many other countries in the region, continued to expand at a brisk pace in the first half of this year, as somewhat softer export demand was offset by increased government spending. ■

Domestic Open Market Operations during 2001

Implementation of Monetary Policy in 2001

The directives pertinent to the implementation of domestic open market operations issued by the Federal Open Market Committee (FOMC) instruct the Trading Desk at the Federal Reserve Bank of New York (FRBNY) to foster conditions in the market for reserves consistent with maintaining the federal funds rate at an average around a specified rate. This indicated rate is commonly referred to as the federal funds rate target. The Desk arranges open market operations to target the funds rate, while at the same time achieving certain other objectives that may affect the structure of the Federal Reserve balance sheet.

This report reviews the conduct of open market operations in 2001. It begins with a description of the operating procedures that are used to control the funds rate and a summary of the key new developments in the policy implementation framework. The demand for balances at the Federal Reserve and the behavior of autonomous factors outside the control of the Desk that affect the supply of these balances are described in the following sections. Next, the different domestic financial assets held by the Federal Reserve, and the various types of open market operations used to adjust them, are reviewed. The behavior of the federal funds rate in 2001 and use of the discount window are discussed in the following section. The conduct of open market operations in the aftermath of the terrorist attacks on the World Trade Center and Pentagon on September 11 is reviewed in the final section.

Overview of Operating Procedures to Control the Federal Funds Rate

The FOMC lowered the federal funds rate target on eleven different occasions during 2001, reducing it by a cumulative 4¾ percentage points to end the year at a level of 1¾ percent (table). Three of these rate changes were made between regularly scheduled FOMC meetings. Associated with each FOMC policy move, the Board of Governors approved an equal-sized reduction in the basic discount rate, which preserved a 50 basis point spread of the target funds rate over the discount rate.

To target the federal funds rate, the Desk uses open market operations to

Changes in the Federal Funds Rate Specified in FOMC Directives

Percent

Date of change	Target federal funds rate	Associated discount rate
May 16, 2000	6½	6
January 3, 2001[1]	6	5¾ (5½ on Jan. 4)
January 31	5½	5
March 20	5	4½
April 18[1]	4½	4
May 15	4	3½
June 27	3¾	3¼
August 21	3½	3
September 17[1]	3	2½
October 2	2½	2
November 6	2	1½
December 11	1¾	1¼

1. Policy change came between regularly scheduled meetings.

NOTE. This chapter is adapted from the annual report of the Manager of the System Open Market Account to the Federal Open Market Committee. The original report is available at http://www.ny.frb.org/pihome/Omo/omo2001.pdf.

align the supply of balances held by depository institutions at the Federal Reserve—or Fed balances—with banks' demand for holding balances at the target rate. Each morning, the Desk considers whether open market operations are needed based on estimates of the supply of and demand for balances, taking account of possible forecast errors and minimal levels of aggregate Fed balances that in practice are needed to facilitate settlement of wholesale financial payments by banks. When the funds rate is already near its target, the Desk aims to supply a level of balances in line with its best estimate of demand. And when the funds rate deviates from the target, the Desk may adjust the level of Fed balances it aims to supply accordingly, to nudge the rate in the appropriate direction. Operations designed to alter the supply of Fed balances that same day, most commonly of a short-term temporary nature, are typically arranged around 9:30 a.m. eastern time each morning, shortly after a complete set of estimates is available. Open market operations that are designed primarily to meet other objectives that influence the size or composition of the Fed's balance sheet can generally be arranged at other times of the day, but their use must be coordinated with those operations geared toward achieving a particular level of Fed balances on each day.

The average level of balances banks demand over two-week reserve maintenance periods is in large measure determined by certain requirements to hold balances, with only a small level of additional, or excess, balances typically demanded. Levels of requirements and period-average demands for excess are relatively insensitive to changes in the target level of the federal funds rate or only respond with some lag. The ability of depository institutions to average their holdings of balances over the days within a maintenance period to meet their requirements gives them considerable leeway in managing their accounts from day to day. This flexibility limits the volatility in rates that can develop when the Desk mis-estimates either the supply of or demand for balances. Nonetheless, the funds rate will firm if the level of balances falls so low that some banks have difficulty finding sufficient funds to cover late-day deficits in their Fed accounts; the rate will soften if balances are so high that some banks risk ending a period holding undesired excess balances.

New Developments in 2001

There were no changes made to the FOMC's Authorization for Domestic Open Market Operations in 2001 (appendix A). At its January meeting, the FOMC once again extended temporarily, through its first regularly scheduled meeting in 2002, its authorization for an expanded pool of eligible collateral for the Desk's repurchase agreements (RPs). The principal effect was to continue the inclusion of pass-through mortgage securities of the Government National Mortgage Association, Freddie Mac, and Fannie Mae, and of stripped securities of government agencies. To implement this decision, the FOMC voted to extend temporarily its suspension of several provisions of its "Guidelines for the Conduct of System Open Market Operations in Federal Agency Issues," which impose restrictions on transactions in federal agency securities (appendix B). Late in 2001, the Desk began to accept permanently the direct debt obligations of the Student Loan Marketing Association as collateral on its repurchase transactions.

The Desk continued to operate under the guidelines first articulated in July

2000 that limit the permanent holdings of single Treasury securities in the System Open Market Account (SOMA) to a given share of the total outstanding amount.[1] These guidelines were prompted by the prospect of paydowns of marketable debt associated with projected budget surpluses. Meanwhile, Federal Reserve staff continued work begun in 2000 on various studies of alternative assets the Federal Reserve might hold in its portfolio.

Banks' Demand for Fed Balances

The Desk aims to satisfy banks' demand for holding Fed balances. Total demand may be viewed as the sum of two components: the portion needed to meet all requirements, and the portion held in excess of requirements.

Total Balance Requirements

A bank's total balance requirement measures the level of balances it must hold at the Federal Reserve on average over a two-week maintenance period to meet various regulatory obligations. Total balance requirements may be decomposed into two basic parts: reserve balance requirements (the level of reserve requirements not met with applied vault cash) and clearing balance requirements. In addition, various as-of accounting adjustments may be applied that affect the actual level of Fed balances a bank must hold to meet all these requirements.[2] Clearing balance requirements and, under lagged reserve accounting rules in effect since August 1998, reserve balance requirements are determined prior to the start of each maintenance period, which facilitates estimation of the demand for Fed balances. But not all as-of adjustments are known when a period starts. Most problematically, when large as-of adjustments are applied or reported to the Desk on the settlement day, it affords the Desk little or no opportunity to adjust its estimates of demand and its operations.

