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February 11, 2003**

Board of Governors of the Federal Reserve System



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# Monetary Policy Report to the Congress

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February 11, 2003

Board of Governors of the Federal Reserve System



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Monetary Policy Report to the Congress  
Submitted pursuant to section 2B of the Federal Reserve Act

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## Letter of Transmittal



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BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM  
Washington, D.C.  
February 11, 2003

The President of the Senate  
The Speaker of the House of Representatives

The Board of Governors is pleased to submit its Monetary Policy Report to the Congress pursuant to section 2B of the Federal Reserve Act.

Sincerely,

A handwritten signature in black ink, appearing to read "Alan Greenspan".

Alan Greenspan, Chairman

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# Monetary Policy Report to the Congress

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*Report submitted to the Congress on February 11, 2003, pursuant to section 2B of the Federal Reserve Act*

## **MONETARY POLICY AND THE ECONOMIC OUTLOOK**

The economy of the United States has suffered a series of blows in the past few years, including the fall in equity market values that began in 2000, cutbacks in capital spending in 2001, the horrific terrorist attacks of September 11, the emergence of disturbing evidence of corporate malfeasance, and an escalation of geopolitical risks. Despite these adversities, the nation's economy emerged from its downturn in 2001 to post moderate economic growth last year. The recovery was supported by accommodative monetary and fiscal policies and undergirded by unusually rapid productivity growth that boosted household incomes and held down business costs. The productivity performance was also associated with a rapid expansion of the economy's potential, and economic slack increased over the year despite the growth in aggregate demand.

After turning up in late 2001, activity began to strengthen more noticeably early last year. Sharp inventory cutbacks in 2001 had brought stocks into better alignment with gradually rising final sales, and firms began to increase production in the first quarter of 2002 to curtail further inventory runoffs. Moreover, businesses slowed their contraction of investment spending and began to increase outlays for some types of capital equipment. Household spending on both personal consumption items and housing remained solid and was supported by another installment of tax reductions, widespread price discounting, and low mortgage interest rates. By midyear, the cutbacks in employment came to an end, and private payrolls started to edge higher.

Although economic performance appeared to be gradually improving, the tentative nature of this improvement warranted the continuation of a highly accommodative stance of monetary policy. Accordingly, the Federal Open Market Committee (FOMC) held the federal funds rate at 1<sup>3</sup>/<sub>4</sub> percent through the first part of the year. In March, however, the FOMC shifted from an assessment that the risks over the foreseeable future to its goals of maximum sustainable growth and price stability were tilted toward economic weakness to an assessment that the risks were balanced.

Around midyear, the economy began to struggle again. Concerns about corporate governance came to weigh heavily on investors' confidence, and geopolitical tensions, especially the situation in Iraq, elevated uncertainties about the future economic climate. Equity prices fell during the summer, liquidity eroded in corporate debt markets, and risk spreads widened. Businesses once again became hesitant to spend and to hire, and both manufacturing output and private payrolls began to decline. State and local governments struggled to cope with deteriorating fiscal positions, and the economies of some of our major trading partners remained weak. Although the already accommodative stance of monetary policy and strong upward trend of productivity were providing important support to spending, the Committee perceived a risk that the near-term weakening could become entrenched. In August, the FOMC adjusted its weighting of risks toward economic weakness, and in November, it reduced the targeted federal funds rate 50 basis points, to 1<sup>1</sup>/<sub>4</sub> percent. The policy easing allowed the Committee to return to an assessment that the risks to its goals were balanced. With inflation expectations well contained, this additional monetary stimulus seemed to offer worthwhile insurance against the threat of persistent economic weakness and substantial declines in inflation from already low levels.

On net, the economy remained sluggish at the end of 2002 and early this year. The household sector continued to be a solid source of demand. Motor vehicle sales surged at year-end on the tide of another round of aggressive discounting by the manufacturers, other consumer outlays trended higher, and activity in housing markets remained exceptionally strong. Concerns about corporate governance appeared to recede somewhat late last year, in part because no new revelations of major wrongdoing had emerged. However, the ongoing situation in Iraq, civil strife in Venezuela that has curtailed oil production, and tensions on the Korean peninsula have sustained investors' uncertainty about economic prospects and have pushed prices higher on world oil markets. Faced with this uncertainty, businesses have been cautious in spending and changed payrolls little, on net, over December and January.

Mindful of the especially high degree of uncertainty attending the economic outlook in the current geopolitical environment, the members of the FOMC believe the most likely outcome to be that fundamentals will support

a strengthening of economic growth. Business caution is anticipated to give way over the course of the year to clearer signs of improving sales. Inventories are lean relative to sales at present, and restocking is likely to provide an additional impetus to production in the period ahead. The rapid expansion of productivity, the waning effects of earlier declines in household wealth, and the highly accommodative stance of monetary policy should also continue to boost activity. Although state and local governments face budgetary problems, their restraint is likely to offset only a part of the stimulus from past and prospective fiscal policy actions at the federal level. In addition, the strengthening economies of our major trading partners along with the improving competitiveness of U.S. products ought to support demand for our exports. Taken together, these factors are expected to lead to a faster pace of economic expansion, while inflation pressures are anticipated to remain well contained.

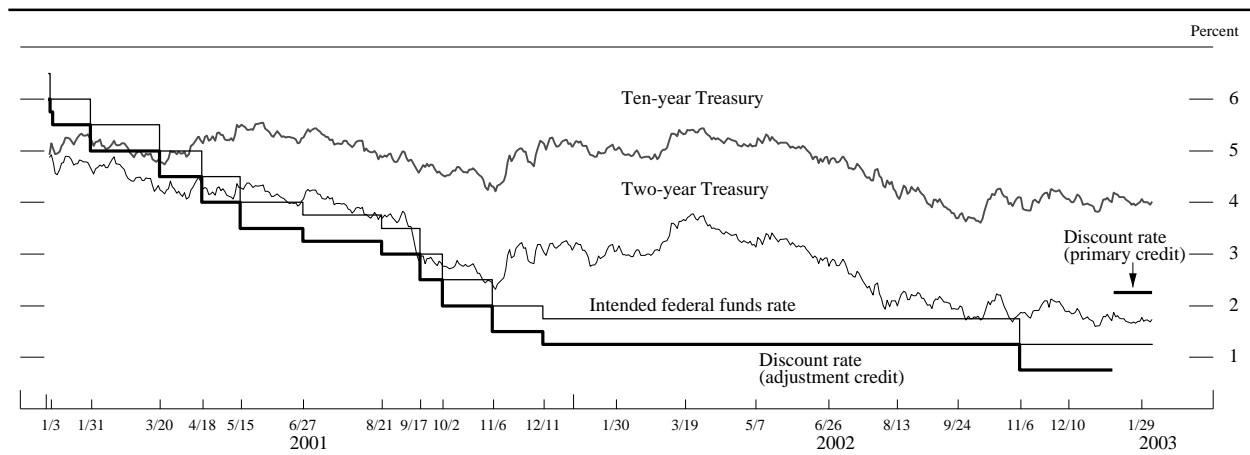
*Monetary Policy, Financial Markets, and the Economy over 2002 and Early 2003*

As economic growth picked up during the early months of 2002, the FOMC maintained its target for the federal funds rate at 1¾ percent. A sharply reduced pace of inventory liquidation accounted for a significant portion of the step-up in real GDP growth, but other indicators also suggested that the economy was gaining momentum. Reductions in business outlays on equipment and software had moderated significantly after dropping precipitously in 2001, and consumer spending was well maintained by sizable gains in real disposable personal income. Residential construction activity was spurred by low home mortgage interest rates. The improvement in economic

conditions sparked a rally in equity markets late in the first quarter and pushed up yields on longer-term Treasury instruments and investment-grade corporate bonds; yields on speculative-grade bonds declined in reaction to brighter economic prospects and the perceived reduction in credit risk. Meanwhile, surging energy prices exerted upward pressure on overall inflation, but still-appreciable slack in resource utilization and a strong upward trend in private-sector productivity were holding down core price inflation.

At both its March and May meetings, the FOMC noted that the apparent vigor of the economy was importantly attributable to a slowdown in the pace of inventory liquidation and that considerable uncertainty surrounded the outlook for final sales over the next several quarters. The Committee was especially concerned about prospects for a rebound in business fixed investment, which it viewed as key to ensuring sustainable economic expansion. Although the decline in investment spending during the first quarter of 2002 was the smallest in a year, gloomy business sentiment and large margins of excess capacity in numerous industries were likely to hamper capital expenditures. According to anecdotal reports, many firms were unwilling to expand capacity until they saw more conclusive evidence of growing sales and profits. At the same time, however, the FOMC noted that, with the federal funds rate unusually low on an inflation-adjusted basis and considerable fiscal stimulus in train, macroeconomic policies would provide strong support to further economic expansion. Against this backdrop, the Committee at the March 19 meeting judged the accommodative stance of monetary policy to be appropriate and announced that it considered the risks to achieving its long-run objectives as being balanced over the foreseeable future, judgments it retained at its meeting in early May.

Selected interest rates



NOTE. The data are daily and extend through February 5, 2003. The dates on the horizontal axis are those of scheduled FOMC meetings and of any intermeeting policy actions. On January 9, 2003, the Federal Reserve changed

the main credit program offered at the discount window by terminating the adjustment credit program and beginning the primary credit program.

The information reviewed at the June 25–26 FOMC meeting confirmed that the economy was expanding but at a slower pace than earlier in the year. As expected, the degree of impetus to economic activity from decelerating inventory liquidation had moderated. Residential investment and consumer spending also had slowed appreciably after surging earlier in the year. The most recent data on orders and shipments suggested a small upturn in business spending on equipment and software, but the improvement in capital spending appeared to be limited, unevenly distributed across industries, and not yet firmly indicative of sustained advance. Industrial production continued to increase, and the unemployment rate declined somewhat.

In financial markets, investors and lenders had apparently become more risk averse in reaction to the mixed tone of economic data releases, growing geopolitical tensions, further warnings about terrorist attacks, and additional revelations of dubious corporate accounting practices. In concert, these developments pushed down yields on longer-term Treasury securities, while interest rates on lower-quality corporate bonds rose notably, and equity prices dropped sharply. Although the economy continued to expand and the prospects for accelerating aggregate demand remained favorable, downbeat business sentiment and skittish financial markets rendered the timing and extent of the expected strengthening of the expansion subject to considerable uncertainty. In these circumstances, the FOMC left the federal funds rate unchanged to keep monetary policy very accommodative and once again assessed the risks to the outlook as being balanced.

By the time of the August 13 FOMC meeting, it had become apparent that economic activity had lost some of its earlier momentum. Turbulence in financial markets appeared to be holding back the pace of the economic expansion. Market participants focused their attention on the lack of convincing evidence that the recovery was gaining traction and the possibility that more news of corporate misdeeds would surface in the run-up to the Securities and Exchange Commission's August 14 deadline for the certification of financial statements by corporate executives. Although the cumulative losses in financial wealth since 2000 were restraining expenditures by households, very low mortgage interest rates were helping to sustain robust demand for housing. Moreover, the financial resources made available by a rapid pace of mortgage refinancing activity, in combination with attractive incentives offered by auto manufacturers, supported other consumer spending. The Committee continued to judge the prevailing degree of monetary accommodation as appropriate to foster a solid expansion that would bring the economy to fuller resource utilization. At the same time, the Committee recognized the considerable risks to

that outlook and the potential adverse consequences for economic prospects from possible additional deterioration of financial conditions. The members noted, however, that a further easing of monetary policy, if it came to be viewed as appropriate, could be accomplished in a timely manner. In light of these considerations, the FOMC opted to retain a target rate of  $1\frac{3}{4}$  percent for the federal funds rate, but it viewed the risks to the economy as having shifted from balanced to being tilted toward economic weakness.

When the FOMC met on September 24, data indicated that economic growth had picked up in the third quarter, on average, buoyed in part by a surge in motor vehicle production. The uneventful passing of the mid-August deadline for recertification of corporate financial statements briefly alleviated investors' skittishness in debt and equity markets. However, the most timely information suggested that some softening in economic activity had occurred late in the summer. Those economic reports, along with a darker outlook for corporate profits and escalating fears of a possible war against Iraq, led market participants to revise down their expectations for the economy. Equity prices and yields on both longer-term Treasury and private securities moved sharply lower in early autumn. In the Committee's view, heightened geopolitical tensions constituted a significant additional source of uncertainty clouding the economic outlook. Still, fundamentals suggested reasonable prospects for continued expansion. Accordingly, the FOMC left the federal funds rate unchanged at the close of the September meeting but also reiterated its view that the risks to the outlook were weighted toward economic weakness.

The information reviewed at the November 6 meeting indicated a more persistent spell of below-par economic performance than the FOMC had anticipated earlier. With home mortgage rates at very low levels, residential construction activity remained high. But consumer spending had decelerated noticeably since midsummer under the combined weight of stagnant employment and declining household wealth resulting from further decreases in equity prices. Worries about the potential for war against Iraq, as well as persistent concerns about the course of economic activity and corporate earnings, were apparently engendering a high degree of risk aversion among business executives that was constraining capital spending and hiring. Despite a weakening in the exchange value of the dollar, sluggish economic growth among major trading partners spelled difficulties for U.S. exports, and a rebound in foreign output seemed more likely to follow than to lead a rebound at home. Moreover, economic slack that was larger and more persistent than previously anticipated ran the risk of reducing core inflation appreciably further from already low levels. Given these considerations, the Committee lowered its target for the fed-

eral funds rate  $\frac{1}{2}$  percentage point, to  $1\frac{1}{4}$  percent. The relatively aggressive adjustment in the stance of monetary policy was deemed to offset the potential for greater economic weakness, and the Committee accordingly announced that it judged risks to the outlook as balanced with respect to its long-run goals of price stability and sustainable economic growth.

When the FOMC met on December 10, overall conditions in financial markets had calmed considerably. Indicators of production and spending, however, remained mixed. The manufacturing sector registered large job losses in the autumn, and industrial production continued its slide, which had begun around midyear. A more vigorous rebound in business fixed investment was not evident, and indeed the recent data on orders and shipments and anecdotal reports from business contacts generally signaled continued softness in capital spending. Very low home mortgage interest rates were supporting residential construction activity, but consumption expenditures were sluggish. On balance, the Committee's view was that in the absence of major shocks to consumer and business confidence, a gradual strengthening of the economic expansion was likely over the coming quarters, especially given the very accommodative stance of monetary policy and probable further fiscal stimulus. The FOMC left the federal funds rate unchanged and indicated that it continued to view the risks to the outlook as balanced over the foreseeable future.

By the time of the FOMC meeting on January 28–29, 2003, it had become apparent that the economy had grown only slowly in the fourth quarter of last year, but little evidence of cumulating weakness appeared in the most recent data, and final demand had held up reasonably well. The escalation of global tensions weighed heavily on business and investor sentiment. Firms apparently were remaining very cautious in their hiring and capital spending, and equity prices had declined on balance since the December meeting. But yield spreads on corporate debt—especially for riskier credits—narrowed further, and longer-term Treasury yields declined slightly. Although the fundamentals still pointed to favorable prospects for economic growth beyond the near term, geopolitical developments were making it especially difficult to gauge the underlying strength of the economy, and uncertainties about the economic outlook remained substantial. Against this background, the Committee decided to leave the federal funds rate unchanged and stated that it continued to judge the risks to the outlook as balanced.

### *Economic Projections for 2003*

An unusual degree of uncertainty attends the economic outlook at present, in large measure, but not exclusively, because of potential geopolitical developments. But Fed-

eral Reserve policymakers believe the most probable outcome for this year to be a pickup in the pace of economic expansion. The central tendency of the real GDP forecasts made by the members of the Board of Governors and the Federal Reserve Bank presidents is  $3\frac{1}{4}$  percent to  $3\frac{1}{2}$  percent, measured as the change between the final quarter of 2002 and the final quarter of this year. The full range of these forecasts is 3 percent to  $3\frac{3}{4}$  percent. Of course, neither the central tendency nor the range is intended to convey the uncertainties surrounding the individual forecasts of the members. The civilian unemployment rate is expected to end the year in the  $5\frac{3}{4}$  percent to 6 percent range.

Apart from the geopolitical and other uncertainties, the forces affecting demand this year appear, on balance, conducive to a strengthening of the economic expansion. Monetary policy remains highly accommodative, and federal fiscal policy is and likely will be stimulative. However, spending by many state and local governments will continue to be restrained by considerable budget difficulties. Activity abroad is expected to improve this year, even if at a less robust pace than in the United States; such growth together with the improving competitiveness of U.S. products should generate stronger demand for our exports. Furthermore, robust gains in productivity, though unlikely to be as large as in 2002, ought to continue to promote both household and business spending. Household purchasing power should be supported as well by a retreat in the price of imported energy products that is suggested by the oil futures market. And the adverse effects on household spending from past declines in equity wealth probably will begin to wane.

A reduction of businesses' hesitancy to expand investment and hiring is critical to the durability of the expansion, and such a reduction should occur gradually if geopolitical risks ease and profitability improves. Inventories are relatively lean, and some restocking ought to help boost production this year, albeit to a much smaller extent than did last year's cessation of sharp inventory

### Economic projections for 2003

Percent

Indicator	MEMO 2002 actual	Federal Reserve Governors and Reserve Bank presidents	
		Range	Central tendency
<i>Change, fourth quarter to fourth quarter<sup>1</sup></i>			
Nominal GDP .....	4.1	$4\frac{1}{2}$ – $5\frac{1}{2}$	$4\frac{3}{4}$ –5
Real GDP .....	2.8	3– $3\frac{3}{4}$	$3\frac{1}{4}$ – $3\frac{1}{2}$
PCE chain-type price index .....	1.9	$1\frac{1}{4}$ – $1\frac{3}{4}$	$1\frac{1}{4}$ – $1\frac{1}{2}$
<i>Average level, fourth quarter</i>			
Civilian unemployment rate .....	5.9	$5\frac{3}{4}$ –6	$5\frac{3}{4}$ –6

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



liquidations. In addition, the continued growth of final sales, the tax law provision for partial expensing of equipment purchases, replacement demand, and a more hospitable financial environment should induce many firms to increase their capital spending. The growth of investment likely will be tempered, however, by the persistence of excess capital in some areas, notably the telecommunications sector, and reductions in business spending on many types of new structures may continue this year.

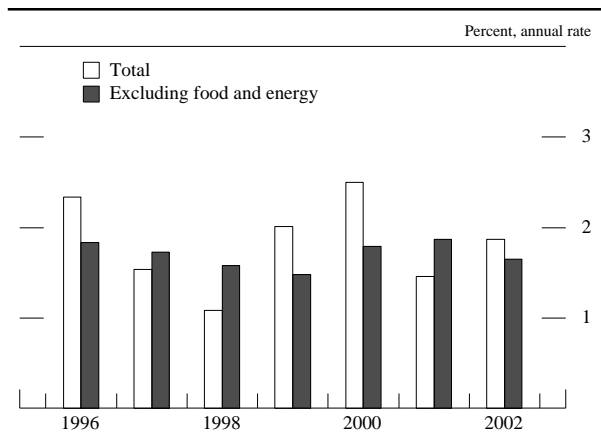
Federal Reserve policymakers believe that consumer prices will increase less this year than in 2002, especially if energy prices partly reverse last year's sharp rise. In addition, resource utilization likely will remain sufficiently slack to exert further downward pressure on underlying inflation. The central tendency of FOMC members' projections for increases in the chain-type price index for personal consumption expenditures (PCE) is  $1\frac{1}{4}$  percent to  $1\frac{1}{2}$  percent this year, lower than the actual increase of about 2 percent in 2002.

### ***ECONOMIC AND FINANCIAL DEVELOPMENTS IN 2002 AND EARLY 2003***

In 2002, the United States economy extended the upturn in activity that began in late 2001. Real GDP increased  $2\frac{3}{4}$  percent over the four quarters of last year, according to the advance estimate from the Commerce Department. However, the pace of activity was uneven over the course of the year, as concerns about emerging economic and political developments at times weighed heavily on an economy already adjusting to a succession of shocks from previous years.

Economic conditions improved through the first part of the year. Household spending on both personal con-

Change in PCE chain-type price index



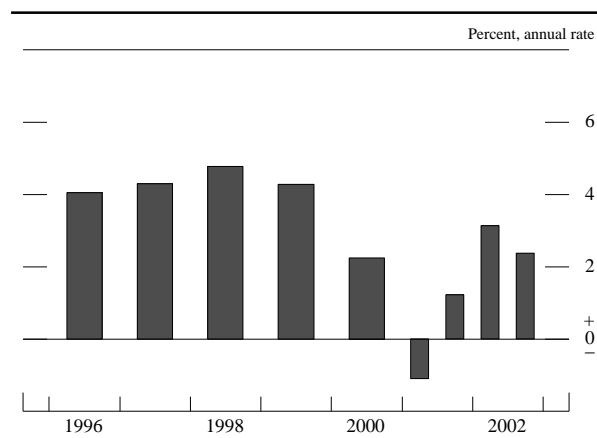
NOTE: The data are for personal consumption expenditures (PCE).

sumption items and housing remained solid, businesses curtailed their inventory liquidation and began to increase their outlays for some types of capital equipment, and private employment started to edge higher. But the forward momentum diminished noticeably later in the year when concerns about corporate governance put a damper on financial markets and geopolitical developments boosted oil prices and added to the uncertainty already faced by businesses about the economic outlook. In the summer, equity prices fell, risk spreads widened, and liquidity eroded in corporate debt markets. Businesses' caution was reflected in their reluctance to substantially boost investment, restock inventories, or add to payrolls. Responding to these developments, as well as some weakening in demand from abroad, manufacturers trimmed production during the fall. Employment at private businesses declined again, and the unemployment rate rose to 6 percent in December. However, despite the modest pace of last year's overall recovery, output per hour in the nonfarm business sector grew  $3\frac{3}{4}$  percent over the year—an extraordinary increase even by the standards of the past half decade or so.