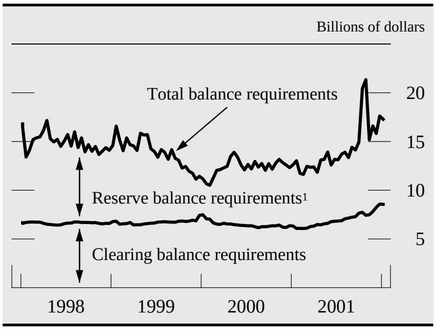
Decreases in short-term interest rates contributed to an increase in the underlying level of requirements, particularly over the second half of the year (chart). Falling interest rates spurred growth in reservable deposits over the year.[3] As a consequence, aggregate reserve requirements rose above the level of banks' applied vault cash, lifting the level of reserve balance requirements in a sustained fashion for the first time since the wholesale adoption of sweep programs in 1995. The reduction in interest rates also contributed to a rise in clearing balance requirements, which registered their first significant increase in several years. With the Fed using lower interest rates linked to the target funds rate to compute earning credits on clearing balance requirements, banks that wish to have the maximum useful

1. A detailed description of these guidelines and their motivation can be found on the web site of the Federal Reserve Bank of New York at http://www.ny.frb.org/pihome/news/announce/2000/an000705.html. They were also discussed in more detail in the Domestic Open Market Operations report for 2000.

2. Clearing balance requirements, applied vault cash, and as-of adjustments affect the level of a bank's total balance requirements, and hence its demand for Fed balances. In published data on reserves, these three variables are treated as sources of reserve supply.

3. At the same time, there was little further growth in new sweep account programs, which in the past had been a major source of decline in reserve requirements. The estimated amount of demand deposits swept by commercial banks through the introduction of new sweep programs during 2001 was about $40 billion, somewhat down from recent years and well below the peak level. A reduction in interest rates also reduces the incentive banks have to expand sweeps to reduce the level of their requirements.

Total Balance Requirements
and Components



NOTE. Maintenance period averages through January 9, 2002.

1. Reserve requirements minus applied vault cash, and less all as-of adjustments.

level of clearing balance requirements, that is, the level that generates just enough income credits to pay for all covered Fed services, had room to increase these requirements. Over the twelve months ending in December, the underlying level of total balance requirements rose about $5 billion, with somewhat more than half coming from the higher reserve balance requirements. This aggregate increase is not large when measured against the size of the Fed's balance sheet, but it is significant as a portion of total requirements.

Total balance requirements increased dramatically, but temporarily, in the two maintenance periods ended October 17 and October 31, as a byproduct of disruptions following the September 11 attacks. Reservable deposits soared at a handful of key money center banks that were not able to transfer out funds on behalf of their customers, and under lagged reserve accounting rules, these institutions faced much higher reserve requirements in October. These banks were able to restore their operational capabilities within days, and the higher levels of reserve requirements were transitory.

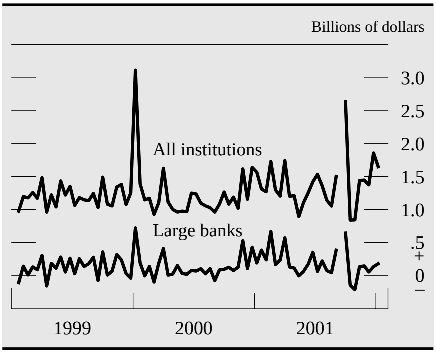
Excess Demands and Actual Excess Levels

Period-average and daily levels of Fed balances are measured relative to the period-average level of requirements, to obtain measures of excess balances. Demands for excess balances display fairly stable and predictable patterns that are insensitive to the level of requirements, and the Desk must estimate these excess demand patterns as part of estimating total demand for Fed balances.[4] The reasons for the severe distortions to excess levels in the aftermath of the September 11 attacks are described in the final section of this report.

Over the last two months of the year, period-average levels of excess balances became more elevated, most notably at smaller banking institutions where positive excess levels historically are concentrated (chart). To some degree, typi-

4. In this section, actual levels of excess balances on average over time are used as an approximation of excess demand, even though a number of factors can cause actual excess levels to deviate from demand on any day or for any period.

Excess Balances



NOTE. Maintenance period averages through January 9, 2002.

Period ended September 19, 2001, not shown (total excess, $38 billion).

Median Levels of Excess Balances, by Day in a Maintenance Period

Millions of dollars

Day of period	1998–2000	2001
Week 1		
Thursday	725	775
Friday	–400	–1,000
Monday	975	200
Tuesday	675	0
Wednesday	725	0
Week 2		
Thursday	675	–475
Friday	–175	–625
Monday	3,450	2,550
Tuesday	2,925	4,250
Wednesday	6,075	8,150

cal seasonal factors, the size of which can vary from year to year, may account for this late-year increase. But anecdotal evidence also suggests that the low absolute level to which interest rates have dropped, thereby lowering the opportunity cost of holding excess balances, may have contributed to the increase. No evidence suggests that excess demand at larger banks has been increasing.

The daily intraperiod distribution of excess balances in 2001 continued to reflect banks' strong preference for concentrating their accumulation of Fed balances late in a maintenance period, after the second weekend (table).[5] The degree of skew was more pronounced over this past year, with banks typically holding somewhat lower levels of excess on most days ahead of the second weekend and larger excess balances on the settlement day. This greater concentration of excess accumulated on the final day was encouraged by strongly held market expectations that the FOMC would adopt a lower target rate at its meetings during the year, most of which happened to fall on the second Tuesday of a maintenance period, which pushed demands for balances toward the end of these periods.

Autonomous Factors Affecting the Supply of Fed Balances

Autonomous factors are the assets and liabilities on the Federal Reserve balance sheet that are outside the direct control of the Trading Desk.[6] They exclude the domestic financial assets controlled through open market operations, discount window loans, and the deposit balances held by depository institutions at the Fed. Federal Reserve note liabilities represent the largest single autonomous factor on the Fed's balance sheet by far, and for this reason the net value (assets minus liabilities) of all autonomous factors has a large negative value; the net value of all other factors is close to zero. Net movements in autonomous factors affect the supply of Fed balances, and thereby create a need for open market operations to change the levels of the various domestic financial assets on the Fed's balance sheet to offset the effects of these factors.[7] The behavior of key factors in the aftermath of the September 11 attacks is discussed in the final section of this report.