Signals on the trajectory of the economy as we enter 2003 remain mixed. Some of the factors that had noticeably restrained the growth of real GDP in the fourth quarter of last year—most especially a sharp decline in motor vehicle production—are not on track to be repeated. Moreover, employment leveled off on average in December and January, and readings on industrial production have had a somewhat firmer tone of late. Nevertheless, the few data in hand suggest that the economy has not yet broken out of the pattern of subpar performance experienced over the past year.

Consumer price inflation moved up a bit last year, reflecting sharply higher energy prices. Excluding the prices of food and energy items, the price index for per-

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.

sonal consumption expenditures increased 1<sup>3</sup>/<sub>4</sub> percent, about 1/4 percentage point less than in 2001; this deceleration most likely resulted from continued slack in labor and product markets, robust gains in productivity, and somewhat lower expectations of future inflation.

### The Household Sector

#### Consumer Spending

Consumer spending grew at a moderate pace last year and, on the whole, continued to be an important source of support for overall demand. Personal consumption expenditures rose 2<sup>1</sup>/<sub>2</sub> percent in real terms, near the 2<sup>3</sup>/<sub>4</sub> percent increase in 2001 and down from the more than 4 percent average growth over the preceding several years. Sales of new motor vehicles fell only a little from the extremely high levels of late 2001; outlays were especially strong during the summer and late in the year, when manufacturers were offering aggressive price and financing incentives. Growth of spending on other durable goods was well maintained last year as well, although the gains were smaller than is often seen early in an economic recovery; in contrast to the situation in many previous cycles, spending on durable goods did not decline sharply during the recession and so had less cause to rebound as the recovery got under way. Apart from outlays on durable goods, spending for most categories of consumer goods and services increased at a moderate rate last year.

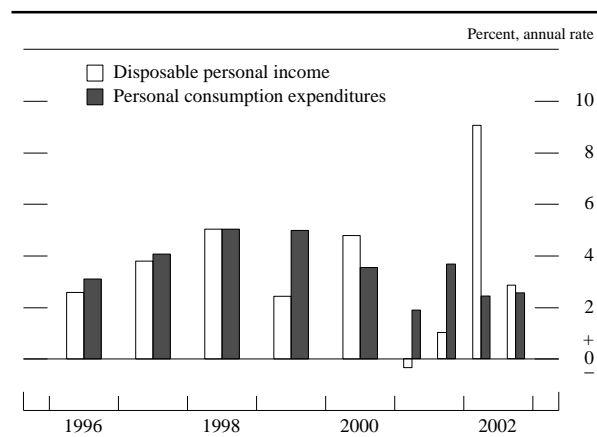
That moderate rate of aggregate consumption growth was the product of various crosscurrents. On the positive side, real disposable personal income rose nearly 6 percent last year, the fastest increase in many years. Strong productivity growth partially offset the effects of stagnant employment in restricting the growth of household

income, and the phase-in of additional tax reductions from the Economic Growth and Tax Relief Reconciliation Act of 2001 boosted household purchasing power appreciably. In addition, high levels of mortgage refinancing allowed homeowners to reduce their monthly payments, pay down more costly consumer credit, and, in many cases, extract equity that could be used to support other spending. On the negative side, household wealth again moved lower last year, as continued reductions in equity values outweighed further appreciation of house prices. By the end of the third quarter, according to the Federal Reserve's flow-of-funds accounts, the ratio of household net worth to disposable income had reversed nearly all of its run-up since the mid-1990s.

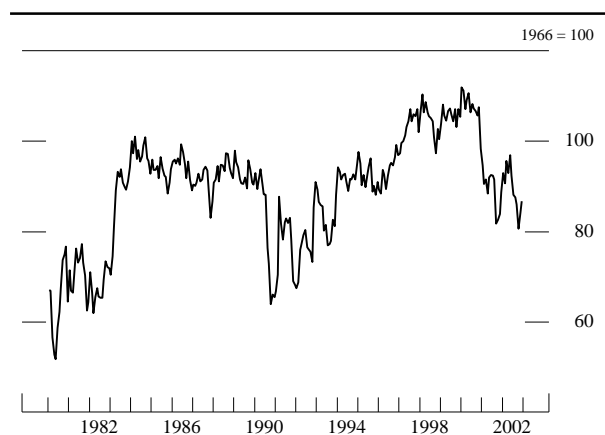
Consumer confidence, which had declined during most of 2001 and especially after the September 11 attacks, picked up in the first half of last year, according to both the Michigan Survey Research Center (SRC) and Conference Board surveys. However, confidence retreated over the summer along with the drop in equity prices, and by early this year, consumer confidence again stood close to the levels of late 2001. These levels of consumer confidence, though at the bottom of readings of the past several years, are nevertheless above levels normally associated with recession.

The personal saving rate, which has trended notably lower since the early 1980s, moved above 4 percent by late last year after having averaged 2<sup>1</sup>/<sub>4</sub> percent in 2001. The saving rate has been buffeted during the past two years by surges in income induced by tax cuts and by spikes in spending associated with variations in motor vehicle incentives. But, on balance, the extent of the increase in the saving rate has been roughly consistent with a gradual response of consumption to the reduction in the ratio of household wealth to disposable income.

Change in real income and consumption

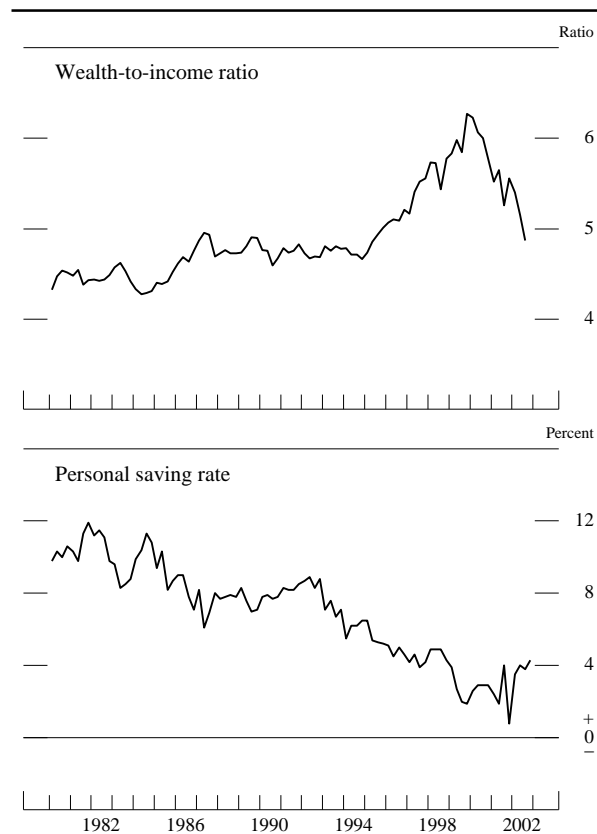


Consumer sentiment



SOURCE: University of Michigan Survey Research Center.

## Wealth and saving



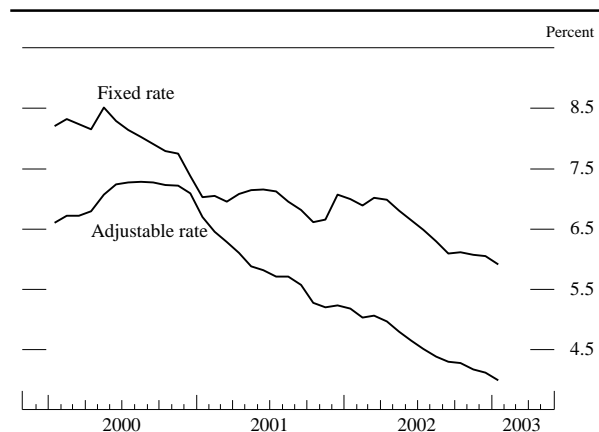
NOTE. The data are quarterly. The wealth-to-income ratio is the ratio of household net worth to disposable personal income and extends through 2002:Q3; the personal saving rate extends through 2002:Q4.

## Residential Investment

Real expenditures on residential investment increased 6 percent in 2002—the largest gain in several years. Demand for housing was influenced by the same factors affecting household spending more generally, but it was especially supported by low interest rates on mortgages. Rates on thirty-year fixed-rate mortgages, which stood at around 7 percent in the first months of the year, fell to around 6 percent by the autumn and dipped below that level early this year—the lowest in thirty-five years. Not surprisingly, attitudes toward homebuying, as measured by the Michigan SRC, remained quite favorable.

Starts of new single-family homes were at 1.36 million units last year, 7 percent above the already solid pace for 2001. Sales of both new and existing homes were brisk as well. Home prices continued to rise but at a slower rate than in 2001, at least according to some measures. The repeat-sales price index for existing homes rose 5½ percent over the four quarters ended in 2002:Q3, a slowing from the 8¾ percent increase over the comparable year-earlier period. The constant-quality price index for new homes rose 4½ percent last year, but this

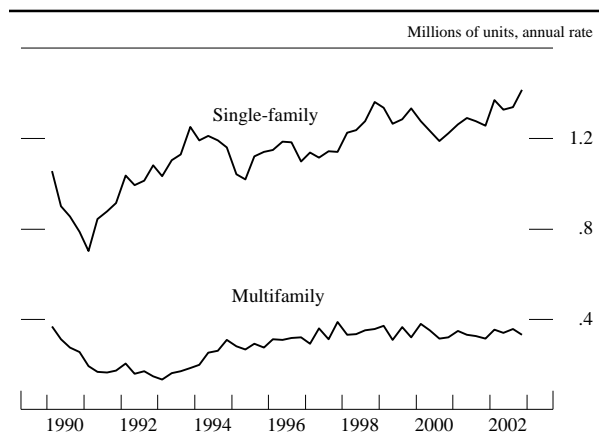
## Mortgage rates



NOTE. The data, which are monthly and extend through January 2003, are contract rates on thirty-year mortgages.

SOURCE. Federal Home Loan Mortgage Corporation.

## Private housing starts



NOTE. The data are quarterly.

increase was close to the average pace over the past few years. At the same time, measures of house prices that do not control for the mix of homes sold rose considerably more last year than in 2001, a difference indicating that a larger share of transactions were in relatively expensive homes.

In the multifamily sector, starts averaged a solid 345,000 units last year, an amount in line with that of the preceding several years. However, the pace of building slowed a little in the fall. Apartment vacancy rates moved notably higher last year and rent and property values declined; these changes suggest that the strong demand for single-family homes may be eroding demand for apartment space.