5. Median values are shown in table 2 because they are less influenced than average values by the extreme and unrepresentative deviations from normal levels of daily excess that arise from time to time.

6. Autonomous factors are defined to include liabilities arising from matched sale–purchase agreements arranged with foreign official institutions as part of the foreign RP pool. The foreign RP pool is not reported directly on the Fed's balance sheet, but it is a factor that affects the supply of Fed balances.

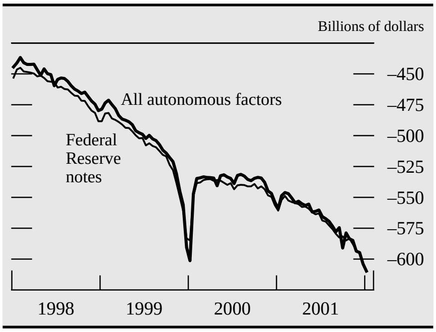
7. In fact, the Desk retains a small degree of discretionary influence over the levels of some autonomous factors, which may be used to shape the need for open market operations on some days.

Federal Reserve Notes

Federal Reserve notes expanded by nearly $50 billion over the year and were once again the largest source of exogenous change on the Fed's balance sheet (chart).[8] Federal Reserve notes outstanding increased at an 8 percent pace over the twelve-month period ending in December, somewhat faster than their 6¾ percent average annual rate of expansion over the preceding five-year interval. Lower interest rates likely spurred demand for Federal Reserve notes in 2001 by reducing the economic cost of holding non-interest-bearing notes. Foreign demand also contributed to faster growth late in the year, compounding the seasonal increase in Federal Reserve notes that occurred ahead of the holidays. Unsettled economic conditions in Argentina seemed to stimulate demand throughout much of the second half of the year.

8. The unusual decline in Federal Reserve notes over the twelve months ended in December 2000 was a byproduct of the temporary bulge in Federal Reserve notes outstanding around the century date change.

Net Value of All Autonomous Factors and Value of Federal Reserve Notes



NOTE. Net value equals assets minus liabilities. Maintenance period averages through January 9, 2002.

Changes in Other Autonomous Factors

By comparison, the change in the net value of all other autonomous factors was small over the year. Some huge temporary changes in the foreign RP pool, Federal Reserve float, and foreign exchange holdings followed the September 11 attacks, but most quickly returned to their pre-attack values. The greatest exception was the level of the foreign RP pool, which remained elevated throughout the fourth quarter of the year. Primarily as a consequence of these higher pool levels, the net value of autonomous factors other than Federal Reserve notes fell a bit, by roughly $2 billion, over 2001.

Volatility and Predictability of Key Autonomous Factors

Excluding the roughly two-week period following the September 11 attacks, the average of the daily absolute changes in the net value of autonomous factors was down from the previous year, and same-day predictability showed a slight improvement (table). Reduced volatility in currency in circulation, which is used as a proxy for Federal Reserve notes in putting together daily forecasts of autonomous factors, mostly reflected the impact of the huge swings in this factor around the century date change, which elevated volatility in each of the two previous years.[9] Although the foreign RP pool was somewhat more volatile

9. Currency in circulation consists mostly of Federal Reserve notes, but it also includes about $30 billion of coins, which are liabilities of the Treasury. In absolute terms, changes in currency in circulation almost entirely reflected movements in Federal Reserve notes.

Daily Changes and Forecast Misses in Key Autonomous Factors:
Average and Maximum of Absolute Values

Millions of dollars

Item	1999		2000		2001 excluding Sept. 11–28		2001, Sept.11–28	
	Average	Maximum	Average	Maximum	Average	Maximum	Average	Maximum
Daily change								
Currency in circulation	918	5,379	970	8,087	851	2,696	919	2,537
Treasury balance	911	7,446	1,460	23,434	823	7,413	2,297	5,671
Foreign RP pool	588	6,050	485	4,015	586	3,273	3,699	7,812
Float	712	6,217	887	9,677	894	4,923	6,888	32,099
Net value	1,709	17,653	2,058	23,896	1,828	7,918	7,028	30,770
Daily forecast miss								
Currency in circulation	233	1,361	238	1,648	210	1,043	502	1,135
Treasury balance	599	3,284	615	6,866	534	2,975	608	1,821
Foreign RP pool	224	1,817	129	976	81	1,127	2,070	4,966
Float	394	4,274	392	2,742	447	2,084	2,312	10,398
Net value	811	5,443	787	7,218	762	3,503	2,568	12,723

NOTE. Forecast misses are based on New York staff estimates. Currency in circulation is used as a proxy for Federal Reserve notes.

during 2001, forecasting errors were down.

The Treasury's Fed balance was much less volatile during 2001 than it was during 2000, and somewhat more predictable. Over the past few years, the ability of the staff to forecast the Treasury's Fed balance on a same-day basis has benefited from improved methods for collecting tax payment information early each morning from around the financial system. In 2001, predictability was also enhanced by a new cash management technique adopted by the Treasury, called dynamic investing, that enabled it to move some portion of unexpected flows arriving in its Fed account into its Treasury tax and loan (TT&L) accounts at commercial banks on a same-day basis. Throughout the year, TT&L capacity remained high relative to the level of Treasury's total cash balances. This helped moderate volatility in the Treasury's Fed balance by reducing the number of days on which the Fed balance jumped because of insufficient TT&L capacity, and it also may have improved indirectly the ability to forecast the Treasury's Fed balance.[10]

Domestic Financial Assets on the Federal Reserve Balance Sheet and Open Market Operations

The total value of all domestic financial assets (less any matched sale–purchase

10. In 2001, the Treasury's general cash balance exceeded TT&L capacity, including Special Direct Investment capacity, by more than the normal level of balances placed at the Fed (usually $5 billion) on only two days, compared with six days in 2000. The number of such occasions was seven in 1999 and sixteen in 1998.

agreements arranged in the market) held by the Federal Reserve mirrors the net level of autonomous factors and of Fed balances.[11] More substantively, the behavior of various autonomous factors and of sources of demand for Fed balances will influence the choice of open market operations used to adjust the Fed's domestic financial portfolio.[12]

Permanent Holdings in the System Open Market Account and Outright Open Market Activity

The domestic SOMA includes all the domestic securities held on an outright basis. By and large, changes in the level of the SOMA have been used to accommodate net changes in autonomous factors and in demands for Fed balances that are expected to endure. For this reason, these holdings are often characterized as being "permanent," although their net value can be reduced whenever needed. The par value of the SOMA stood at $575 billion at year-end, consisting almost entirely of Treasury securities, about $42 billion higher than one year earlier.[13] The expansion in the SOMA in 2001, as in many years, roughly corresponded to the increase in Federal Reserve note liabilities.[14]

The distribution of SOMA holdings by remaining maturity and across individual issues is intended to achieve various objectives associated with having a liquid portfolio without distorting the yield curve or impairing the liquidity of the market for individual Treasury securities. In pursuit of these objectives, the Desk continued to adhere to the per-issue guideline limits on SOMA holdings of individual Treasury issues, articulated in July 2000. It also continued to limit SOMA purchases of newly issued Treasury securities, as it has no particular portfolio need for some of the liquidity characteristics that can add to the value of these issues in the market.