## Household Finance

Households continued to borrow at a rapid pace last year; the 9¼ percent increase in their debt outstanding was the

largest since 1989. Low mortgage interest rates helped spur both very strong home purchases and refinancing of existing loans, which together increased home mortgage debt 11½ percent. Refinancing activity was especially elevated in the fourth quarter, when fixed mortgage interest rates dipped to around 6 percent. Torrid refinancing activity helps explain last year's slowdown of consumer credit, which is household borrowing not secured by real estate: A significant number of households reportedly extracted some of the equity from their homes at the time of refinancing and used the proceeds to repay other debt as well as to finance home improvements and other expenditures. According to banks that participated in the Federal Reserve's Senior Loan Officer Opinion Survey on Bank Lending Practices in October, the frequency and size of cash-out refinancings were substantially greater than had been reported in the January 2002 survey. Although automakers' financing incentives and attractive cash rebates stimulated a substantial amount of consumer borrowing, the growth rate of consumer credit in 2002, at 4¼ percent, was more than 2½ percentage points below the pace in 2001.

Even though households took on a large amount of mortgage debt last year, extraordinarily low mortgage rates kept the servicing requirement for that debt (measured as a share of homeowners' disposable income) well below its previous peak levels. Moreover, reflecting large gains in residential real estate values, equity in homes has continued to increase despite sizable debt-financed extractions. The combined influence of low interest rates and the sizable gain in disposable personal income also kept the total servicing costs faced by households—which in addition to home mortgage payments include costs of other financial obligations such as rental payments of tenants, consumer installment credit, and auto leases—relative to their incomes below previous peaks. Against

this backdrop, broad measures of household credit quality deteriorated very little last year, and signs of financial stress were confined mainly to the subprime segment of the market. Delinquency rates on home mortgages inched up, while those on auto loans at finance companies were flat. Delinquency rates on credit cards bundled into securitized asset pools remained close to those of recent experience.

### *The Business Sector*

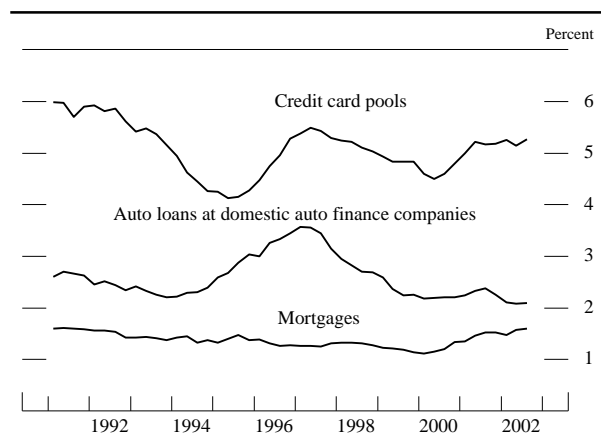
Overall business fixed investment moved lower last year, although the decline was not nearly so precipitous as in 2001. Outlays for equipment and software edged up, but spending on structures fell sharply. Financing conditions worsened over the summer, with equity prices declining, initial public offerings (IPOs) drying up, credit market spreads widening, and banks tightening up somewhat on credit standards in the wake of increased reports of corporate malfeasance. In addition, geopolitical concerns increased firms' already heightened uncertainty about the economic outlook. These factors contributed to an apparent deterioration in business confidence, and businesses still have not felt any great urgency to boost investment appreciably. For similar reasons, although firms slowed their rate of inventory liquidation last year, they have yet to undertake a sustained restocking.

### Fixed Investment

After dropping sharply in 2001, real spending on equipment and software rose 3 percent last year. Spending on high-technology equipment, one of the hardest-hit sectors in 2001, showed signs of uneven improvement. The clearest rebound was in computing equipment, for which spending rose 25 percent in real terms; this gain fell short of the increases posted in the late 1990s but far more than reversed the previous year's decline. Software investment also turned positive, rising 6 percent after declining about 3 percent in 2001. By contrast, real outlays for communications equipment were reported to be up only slightly in 2002 after plummeting 30 percent in 2001.

Business spending on aircraft fell sharply last year. Airlines were hit especially hard by the economic downturn and by the reduction in air travel after the September 11 attacks; although expenditures for new aircraft held up through the end of 2001 because of the very long lags involved in producing planes, shipments of planes slowed greatly thereafter. Meanwhile, business outlays on motor vehicles edged up last year. Demand for autos and light trucks by rental companies weakened sharply along with the drop in air traffic that occurred after September 11 but recovered gradually over the course of last year. Purchases of medium and heavy trucks fell off overall,

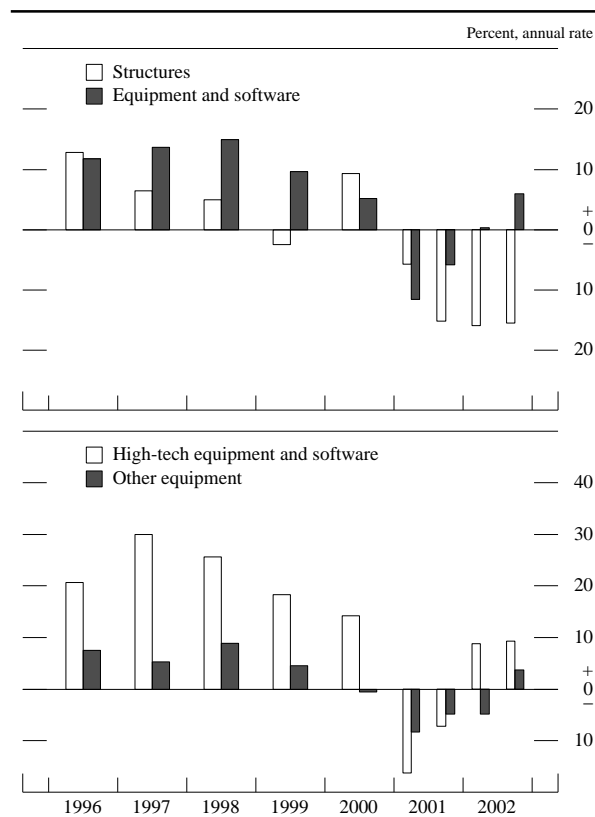
Delinquency rates on selected types of household loans



NOTE. The data are quarterly and extend through 2002:Q3.

SOURCE. For mortgages, the Mortgage Bankers Association; for auto loans, the Big Three automakers; for credit cards, Moody's Investors Service.

## Change in real business fixed investment



NOTE. High-tech equipment consists of computers and peripheral equipment and communications equipment.

despite the fact that demand for heavy (class 8) trucks was boosted by spending in advance of the implementation of more-stringent environmental regulations.

Investment in equipment other than high-tech and transportation goods moved modestly higher through most of last year, as real outlays for industrial machinery and a wide range of other equipment gradually strengthened through the summer. Although spending edged lower again in the fourth quarter, investment in non-high-tech, nontransportation equipment increased 3½ percent for the year as a whole.

Spending on equipment and software was supported last year by low interest rates, which helped hold down the cost of capital, as did the tax provision enacted in March 2002 that allows partial expensing of new equipment and software purchased before September 11, 2004. Moreover, modest increases in final sales together with replacement demand no doubt spurred many firms to make new capital outlays. Nevertheless, some sectors, most notably telecommunications, probably still had excess holdings of some forms of capital. Concerns about corporate malfeasance, which had become more intense over the spring and summer, weighed heavily on financial markets and raised the cost of capital through reduced share prices and higher yields on the bonds of lower-rated

firms. In addition, uncertainty about the geopolitical situation, including the possible consequences for oil prices of an outbreak of war with Iraq, likely made many firms reluctant to commit themselves to new expenditures. In all, businesses have been, and appear to remain, quite cautious about undertaking new capital spending projects.

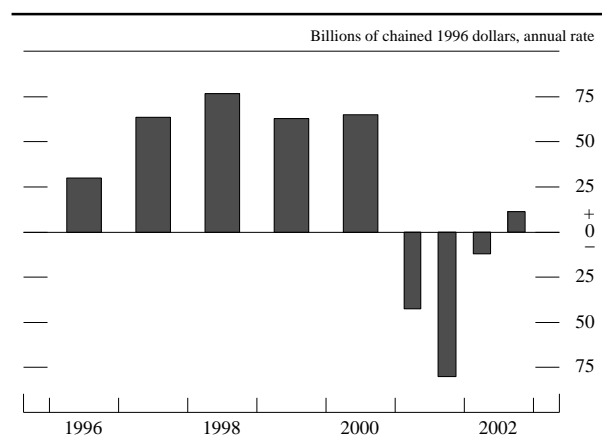
Real business spending for nonresidential structures declined sharply for a second year in 2002. Outlays for the construction of office buildings and industrial buildings were especially weak. Vacancy rates for such buildings increased throughout the year, and property values and rents moved lower. Construction of new hotels and motels also fell considerably, reflecting the weakness in the travel industry. By contrast, spending on other commercial buildings, such as those for retail, wholesale, and warehouse space, moved only a little lower last year.

A number of factors likely account for investment in structures having been much weaker than investment in equipment. Structures depreciate very slowly, so businesses can defer new outlays without incurring much additional deterioration of their capital stock. And unlike investment in equipment, spending on structures is not eligible for partial expensing. According to some analysts, concerns about additional acts of terrorism (and, until late in the year, the lack of insurance to cover such events) may also have had a damping effect on some types of construction, particularly large “trophy” projects.

## Inventory Investment

The sharp inventory runoffs that characterized the economic downturn, together with gradually rising final sales, implied that, by early last year, stocks were in much better alignment with sales than had been the case during 2001. Accordingly, businesses lessened the pace of inventory liquidation early in the year and by summer

## Change in real business inventories



had turned to some modest restocking. However, firms appeared to have exerted tight control over production and inventories; with prospects for the strength of the recovery having diminished in the second half of the year, businesses quickly cut production, and inventories only edged up in the fourth quarter, according to incomplete and preliminary data. In all, total inventories were about unchanged last year compared with a liquidation of more than \$60 billion in 2001, and this turnaround contributed 1 percentage point to the growth of real GDP over the year. At year-end, inventory-to-sales ratios in most sectors stood near the low end of their recent ranges.

In the motor vehicle industry, last year's very strong sales were matched by high levels of production, and the stock of inventories, especially for light trucks, appeared at times to be higher than the industry's desired levels. Nevertheless, the surge in sales late in the year helped to pare stocks, and dealers ended the year with inventories of light vehicles at a comfortable level.

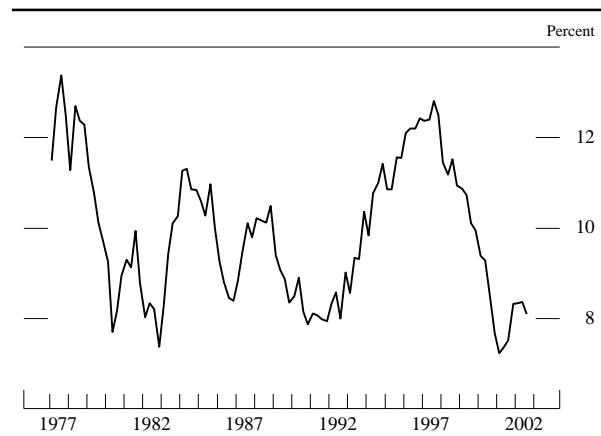
### Corporate Profits and Business Finance

The profitability of the U.S. nonfinancial corporate sector improved from its lows of 2001 but relative to sector output remained at the low end of the range experienced over the past thirty years. Economic profits of nonfinancial corporations—that is, book profits adjusted for inventory valuations and capital consumption allowances—rebounded in late 2001 and were little changed through the third quarter of last year. The sluggish expansion of aggregate demand and the lack of pricing power associated with intense competitive pressures were the main factors that held down profits in 2002. Also playing a role, especially in the manufacturing sector, were

costs arising from underfunded defined-benefit pension plans. Reflecting the pause in economic growth, earnings reports for the fourth quarter indicate that profits may have dropped some late in the year.

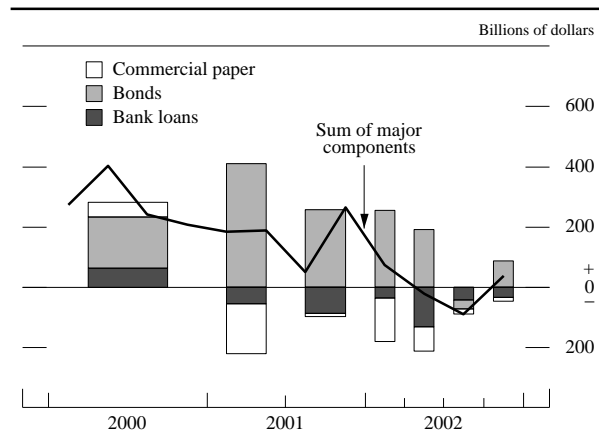
A dearth of expenditures on fixed capital and moribund merger and acquisition activity were the chief culprits behind the sluggish pace of nonfinancial corporate borrowing last year. Also important was the propensity of some firms to draw on liquid assets—which began the year at high levels—rather than to seek external financing. Consequently, debt of the nonfinancial corporate sector expanded only 1½ percent, a rate slower than the already subdued pace in 2001. The composition of business borrowing was dominated last year, as it was in 2001, by longer-term sources of funds. Robust demand for higher-quality corporate debt on the part of investors, combined with the desire of firms to lock in low interest rates, prompted investment-grade corporations to issue a large volume of bonds during the first half of 2002. With funding needs limited, investment-grade issuers continued to use the proceeds to strengthen their balance sheets by refinancing higher-coupon bonds and by paying down short-term obligations such as bank loans and commercial paper. Buoyed by declining yields, gross issuance of below-investment-grade bonds for the most part also held up well during the first half, although this segment of the market was hit hard after revelations of corporate malfeasance, as investors shunned some of the riskiest issues; issuance was especially weak in the beleaguered telecom and energy sectors, which continue to be saddled with overcapacity and excessive leverage. Despite falling share prices, seasoned equity offerings were also well maintained over the first half of the year, in part because of the decision of some firms—especially in the telecom and energy sectors—to reduce leverage. IPOs, by con-

Before-tax profits of nonfinancial corporations as a percent of sector GDP

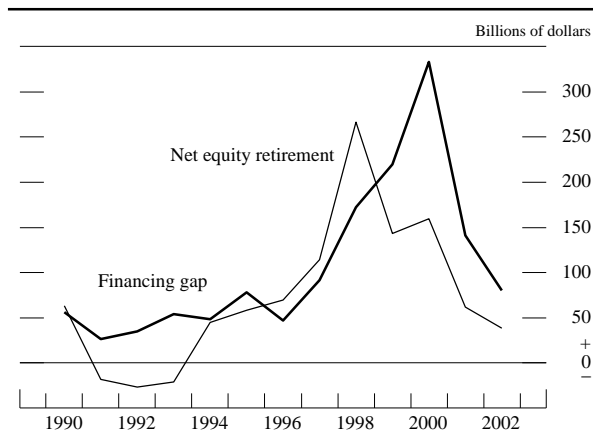


NOTE. The data are quarterly and extend through 2002:Q3. Profits are from domestic operations of nonfinancial corporations, with inventory valuation and capital consumption adjustments.

Major components of net business financing



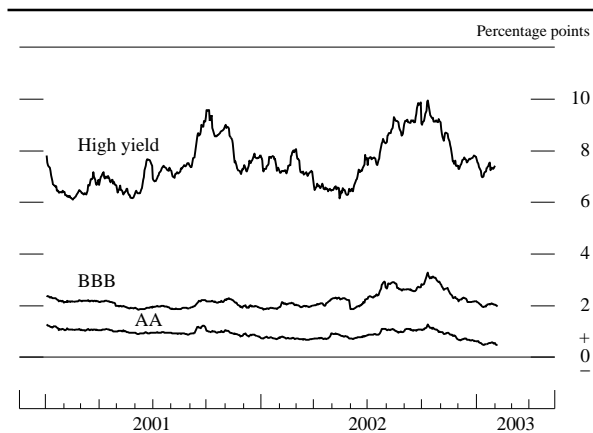
NOTE. Seasonally adjusted annual rate for nonfarm nonfinancial corporate business. The data for the sum of major components are quarterly. The data for 2002:Q4 are estimated.

Financing gap and net equity retirement  
at nonfarm nonfinancial corporations

NOTE. The data are annual; 2002 is based on partially estimated data. The financing gap is the difference between capital expenditures and internally generated funds. Net equity retirement is the difference between equity retired through share repurchases, domestic cash-financed mergers, or foreign takeovers of U.S. firms and equity issued in public or private markets, including funds invested by venture capital partnerships.

trast, were sparse. The evaporation of cash-financed mergers and acquisitions and desire by firms to conserve cash kept equity retirements at their slowest pace since 1994.

Over the summer, investors grew more reluctant to buy corporate bonds because of concerns about the reliability of financial statements, deteriorating credit quality, and historically low recovery rates on defaulted speculative-grade debt. Macroeconomic data suggesting that the economic recovery was losing momentum and widespread company warnings about near-term profits pushed yields on speculative-grade debt sharply higher. Risk spreads on investment-grade bonds also widened appreciably in the third quarter, as yields in that segment

Spreads of corporate bond yields over  
the ten-year Treasury yield

NOTE. The data are daily and extend through February 5, 2003. The spreads compare the yields on the Merrill Lynch AA, BBB, and 175 indexes with the yield on the ten-year off-the-run Treasury note.

of the corporate bond market declined less than those on Treasury securities of comparable maturity. Investors' aversion to risk was also heightened by mounting tensions with Iraq; by early autumn, risk spreads on junk-rated bonds reached their highest levels in more than a decade. Gross bond issuance both by investment-grade and below-investment-grade firms fell off markedly, and the amount of redemptions was large. By the third quarter, net issuance of bonds by nonfinancial corporations had turned negative for the first time since the early 1950s. Trading conditions in the corporate bond market deteriorated during this period, as bid-asked spreads reportedly widened in all sectors. With share prices dropping and stock market volatility increasing, issuance of seasoned equity nearly stalled in the summer and early autumn. IPOs were virtually nonexistent amid widely publicized investigations into the IPO allocation process at large investment banks.

A smattering of more upbeat news about the economy in mid-autumn and the absence of major revelations of corporate wrongdoing sparked a rally in equity prices and rekindled investors' appetite for corporate debt. Over the remainder of the year and during early 2003, risk spreads narrowed considerably on investment-grade corporate bonds—especially for the lowest rated of these issues—and even more on speculative-grade bonds, although they remained high by historical standards. In the meantime, liquidity in the corporate bond market generally improved. A brightening of investor sentiment caused a rebound in gross bond issuance, with firms continuing to use bond proceeds to refinance long-term debt and to pay down short-term debt. Rising stock prices and reduced volatility also allowed seasoned equity issuance to regain some ground in the fourth quarter. The improved tone in corporate debt markets carried over into early 2003. Gross corporate bond issuance continued at a moderate pace, and despite the drop in stock prices in the latter half of January, seasoned equity issuance has been reasonably well maintained. IPO activity and venture capital financing, however, remained depressed.

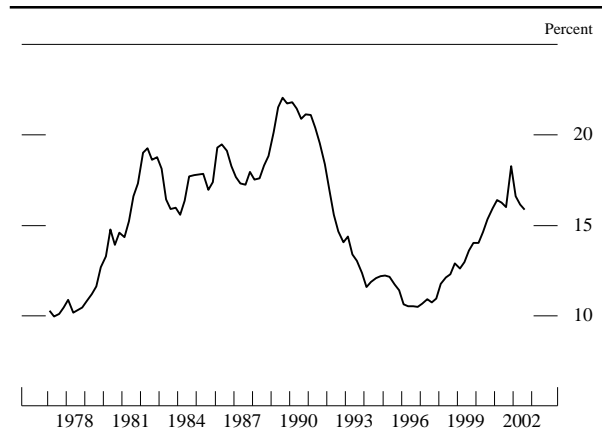
The heavy pace of bond issuance, sagging capital expenditures, and diminished merger and acquisition activity allowed firms to pay down large amounts of both business loans at banks and commercial paper last year. The runoff in business loans that started in early 2001 intensified in the first half of 2002. At the same time, commercial paper issuers that were perceived as having questionable accounting practices encountered significant investor resistance, and most of these issuers discontinued their programs. Bond rating agencies stepped up the pressure on firms to substitute longer-term debt for shorter-term debt and thereby reduce rollover risk. In addition, banks raised the total cost of issuing commercial paper by tightening underwriting standards and boost-

ing fees and spreads on the associated backup lines of credit—especially for lower-rated issuers. In doing so, respondents to the April Senior Loan Officer Opinion Survey on Bank Lending Practices cited heightened concerns about the deterioration of issuers' credit quality and a higher probability of lines being drawn. Many commercial paper issuers either turned to longer-term financing or dropped out of the credit markets altogether, and the volume of nonfinancial commercial paper outstanding shrank about one-fourth during the first six months of the year after having dropped one-third in 2001.

The volatility that gripped equity and bond markets around midyear, however, did not spill over to the commercial paper market. Quality spreads in the commercial paper market were largely unaffected, in part because many of the riskiest issuers had already exited the market, while others had strengthened their cash positions and significantly reduced rollover risk earlier in the year. Indeed, because of difficulties in the corporate bond market, some nonfinancial firms turned temporarily to the commercial paper market to obtain financing, and the volume of outstanding paper rose in July after a lengthy period of declines. Over the remainder of the year, business loans at banks and commercial paper outstanding contracted rapidly, as inventory investment remained negligible, and firms continued to take advantage of relatively low longer-term interest rates by issuing bonds.