Auction Participation and Redemptions

Typically, any needed expansion of the SOMA is achieved by making outright purchases of Treasury securities in the secondary market, which are then sustained by replacing maturing holdings with newly issued debt at Treasury auctions. At Treasury auctions of coupons and bills in 2001, the FRBNY continued to place add-on bids for the SOMA equal to the lesser of (1) its maturing holdings on the issue date of a new security or (2) the amount that would bring SOMA holdings as a percentage of the issue to the percentage guideline limits.[15] There were no issues maturing

11. In this report, the securities sold under temporary matched sale–purchase agreements (MSPs) as part of the foreign RP pool or in the market are considered financial assets held by the Fed, although they are not officially recorded as such on the Fed's balance sheet. See footnote 6 for the treatment of the foreign RP pool as an autonomous factor liability. In keeping with this treatment, in this report MSPs arranged in the market are considered a financial liability arranged at the discretion of the Desk.

12. Discount window activity is discussed in the section "The Federal Funds Rate and Discount Window Credit."

13. The increase reflects almost entirely new purchases in excess of redemptions but also includes a $529 million increase in the inflation compensation component of inflation-indexed securities, bringing its level to $961 million.

14. By comparison, the slight increase in net balance sheet liabilities from movements in other autonomous factors and the rise in total balance requirements added only modestly to any need for a "permanent" increase in the value of financial assets in the Fed's portfolio.

15. Foreign add-ons, which are not known at the time the Desk determines its level of participation at auctions, were assumed to be zero in this calculation.

on dates when newly auctioned Treasury Inflation Indexed Securities (TIIS) settled. In cases where maturing holdings were to be rolled into more than one new issue of different maturities, the Desk allocated the maturing amount in such a way as to leave the same gap, measured in percentage points, between the per-issue cap and the actual percentage holding of each new issue. A slightly different approach was taken for the weekly bill auctions after the introduction of the new twenty-eight-day bill because of the potential volatility in amounts of twenty-eight-day bills auctioned from week to week. The Desk determined the amount of maturing bills to be rolled over and its allocation on the basis of the smallest twenty-eight-day bill auction size experienced to date, rather than the actual auction size.

Remaining within the per-issue percentage caps while the Treasury continued to cut back on auction sizes through the first half of the year forced another $27 billion of redemptions of maturing Treasury holdings in 2001, roughly equal to the previous year's total; this includes about $1.5 billion of maturing holdings that were redeemed because of the cancellation of a twenty-eight-day bill auction on September 11. Redemptions tapered off over the year, largely as a consequence of the changed federal budget situation and Treasury issuance patterns. Also during the year, $120 million of holdings of Federal agency securities were called, which left a mere $10 million of agency holdings in the SOMA at year-end.

Secondary Market Purchases and Operational Techniques

With redemptions again so large over the year as a whole and growth in Federal Reserve notes strong, the necessary expansion of the SOMA required a record value of outright purchases of Treasury securities by the Trading Desk, amounting to $68.5 billion (table). There were no sales of securities.

About $15 billion of bills were purchased, and bill holdings increased by a significant amount for the first time in several years. Altogether, the Desk purchased $8 billion of bills in the market in four operations. Another $7 billion were purchased directly from foreign central banks, in small daily increments on days when sell orders from these accounts were available and consistent with SOMA portfolio guidelines.[16]

16. The Desk sets a $250 million limit on total daily purchases from foreign accounts, subject to review if reserve needs or orders warrant an exception.

Purchases and Redemptions of Treasury Bills and Coupons

Billions of dollars

Item	1997	1998	1999	2000	2001
Treasury bills					
Purchased outright	5.5	0	0	6.2	8.4
Purchased from internal foreign accounts	3.6	3.6	0	2.5	7.1
Redemptions	0	–2.0	0	–23.8	–10.1
Treasury coupons					
Purchased outright	35.0	26.4	45.4	35.7	53.2
Redemptions	–2.0	–.6	–1.4	–4.1	–16.8

The Desk also purchased $53 billion of coupon securities in the market, arranging a record sixty-four coupon operations.[17] These operations continued to be segmented into separate tranches across different portions of the yield curve to facilitate rapid execution. Given the frequent need for secondary market purchases, the Desk sought to distribute its purchases evenly over time as much as possible and did not attempt to concentrate operations in periods when Federal Reserve note growth was fastest.

The selection of specific issues in each operation was based on the relative attractiveness of propositions and portfolio considerations. In addition to remaining within the per-issue-guideline limits and avoiding on-the-run issues, the Desk avoided purchases that would be expected to cause a sizable redemption on any day in the foreseeable future, and it bought no issues in the secondary market that had less than four weeks remaining to maturity.

General Characteristics of Domestic Permanent SOMA Holdings at Year-End

The average maturity of the entire SOMA portfolio of Treasury securities was 53.5 months at year-end, up slightly from 52.9 months one year earlier. The share of all outstanding marketable Treasury securities held in the SOMA was 19 percent, about a percentage point higher than a year earlier. The SOMA held 25 percent of all bills (compared with 31 percent a year ago), and 17 percent of all coupons including TIIS (compared with 14 percent a year earlier). At the end of the year, approximately $228 billion of marketable Treasury securities remained purchasable under the Desk's guidelines for percentage holdings—compared with $260 billion at the end of the previous year. The gross remaining purchasable amount was $183 billion if account is taken of the practices of avoiding purchases of recently issued debt, purchases that would contribute to sizable redemptions, and purchases of issues that mature within four weeks.

17. This total includes five TIIS operations, totaling $3.3 billion. On one day, two separate coupon operations were arranged.