A decline in market interest rates and improved profitability helped reduce the ratio of net interest payments to cash flow in the nonfinancial corporate sector last year. Even so, many firms struggled to service their debt, and corporate credit quality deteriorated markedly. The trailing average default rate on corporate bonds, looking back over the preceding twelve months, was already elevated and climbing when WorldCom's \$26 billion default in

Net interest payments of nonfinancial corporations relative to cash flow

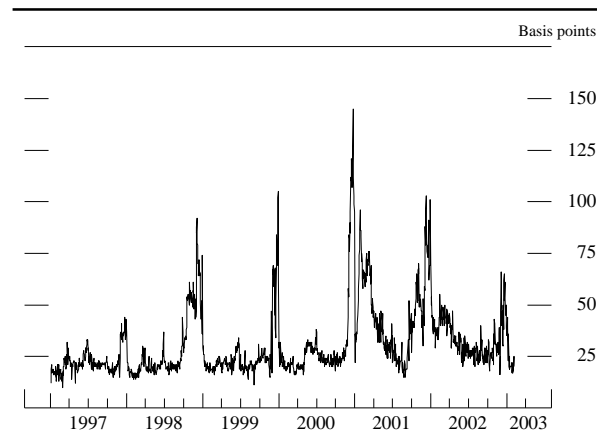


NOTE. The data are quarterly and extend through 2002:Q3.

July propelled the average rate to a record level. The amount of nonfinancial corporate debt downgraded by Moody's Investors Service last year was more than fourteen times the amount upgraded. At less than 25 percent, the average recovery rate in 2002 on all defaulted bonds—as measured by the price of bonds at default—was at the low end of recovery rates over the past decade. Delinquency rates on business loans at commercial banks rose noticeably before stabilizing in the second half of the year, and charge-off rates remained quite high throughout 2002.

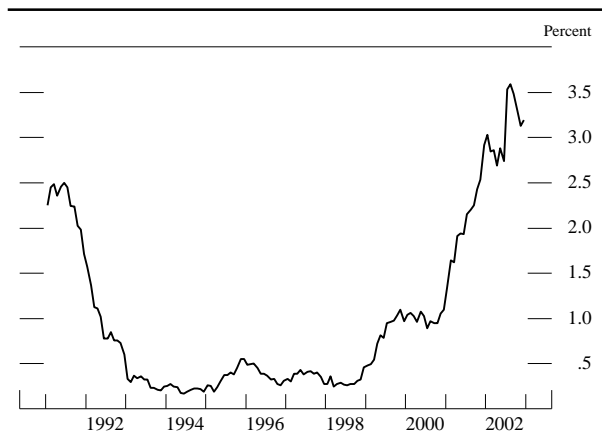
After expanding rapidly in 2001, commercial mortgage debt grew much more slowly during the first quarter of last year, as business spending on nonresidential structures fell. Despite the continued contraction in outlays on nonresidential structures, commercial mortgage debt accelerated over the remainder of the year, apparently because of refinancing to extract a significant por-

Spread of low-tier CP rates over high-tier CP rates



NOTE. The data are daily and extend through February 5, 2003. The series shown is the difference between the rate on A2/P2 nonfinancial commercial paper and the AA rate.

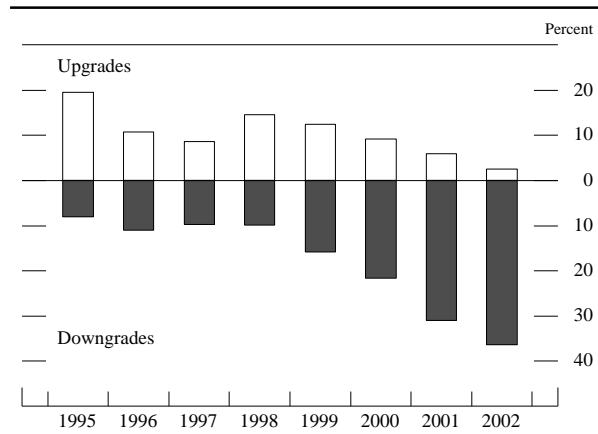
Default rate on outstanding bonds



NOTE. The default rate is monthly and extends through December 2002. The rate for a given month is the face value of bonds that defaulted in the twelve months ending in that month divided by the face value of all bonds outstanding at the end of the calendar quarter immediately preceding the twelve-month period.



Ratings changes of nonfinancial corporations



NOTE. Data are at an annual rate. Debt upgrades (downgrades) are expressed as a percentage of par value of all bonds outstanding.  
SOURCE. Moody's Investors Service.

tion of equity from existing properties. The issuance of commercial-mortgage-backed securities (CMBS), a key source of commercial real estate financing in recent years, was well maintained in 2002. Even as office vacancy rates rose, the quality of commercial real estate credit remained stable last year. Commercial banks firmed standards on commercial real estate loans in 2002, on net, and delinquency rates on commercial real estate loans at banks stayed at historically low levels. Delinquency rates on CMBS leveled off after increasing appreciably in late 2001, and forward-looking indicators also do not suggest elevated concerns about prospective defaults: Yield spreads on CMBS over swap rates remained in the fairly narrow range that has prevailed over the past several years.

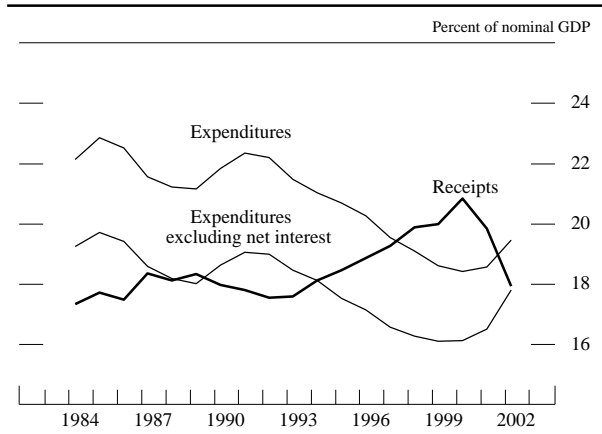
### The Government Sector

#### Federal Government

Despite modest economic growth, the federal budget position deteriorated sharply in 2002. After running a unified budget surplus of \$127 billion in fiscal 2001, the federal government posted a deficit of \$158 billion in fiscal 2002—and that deficit would have been \$23 billion larger if not for the shifting of some corporate tax payments from fiscal 2001 to fiscal 2002. After adjustment for that tax shifting, receipts declined 9 percent in fiscal 2002: A \$50 billion drop in corporate payments stemmed largely from tax provisions enacted in the 2002 stimulus bill (especially the partial-expensing provision on investment), and a decline in individual tax payments of \$136 billion was largely attributable to a drop in capital gains realizations and to lower tax rates that were enacted in the 2001 tax bill.

Meanwhile, federal outlays increased nearly 8 percent in fiscal 2002 and 11 percent excluding a decline in net

Federal receipts and expenditures

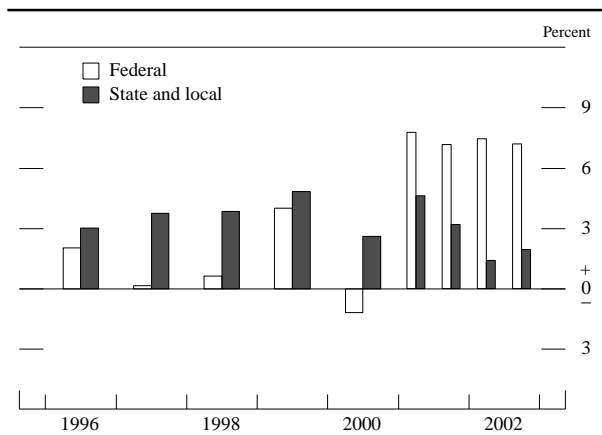


NOTE. The budget data are from the unified budget and are for fiscal years (October through September); GDP is for Q3 to Q3.

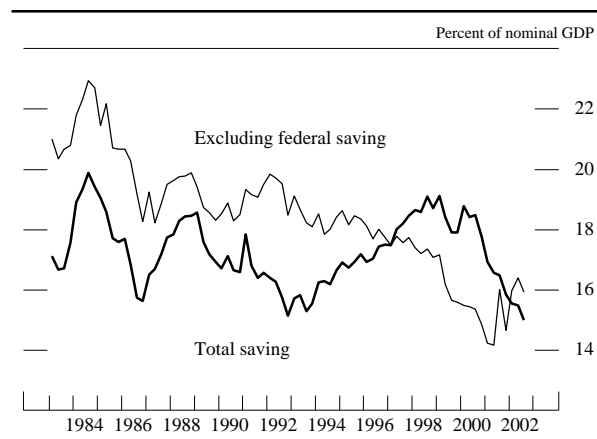
interest expenses. Spending increased notably in many categories, including defense, homeland security, Medicaid, and income security (which includes the temporary extended unemployment compensation program). Federal government consumption and investment—the part of spending that is counted in GDP—rose more than 7 percent in real terms in 2002. (Government spending on items such as interest payments and transfers are not counted in GDP because they do not constitute a direct purchase of final production.)

The turn to deficit in the unified budget means that the federal government, which had been contributing to national saving since 1997, began to reduce national saving last year. The reversal more than offset an increase in saving by households and businesses, and gross national saving declined to 15 percent of GDP by the third quarter of last year—the lowest national saving rate since the 1940s.

Change in real government expenditures on consumption and investment



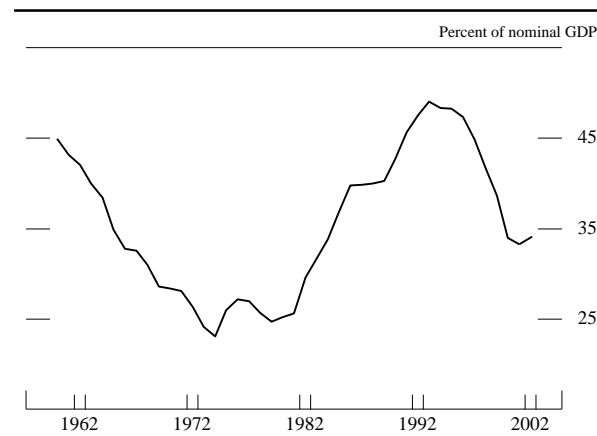
National saving



NOTE. The data are quarterly and extend through 2002:Q3.

After it reentered the credit markets as a significant borrower of net new funds in the second half of 2001, the Treasury continued to tap markets in volume last year. Federal net borrowing was especially brisk over the first half of the year. With federal debt rapidly approaching its statutory borrowing limit, the Secretary of the Treasury declared a debt ceiling emergency on May 16 and identified about \$80 billion worth of accounting measures that could be used to create financing room within the existing \$5.95 trillion limit. The Secretary's announcement and subsequent employment of one of these devices—in which Treasury securities held in government trust funds were temporarily replaced by Treasury IOUs not subject to the debt ceiling—had little effect on Treasury yields, as market participants were apparently confident that the ceiling would be raised in time to avoid

Federal government debt held by the public



NOTE. Through 2001, the data for debt are year-end figures and the corresponding value for GDP is for Q4 at an annual rate; the final observation is for 2002:Q3. Excludes securities held as investments of federal government accounts.

default. And indeed, the Congress approved legislation raising the statutory borrowing limit to \$6.4 trillion on June 27. With its credit needs remaining substantial, the Treasury continued to borrow heavily over the second half of 2002. The increase in the Treasury's net borrowing last year caused the ratio of publicly held debt to nominal GDP to rise for the first time since 1993.