Temporary Holdings and Open Market Operations

Long-Term Repurchase Agreements

Over the past two years, long-term RPs, defined as operations with an original maturity of more than fifteen days, have been a standard asset in the Fed's domestic financial portfolio.[18] Temporarily increasing the total size of outstanding long-term RPs has proved to be an effective way of addressing significant increases in the net value of autonomous factor liabilities or increases in demands for Fed balances that are expected to last for a number of weeks or months, but not permanently. Long-term RPs can also be adjusted readily to accommodate an extended mismatch between changes in the permanent SOMA and in levels of autonomous factors and total balance requirements.

During the year, the Desk adhered to the practice of arranging an RP with a

18. The choice of any maturity to distinguish long-term from short-term RPs is somewhat arbitrary. Fifteen days had been the maximum allowable maturity under the FOMC's Authorization for many years until 1998, and it approximates the length of a reserve maintenance period. Fifteen days is designated to be the longest "short-term" maturity because, as noted in this section, the RPs the Desk used that carried a fifteen-day maturity had a clear short-term operational focus.

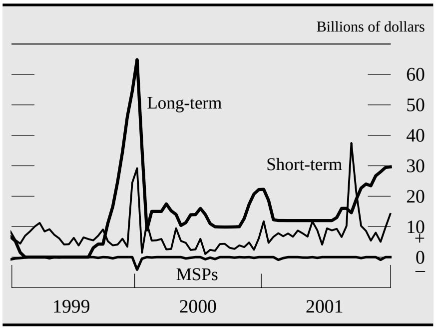
twenty-eight-day maturity on the Monday or Thursday (or both) of each week.[19] These operations are typically arranged early in the morning, before final daily reserve estimates are available, as their use is not geared toward addressing daily volatility in autonomous factors and excess demands. In other respects, these RPs are operationally just like those for short-term maturities. Dealer participation in these long-term RPs has consistently been very strong, measured by the size of propositions.

The sizes of the twenty-eight-day RPs arranged over the year ranged from $2 billion to $5 billion. Over most of the first half of 2001, their total outstanding value stood at $12 billion, which was also the lowest outstanding total for the year (chart). In the third quarter, the Desk built up their underlying level modestly, but in the immediate aftermath of the September 11 attacks the Desk allowed two long-term RPs to mature without replacement, to simplify its market involvement at the time. As reserve deficiencies deepened late in the year, at first when requirements bulged in October and then as Federal Reserve notes began to grow from seasonal factors, long-term RPs were gradually increased, peaking at a level of $31 billion in the year-end maintenance period.

Short-term RPs and MSPs

Short-term temporary operations, RPs and matched sale-purchases (MSPs), are the primary tool used to address day-to-day volatility in autonomous factors and in demands for Fed balances. These operations are also used to fill temporarily the gaps left by more-enduring changes in autonomous factors and Fed balance demands that are not immediately met by changes in the permanent SOMA or long-term RPs outstanding.

Temporary Operations Outstanding



NOTE. Maintenance period averages through January 9, 2002.

Daily volatility in short-term temporary operations outstanding (RPs less MSPs), measured by the average of absolute daily changes in short-term agreements outstanding, has been around $3½ billion in each of the past two years. Daily levels of net short-term operations outstanding ranged from –$4 billion to +$81 billion; excluding the days immediately following the September 11 attacks, the peak was +$31 billion. On a period-average basis, short-term operations outstanding ranged from $4 billion to $38 billion; excluding the two exceptionally high period-average levels that covered late September, the period-average peak was $14 billion. For the year as a whole, short-term temporary operations outstanding averaged $10 billion. The average was closer to $8 billion excluding the September 19 maintenance period, which was somewhat above the $5 billion average outstanding level in 2000.

19. This practice was first begun in March 2000. In January 2002, the Desk began to arrange these twenty-eight-day RPs just once per week, on each Thursday, adjusting the size of each operation to achieve the same desired total outstanding amount. This weekly schedule will continue to provide the desired flexibility to the portfolio at even lower operational cost.

Number of Temporary Operations, by Maturity and Type

Item	1998	1999	2000	2001
One business day	144	147	142	133
Term RPs up to fifteen days	62	83	46	85
Term RPs over fifteen days	3	14	61	88
One-business-day MSPs	21	13	16	10
Term MSPs	1	0	3	0

Volatility in autonomous factors and in demand for Fed balances requires the Desk to be prepared to arrange these operations each day, and often an overlapping structure of short-term operations is constructed. By far the most common operation was an overnight RP (which includes all RPs that cover just one business day), of which 133 were arranged in 2001 (table). As usual, the Fed's portfolio continued to be structured in such a way as to keep reliance on MSPs relatively low.[20]

In general, propositions were sufficient to cover the intended size of the short-term operations the Desk wished to arrange. However, ahead of days on which propositions were expected to run low, the Desk sometimes layered-in term agreements of short duration to ensure this outcome. For example, dealer participation on overnight RPs was relatively low on quarter-end dates, when high excess needs usually required a large amount of short-term RPs to be outstanding. Propositions on RPs on FOMC meeting dates in 2001 also tended to be low, as a byproduct of expected imminent rate cuts. On these dates, by the time the Desk was prepared to arrange its short-term operations, dealers had already met a greater-than-normal share of their total overnight borrowing needs, in response to heightened demand from their institutional customers. These cash investors had greater amounts to invest on an overnight basis with the dealers because the borrowers with whom they normally placed cash on a term basis were issuing less term debt on days of expected rate cuts.

Also in 2001, the Desk arranged two short-term RPs, an overnight operation and a term agreement of up to fifteen days, on seven different maintenance period settlement dates, usually out of concern that propositions on the overnight RP alone might not be adequate to address all of the remaining period need. Given banks' usual preference for holding higher excess levels on settlement dates, which was even more pronounced in 2001, the Desk sometimes faced a larger remaining ''add need'' on these days than it was comfortable addressing with a single, overnight operation. The term agreements arranged on these occasions were used to help meet needs in the following maintenance period.

Collateral Distribution

The Desk solicited propositions across the entire pool of eligible collateral on all RPs arranged in 2001. But with the exception of nine RPs arranged on the

20. One reason the Desk avoids heavy reliance on MSPs is that propositions on these operations in general are low compared with RPs, reflecting dealers' net borrowing needs. Also, given the structure of the Fed's balance sheet, routine reliance on MSPs would require expanding the Fed's holdings of financial assets above the level that is needed to meet its net autonomous factor liabilities and demands for Fed balances.

Average Annual RPs Outstanding, by Collateral Tranche
Billions of dollars

Item	2000		2001	
	Short-term RPs	Long-term RPs	Short-term RPs	Long-term RPs
Treasury	2.3	7.1	4.1	8.0
Agency	1.3	3.7	2.2	4.1
Mortgage-backed	1.5	5.3	3.4	4.5
Total	**5.1**	**16.1**	**9.7**	**16.6**

days immediately following the September 11 attacks, all RPs were arranged as three separate simultaneous operations differentiated by type of collateral eligible. In the first of these, only Treasury debt was accepted; in the second, direct federal agency obligations (in addition to Treasury debt) were eligible; and in the third, mortgage-backed agency debt was eligible (in addition to the other two categories of debt). For the purposes of this report, these separate operations are counted as different tranches of a single RP. In order to simplify the structure of its operations, for several days after September 11 the Desk arranged only RPs with a single tranche, under which dealers had the option to deliver Treasury, agency, or mortgage-backed collateral. All RPs arranged in 2001 settled under the triparty agreements established with two clearing banks in 1999. Under these agreements, dealers have flexibility to choose, and to change from day to day, the specific securities they deliver within each tranche.

The distribution of accepted propositions across collateral categories on multi-tranche RPs was determined by the relative attractiveness of rates in each tranche benchmarked against current market financing rates for that class of collateral. Distributions of collateral by tranche on outstanding RPs tend to be reasonably stable, but they can be very volatile from one operation to the next. In 2001, tranches in which mortgage-backed securities were eligible tended to account for a somewhat smaller share of total outstanding RPs. Their share on short-term RPs in 2001 was about the same as in the previous year, but only because of the large, single-tranche RPs arranged in the aftermath of September 11 (table).[21]

The Federal Funds Rate and Discount Window Credit

The Federal Funds Rate

Daily volatility in the federal funds rate and deviations of effective rates from target in 2001 were slightly higher than in the preceding year, but still to the low side of recent norms (table). Deviations of morning funds rates from target, often a measure of market expectations for likely rate behavior later in the day, continued to show the kinds of recurring patterns associated with certain calendar events seen in previous years. The deviations of the morning rate from target on high-payment-flow days and on Fridays were a touch smaller than in past years. However, morning premiums

21. These tranches reflect options that dealers have for delivering different categories of collateral on outstanding RPs where, for example, a dealer has the option to deliver Treasury debt on agency RPs but not vice versa.

Federal Funds Rate Behaviors: Medians and Averages of Daily Values

Basis points

Item	1998	1999	2000	2001
Deviations of effective rate from target				
Median	0	–1	1	0
Average	2	–1	2	–1
Absolute deviations of effective rate from target				
Median	8	7	4	5
Average	13	11	7	9
Intraday standard deviations				
Median	12	9	6	7
Medians of morning rates less target rate on				
High-payment-flow days (excluding quarter-ends)	25	19	19	16
Fridays	–6	–6	–6	–3
Maintenance period settlement days	13	0	0	6

on maintenance period settlement days, which had been common in the past but which had largely disappeared over the preceding couple of years, were again evident in 2001, averaging around 6 basis points. The higher levels of excess reserves that had to be accumulated on the final day to meet requirements in 2001 may have contributed to funding anxieties of bank reserve managers.

Discount Window Credit

Discount window credit makes up a relatively small portion of the total domestic financial assets held by the Federal Reserve (table). Much of this credit is seasonal borrowing, which behaviorally is more akin to an autonomous factor in terms of its implications for open market operations.[22] Adjustment credit is typically quite small, but the existence of the adjustment credit facility is an important part of the monetary policy implementation framework. It acts as a stabilizer, moderating the upward movements in the federal funds rate in the event a shortage of Fed balances leaves a bank overdrawn on its Fed account at the end of any day or deficient in meeting its requirements on a maintenance period settlement day.

22. There were no instances of extended credit borrowing at the discount window.

Discount Window Borrowing Activity

Item	1998	1999	2000	2001	2001 excluding Sept. 11–13
Average daily amount outstanding (millions of dollars)					
Seasonal credit	96	127	258	73	73
Adjustment credit	66	95	108	319	77
Number of days on which total adjustment borrowing by large banks					
More than $100 million–$500 million	23	17	12	10	10
More than $500 million	10	13	14	11	8

The critical role of the adjustment credit facility during times of severe stress in financing markets is highlighted by the discussion in the following section of its use immediately following the September 11 attacks. For meeting more-routine reserve shortfalls and payments difficulties, even levels of adjustment borrowing that are small relative to the total supply of Fed balances can help alleviate the degree of upward rate pressure that can develop in the market.

Large banks as a group borrowed an amount in excess of $500 million on eleven different days in 2001, including three occasions coming in the immediate aftermath of the September 11 attacks. This total is in line with the number of occasions banks borrowed at least that much in the preceding three years. Large banks borrowed a somewhat smaller but still significant amount, in excess of $100 million, on another ten occasions in 2001, but this number was somewhat below the frequency in most other recent years.

The Conduct of Monetary Operations after September 11

This section presents an overview of the context and conduct of open market operations in the aftermath of the terrorist attacks on the World Trade Center and Pentagon on Tuesday, September 11.

General Financing Market Conditions

Immediately following the attacks, many financial markets effectively ceased operations. But with Fedwire and other wholesale payments networks remaining open, securities dealers and banks faced a continuing need to obtain funding for large pre-existing positions that they typically finance on an overnight basis. Communications disruptions prevented many borrowers from having normal access to their investor base for the first few days after September 11, even among those not directly affected by the attacks, and the impaired ability of a major clearing bank to process funds and securities transfers for itself and on behalf of its customers created additional uncertainties. Banks and dealers, uncertain about their general cash position or the availability of financing, tended to refrain from making cash outlays until later than normal in the day. In the federal funds market, several of the major brokers ceased operations for a time, and many large banks resorted to arranging trades directly with one another. Although not fully back to normal levels of operating efficiency, the payments and communications infrastructure most critical to the functioning of the financing market had recovered considerably by Monday, September 17, and participation levels were much improved.