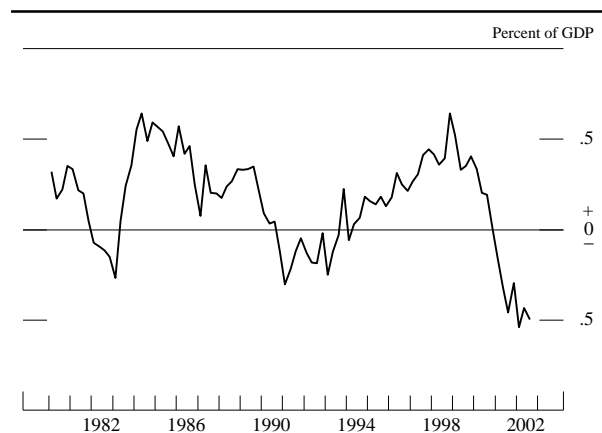
State and Local Governments

State and local governments have continued to struggle in response to sluggish growth of receipts. In the current fiscal year (which ends June 30 for most states), most state governments are reported to be facing significant shortfalls. Although a variety of strategies may be available for the purpose of technically complying with balanced-budget requirements, including tapping nearly \$20 billion in combined rainy-day and general fund balances and turning to the capital markets, many states will be forced to boost revenues and hold the line on spending.

Real expenditures for consumption and gross investment by state and local governments rose less than 2 percent in 2002—the smallest increase in ten years. The slowdown in spending growth was widespread across expenditure categories and included notably smaller increases in outlays for construction. Employment in the state and local sector continued to rise in 2002, but at a slower rate than in recent years.

Debt of the state and local government sector expanded last year at the fastest pace since 1987. Governments used the proceeds to finance capital spending and to refund existing debt in advance. Net issuance of short-term municipal bonds was also well maintained, as California

State and local government current surplus or deficit



NOTE. The data, which are quarterly, are on a national income and product account basis and extend through 2002:Q3. The current surplus or deficit excludes social insurance funds.

and some other states facing fiscal difficulties turned to shorter-term borrowing while fashioning more permanent solutions to their budget problems. Worsening budget situations contributed to some deterioration in municipal credit quality last year. Credit-rating downgrades outpaced upgrades by a significant margin, and the yield spread of BBB-rated over insured AAA-rated municipal bonds rose significantly over the second half of 2002.

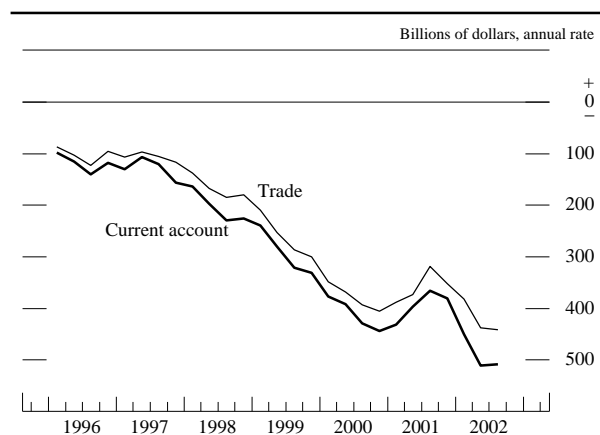
### The External Sector

The U.S. current account deficit widened again in 2002 after a brief respite during the cyclical slowdown in 2001. Two-thirds of the expansion of the deficit last year was attributable to a decline in the balance on goods and services, although net investment income also fell sharply as receipts from abroad declined more than payments to foreign investors in the United States. The broad exchange value of the dollar peaked around February 2002 after appreciating about 13 percent in real terms from January 2000; in early February 2003 it was down about 5 percent from the February 2002 level.

### Trade and the Current Account

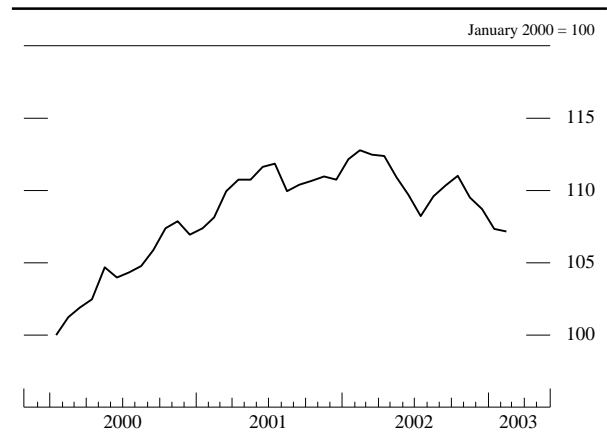
Both exports and imports rebounded in 2002 as the cyclical downturn of the previous year was reversed and spending on travel recovered from the post-September 11 slump. As is often the case, the amplitude of the recent cycle in trade has been greater than that of real GDP. In 2001, stagnant real GDP in the United States and abroad was coupled with declines of 11½ percent in real exports and 8 percent in real imports. Last year, moderate growth of both foreign and domestic real GDP was exceeded by gains of 5 percent and 9 percent, respectively, in our real exports and imports. The faster

U.S. trade and current account balances



NOTE. The data are quarterly and extend through 2002:Q3.

U.S. dollar real exchange rate, broad index

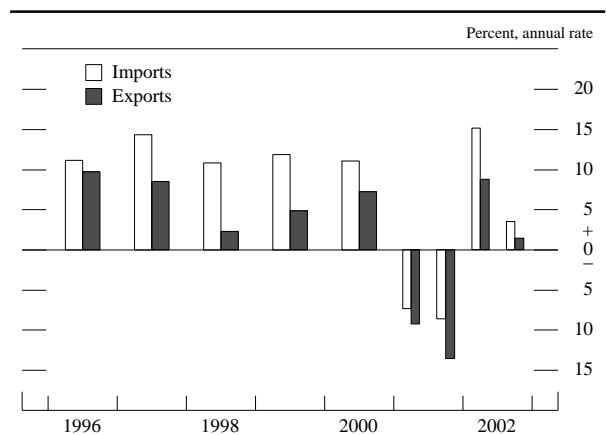


NOTE. The data are monthly. The last observation is the average of trading days through February 5, 2003. Exchange rates are adjusted for inflation with the consumer price index and are in foreign currency units per dollar. The broad index is a weighted average of the foreign exchange values of the U.S. dollar against the currencies of a large group of major U.S. trading partners. The index weights, which change over time, are derived from U.S. export shares and from U.S. and foreign import shares.

growth of imports relative to exports over the past two years was consistent with the historical pattern in which the responsiveness of imports to income is greater in the United States than in the rest of the world. Although the dollar depreciated on balance last year, the lagged effects of its prior appreciation over the two previous years contributed to the faster growth in imports relative to exports in 2002.

Real exports of goods posted a strong gain in the second quarter of 2002 after six consecutive quarters of decline. However, as output growth slowed abroad, exports decelerated in the third quarter and then fell in the fourth quarter. On balance, exports of goods rose about 2 percent over the course of the year, reversing only a small portion of the previous year's decline. Not surprisingly, the increase in goods exports in 2002 was concen-

Change in real imports and exports of goods and services



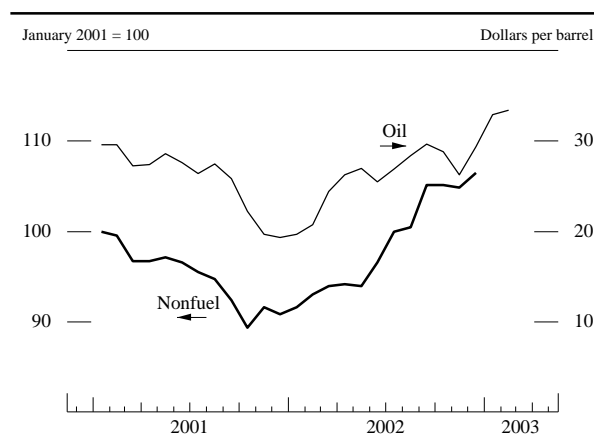
trated in the destinations where GDP growth was strongest—Canada, Mexico, and several developing Asian economies. A gain of 12 percent in real exports of services in 2002 more than reversed the previous year's decline and reflected both a pickup in tourism and an increase in other private services. Export prices turned up in the second quarter after a year of decline and continued to rise at a moderate pace in the second half.

The very rapid growth of real imports of goods in the first half of last year was a reaction to the revival of U.S. activity, and they gained about 9 percent over the year. The particularly large gains in imports of consumer goods and automotive products reflected the buoyancy of U.S. consumption expenditures. Imports of most major categories of capital goods also increased on balance over the year. However, as with exports, import growth was considerably stronger in the first half of the year than in the second. This pattern likely reflected the deceleration in U.S. GDP, along with the effects of some depreciation of the dollar. In addition, there may have been some shifting of import demand from later in the year to the earlier months as it began to appear more likely that labor contract negotiations at West Coast ports would not go smoothly.<sup>1</sup> Imports of services more than reversed their 2001 decline over the course of the year, and gains were recorded for both travel and other private services. Prices of non-oil imports turned up in the second quarter after declining over the preceding four quarters, as a result of the weaker exchange rate and a turnaround in prices of internationally traded commodities.

The spot price of West Texas intermediate crude oil climbed above \$35 per barrel in early 2003, its highest level since the beginning of 2000. Oil prices had fallen to around \$20 per barrel during 2001 amid general economic weakness, but they began rising in February and March of last year in response to both improving global economic activity as well as a production-limiting agreement between OPEC and several major non-OPEC producers. Even though production in a number of OPEC and non-OPEC countries in fact exceeded the agreed limits last year, heightened tensions in the Middle East along with severe political turmoil in Venezuela continued to put upward pressure on prices. The pressure intensified late in the year as a strike in Venezuela that began on December 2 virtually shut down that country's oil industry, and Venezuelan oil production was still well below

1. The dispute between the Pacific Maritime Association and the International Longshore and Warehouse Union eventually led to an eleven-day port closure in late September and early October that ended when President Bush invoked the Taft-Hartley Act. Although the monthly pattern of trade was influenced by the closure, the overall level of imports for the year does not appear to have been much affected.

Prices of oil and of nonfuel commodities



NOTE. The data are monthly; the last observation for oil is the average of trading days through February 5, 2003; the last observation for nonfuel commodities is December 2002. The oil price is the spot price of West Texas intermediate crude oil. The price of nonfuel commodities is a weighted average of thirty-nine primary-commodity prices from the International Monetary Fund.