Behavior of Autonomous Factors

Levels of several of the autonomous factors on the Fed's balance sheet were dramatically affected by some of the responses to the World Trade Center and Pentagon attacks. Over the three-day interval September 12 through September 14 (Wednesday through Friday), net autonomous factor movements increased the supply of Fed balances dramatically, and then net factor movements began to drain large quantities. The level of float in the banking system, normally around $1 billion, peaked at $47 billion on that Thursday as a result of the temporary curtailment of air traffic nationwide. Another $20 billion of Fed balances was created that day when the European Central Bank drew on a temporary foreign currency swap line that had just been established. Meanwhile, investments in the foreign RP pool jumped between $15 billion and $20 billion above recent norms, reducing the supply of Fed balances. The factors that were adding to the supply of Fed balances returned to something like normal levels by Monday, September 17, but persistent high levels of the pool began to leave large underlying deficiencies.

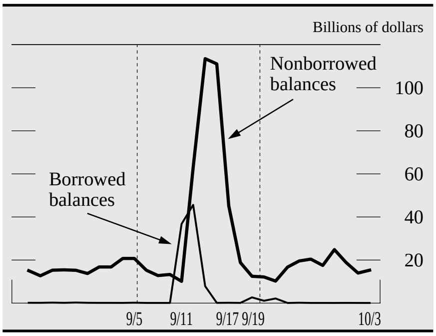
Federal Reserve Monetary Operations, and the Level and Distribution of Fed Balances

On the morning of September 11, the Federal Reserve issued a public release stating, "The Federal Reserve System is open and operating. The discount window is available to meet liquidity needs," to encourage banks to view the discount window as a source of liquidity. September 11 fell in the middle of the maintenance period ended September 19; for the remainder of that period, the Desk arranged only overnight RPs for same-day settlement because of the high degree of volatility in the needed level of RPs outstanding from one day to the next.

From Wednesday through the following Monday, the sizes of open market operations were aimed at satisfying all the financing that dealers wished to arrange with the Desk, in order to mitigate to the extent possible the disruptions to normal trading and settlement arrangements.[23] On these four days, all propositions with rates at or above the prevailing target were accepted, which was the vast majority. Dealers' total demands for financing far surpassed any need to arrange operations simply to provide an aggregate level of Fed balances that would help banks meet their requirements or their desired end-of-day holdings of balances at the Fed. To more effectively serve as a source of financing of last resort and to help encourage dealers to continue to intermediate on behalf of some of their own customers, the Desk operated relatively late in the day, after dealers had a good opportunity to assess their full financing needs and to secure all available financing in the market.

The size of the overnight RPs, which typically may be around $3 billion, peaked on Thursday and Friday at $70 billion and $81 billion, respectively, the same days that autonomous factors also added the most to the supply of Fed balances. Before discount window borrowing, Fed balances on both those days topped $110 billion, and, in general, Fed balances before borrowing were extraordinarily elevated from Wednesday through Monday (chart). But even with such high levels of Fed balances, severe dislocations that interfered with their distribution in the first few days after

Total Federal Reserve Balances
around September 11



NOTE. Vertical dashed lines separate reserve maintenance periods.

23. The RP on September 12 was arranged from the FRBNY's Main Building. Subsequent operations were arranged out of the contingency site at the Bank's East Rutherford Operations Center.

the attacks caused many banks to borrow at the discount window to cover overdraft positions. As a result, levels of adjustment borrowing soared to record levels on Tuesday and Wednesday.

By the final days of the maintenance period, after financing markets began to function more normally, the Desk aimed its operations at maintaining a more traditional balance between the supply of and demand for Fed balances, consistent with the federal funds rate trading around the target level, lowered to 3 percent on September 17. With cumulative excess positions so high and with financing rates generally quite low, reflecting the weight of these excess positions, the Desk was aiming to leave relatively low levels of Fed balances in place each day. The size of the RPs needed to provide even these relatively low levels of balances remained large for a time, reflecting the impact of autonomous factors that were now reducing the supply of Fed balances below normal levels. As dealers increasingly were able to communicate with and obtain financing from their usual customers, the Desk had to move up its operating time to ensure a sufficient level of participation for the large RPs that were still needed, and it had to accept the vast majority of propositions—even those offered at rates well below the new 3 percent target level—in order to arrange RPs of sufficient size.

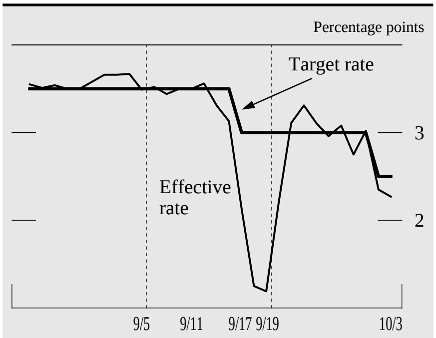
Even with the low levels of excess provided late in the maintenance period, the average level of excess balances for the period ended September 19 was $38 billion. This excess was highly concentrated at a small number of institutions that accumulated high balances as a result of an inability to make payments or to sell funds in the first days after the attacks, and it did not reflect any desire to hold huge excess balances.

In part to simplify the nature of our direct market involvement under exigent circumstances, from September 11 through the remainder of the maintenance period under way, the Desk did not replace any of its maturing long-term RPs, and it arranged no outright operations. On the settlement day, the Desk arranged three term RPs that settled on a forward basis on the first day of the following maintenance period, totaling $23 billion, in order to reduce the level of intervention that would be needed in financing markets in upcoming days. Other changes were also made to simplify operations. Instead of differentiating between collateral types, each RP was arranged as a single tranche where dealers had the option to deliver any of the three categories of collateral. Because some dealers lacked connectivity at their contingency sites, the Desk operated in a semi-manual mode, inputting propositions for many dealers (although the automated trade processing system continued to operate uninterrupted). Because of the time required to establish voice communications with dealers lacking electronic connections and the time needed to receive bids by phone, the time between when an operation was first announced and when it was closed was lengthened, and the Desk often pre-announced its time frame for operating.

Financing Rate Behavior

From Tuesday, September 11, through most of Thursday, September 13, market participants in both the government securities RP markets and in the federal funds market simply priced their trades at the target funds rate, a response to the attacks that likely helped maintain some order in these markets. The high levels of excess balances provided through the Desk's RPs first began to weigh heavily

Federal Funds Rates around September 11



NOTE. Vertical dashed lines separate reserve maintenance periods.

on the funds rate during late trading on Thursday and again on Friday, although through Monday, September 17, morning rates generally reverted back to the target (chart). Thereafter, extremely low rates prevailed in the funds and RP markets for several days, falling even below 1 percent. These low rates in large measure reflected misperceptions that the Desk was continuing to provide high levels of balances, a view reinforced by the continuing large sizes of the RPs and widespread reports that were crediting the Desk with providing abundant liquidity to the market. Several episodes of rates being pushed higher in late-day trading, induced by the relatively low levels of Fed balances the Desk was leaving in place, were needed to nullify these perceptions and to bring the funds rate back up closer to the target.

Appendix A: Authorization for Domestic Open Market Operations

Open market operations were conducted under the Authorization for Domestic Open Market Operations. The Authorization in effect at the end of 2001 is reprinted below.

Authorization for Domestic Open Market Operations

1. The Federal Open Market Committee authorizes and directs the Federal Reserve Bank of New York, to the extent necessary to carry out the most recent domestic policy directive adopted at a meeting of the Committee:

(a) To buy or sell U.S. Government securities, including securities of the Federal Financing Bank, and securities that are direct obligations of, or fully guaranteed as to principal and interest by, any agency of the United States in the open market, from or to securities dealers and foreign and international accounts maintained at the Federal Reserve Bank of New York, on a cash, regular, or deferred delivery basis, for the System Open Market Account at market prices, and, for such Account, to exchange maturing U.S. Government and Federal agency securities with the Treasury or the individual agencies or to allow them to mature without replacement; provided that the aggregate amount of U.S. Government and Federal agency securities held in such Account (including forward commitments) at the close of business on the day of a meeting of the Committee at which action is taken with respect to a domestic policy directive shall not be increased or decreased by more than $12.0 billion during the period commencing with the opening of business on the day following such meeting and ending with the close of business on the day of the next such meeting;

(b) To buy U.S. Government securities, obligations that are direct obligations of, or fully guaranteed as to principal and interest by, any agency of the United States, from dealers for the account of the Federal Reserve Bank of New York under agreements for repurchase of such securities or obligations in 65 business days or less, at rates that, unless otherwise expressly authorized by the Committee, shall be determined by competitive bidding, after applying reasonable limitations on the volume of agreements with individual dealers; provided that in the event Government securities or agency issues covered by any such agreement are not repurchased by the dealer pursuant to the agreement or a renewal thereof, they shall be sold in the market or transferred to the System Open Market Account.

(c) To sell U.S. Government securities that are direct obligations of, or fully guaranteed as to principal and interest by, any agency of the United States to dealers for System Open Market Account under agreements for the resale by dealers of such securities or obligations in 65 business days or less, at rates that, unless otherwise expressly authorized by the Committee, shall be determined by competitive bidding, after applying reasonable limitations on the volume of agreements with individuals dealers.

2. In order to ensure the effective conduct of open market operations, the Federal Open Market Committee authorizes the Federal Reserve Bank of New York to lend on an overnight basis U.S. Government securities held in the System Open Market Account to dealers at rates that shall be determined by competitive bidding but that in no event shall be less than 1.0 percent per annum of the market value of the securities lent. The Federal Reserve Bank of New York shall apply reasonable limitations on the total amount of a specific issue that may be auctioned and on the amount of securities that each dealer may borrow. The Federal Reserve Bank of New York may reject bids which could facilitate a dealer's ability to control a single issue as determined solely by the Federal Reserve Bank of New York.

3. In order to ensure the effective conduct of open market operations, while assisting in the provision of short-term investments for foreign and international accounts maintained at the Federal Reserve Bank of New York, the Federal Open Market Committee authorizes and directs the Federal Reserve Bank of New York (a) for System Open Market Account, to sell U.S. Government securities to such foreign and international accounts on the bases set forth in paragraph 1(a) under agreements providing for the resale by such accounts of those securities in 65 business days or less on terms comparable to those available on such transactions in the market; and (b) for New York Bank account, when appropriate, to undertake with dealers, subject to the conditions imposed on purchases and sales of securities in paragraph 1(b), repurchase agreements in U.S. Government and agency securities, and to arrange corresponding sale and repurchase agreements between its own account and foreign and international accounts maintained at the Bank. Transactions undertaken with such accounts under the provisions of this paragraph may provide for a service fee when appropriate.

4. In the execution of the Committee's decision regarding policy during any intermeeting period, the Committee authorizes and directs the Federal Reserve Bank of New York, upon the instruction of the Chairman of the Committee, to adjust somewhat in exceptional circumstances the degree of pressure on reserve positions and hence the intended federal funds rate. Any such adjustment shall be made in the context of the Committee's discussion and decision at its most recent meeting and the Committee's long-run objectives for price stability and sustainable economic growth, and shall be based on economic, financial, and monetary developments during the intermeeting period. Consistent with Committee practice, the Chairman, if feasible, will consult with the Committee before making any adjustment.

Appendix B: Guidelines for the Conduct of System Open Market Operations in Federal Agency Issues

The FOMC has established specific guidelines for operations in agency securities to ensure that Federal Reserve operations do not have undue market effects and do not serve to support individual issuers. Provisions 3–6 of the guidelines were first temporarily suspended in August 1999, in order to expand the types of agency securities the Desk could accept in its operations around the century date change. This suspension was extended in March 2000, in light of anticipated paydowns of federal debt, and it was reaffirmed in January 2001 until the FOMC's first meeting in 2002.

Guidelines for the Conduct of System Open Market Operations in Federal Agency Issues

1. System open market operations in Federal agency issues are an integral part of total System open market operations designed to influence bank reserves, money market conditions, and monetary aggregates.

2. System open market operations in Federal agency issues are not designed to support individual sectors of the market or to channel funds into issues of particular agencies.

3. System holdings of agency issues shall be modest relative to holdings of U.S. Government securities, and the amount and timing of System transactions in agency issues shall be determined with due regard for the desirability of avoiding undue market effects.

4. Purchases will be limited to fully taxable issues not eligible for purchase by the Federal Financing Bank, for which there is an active secondary market. Purchases will also be limited to issues outstanding in amounts of $300 million or over in cases where the obligations have maturity of five years or less at the time of issuance, and to issues outstanding in amounts of $200 million or over in cases where the securities have a maturity of more than five years at the time of issuance.

5. System holdings of any one issue at any one time will not exceed 30 percent of the amount of the issue outstanding. Aggregate holdings of the issues of any one agency will not exceed 15 percent of the amount of outstanding issues of that agency.

6. All outright purchases, sales, and holdings of agency issues will be for the System Open Market Account. ■