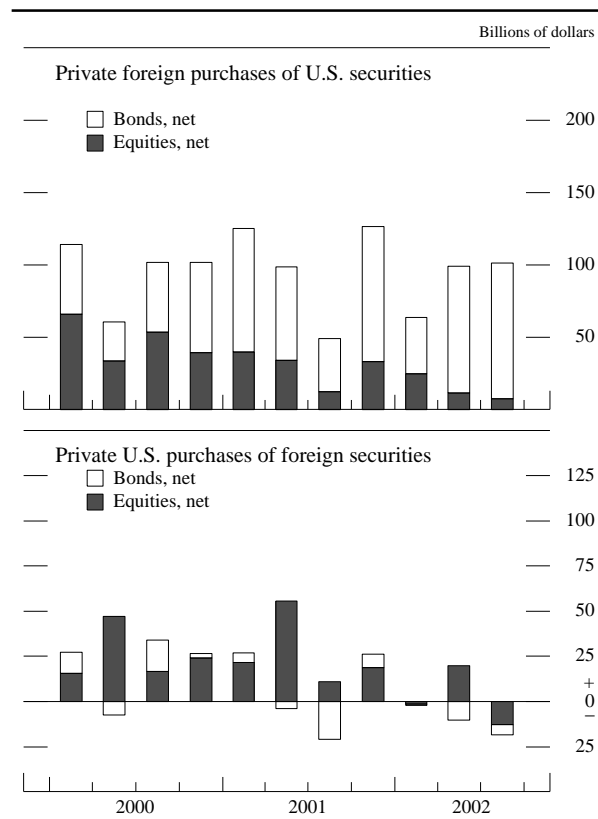
pre-strike levels in early 2003. Concern over a possible war with Iraq, along with a very low level of crude oil inventories in the United States, has helped to keep spot prices high. Also in response to the heightened tensions, the price of gold shot up about 30 percent over the past year.

### The Financial Account

The increase in the current account deficit in 2002 was about equal on balance to the stepped-up foreign official purchases of U.S. assets, as changes in the components of private capital flows were offsetting. Private foreign purchases of U.S. securities were about \$360 billion at an annual rate through November, a volume similar to last year's total. However, there was some shift in the composition of flows away from equities and toward Treasury securities. This shift may have reflected the damping of equity demand caused by slower economic growth and continued concern about corporate governance and accounting. Over the same period, purchases by private U.S. investors of foreign securities declined nearly \$100 billion. Accordingly, the net balance of private securities trading recorded a sharp increase in net inflows.

In contrast, net foreign direct investment inflows fell about \$70 billion between 2001 and 2002. Foreign investment in the United States and investment abroad by U.S. residents both declined, but the decline in flows into the United States was considerably larger, as merger activity slowed and corporate profits showed little vigor. U.S. direct investment abroad held up fairly well in 2002, a result largely reflecting retained earnings.

## U.S. international securities transactions



SOURCE: Department of Commerce and the Federal Reserve Board.

*The Labor Market*

## Employment and Unemployment

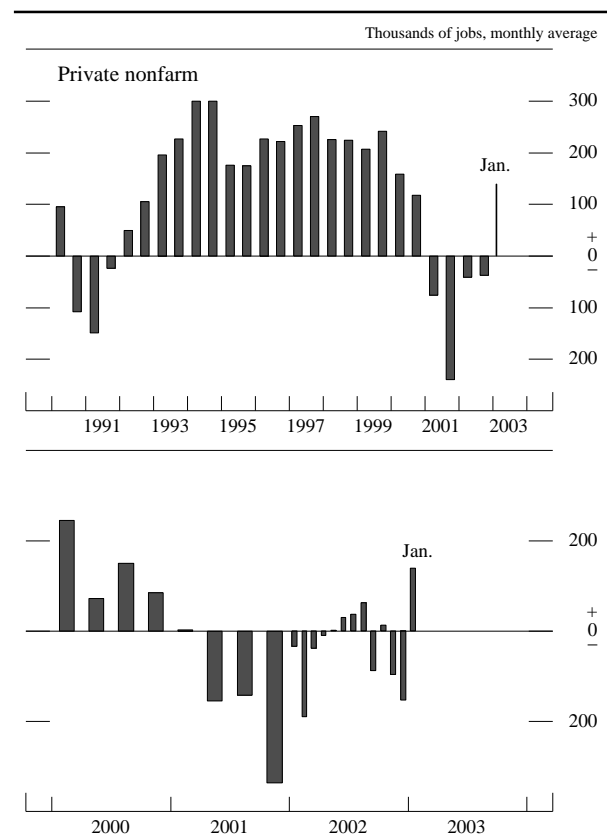
Labor markets appeared to stabilize last spring after the sharp deterioration of 2001 and early 2002. Employment on private payrolls, which had declined an average of 160,000 per month in 2001, leveled off in the spring and moved slightly higher over the summer. But labor demand weakened again as the economy softened later in the summer, and private employment declined about 80,000 per month on average in the last four months of the year. Private payrolls rebounded nearly 150,000 in January, though the magnitude of both the especially sharp decline in December and the rebound in January likely was exaggerated by difficulties in adjusting for the normal seasonal movements in employment during these months.

The manufacturing sector continued to be the weakest segment of the labor market; even during the spring and early summer, when the overall labor market seemed to be improving, factory payrolls contracted on average. Declines in factory employment were more pronounced—at about 50,000 per month—toward the end of the year. Employment at help-supply firms and in wholesale

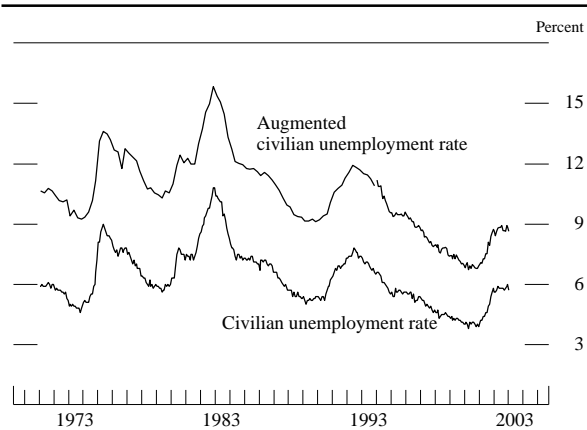
trade—two sectors in which activity closely tracks that of manufacturing proper—rose over the summer but also turned down again later in the year. And employment in retail trade, though quite erratic, leveled off over the summer before declining further in the fall. However, employment in services other than help supply grew reasonably steadily throughout the year and rose nearly 50,000 per month after March; health services and education services contributed more than half of those job gains. The finance and real estate sectors also added jobs last year, probably because of the surge in mortgage refinancings and high levels of activity in housing markets. Last year's job losses in the private sector were partially offset by an increase in government employment that averaged about 20,000 per month; the increase resulted mostly from hiring by states and municipalities, but it also reflected hiring in the fall by the Transportation Security Administration.

Overall employment moved lower, on net, and the unemployment rate increased a little less than  $\frac{1}{2}$  percentage point over the year, to 6 percent, before dropping back to 5.7 percent in January 2003. The unemployment rate probably has been boosted slightly by the federal temporary extended unemployment compensation program. By extending benefits for an additional three months, the pro-

## Net change in payroll employment



Measures of labor utilization



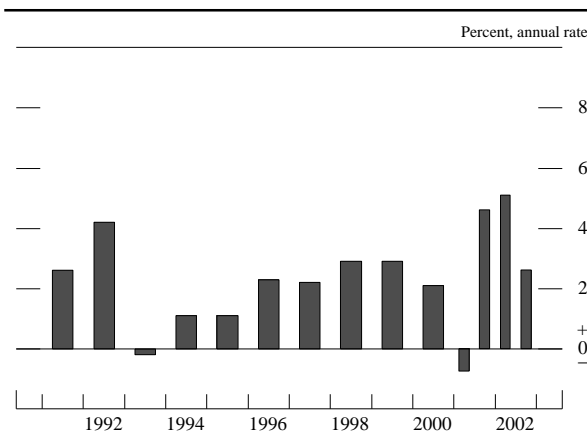
NOTE. The data extend through January 2003. The civilian rate is the number of civilian unemployed divided by the civilian labor force. The augmented rate adds to the numerator and the denominator of the civilian rate the number of those who are not in the labor force but want a job. The small break in the augmented rate in January 1994 arises from the introduction of a redesigned survey. For the civilian rate, the data are monthly; for the augmented rate, the data are quarterly through December 1993 and monthly thereafter.

gram allows unemployed individuals whose regular benefits have expired to be more selective in accepting job offers and provides them with an incentive not to withdraw from the labor force. In addition, as would be expected in a still-weak labor market, the labor force participation rate moved lower last year.

Productivity and Labor Costs

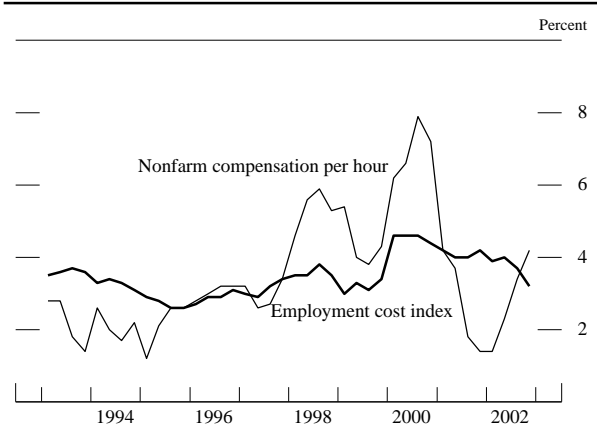
Labor productivity rose impressively in 2002. Output per hour in the nonfarm business sector increased an estimated 3¾ percent from the fourth quarter of 2001 to the fourth quarter of 2002. Labor productivity typically suf-

Change in output per hour



NOTE. Nonfarm business sector.

Measures of change in hourly compensation



NOTE. The data extend through 2002:Q4. For nonfarm compensation, change is over four quarters; for the employment cost index (ECI), change is over the twelve months ending in the last month of each quarter. Nonfarm compensation is for the nonfarm business sector; the ECI is for private industry excluding farm and household workers.

fers in an economic downturn as businesses reduce hours worked by proportionally less than the decline in output; conversely, productivity typically rebounds early in an expansion as labor is brought back toward fuller utilization. During the most recent downturn, however, productivity held up comparatively well, a performance that makes last year's surge all the more impressive. Indeed, productivity rose at an average annual rate of nearly 3 percent over the past two years, faster than the average pace of increase during the late 1990s.

Very likely, the rapid pace of last year's productivity growth was due in part to the special circumstances that developed after the September 11 attacks. Businesses cut labor substantially in late 2001 and early 2002 amid widespread fear of a sharp decline in demand; when demand held up better than expected, businesses proved able to operate satisfactorily with their existing workforces. Moreover, the fact that this step-up in productivity was not reversed later in the year suggests that at least a portion of it is sustainable. The recent rapid growth in productivity may derive in part from ongoing improvements in the use of the vast amount of capital installed in earlier years, and it may also stem from organizational innovations induced by the weak profit environment.

Indicators of hourly compensation sent mixed signals last year. The rise in the employment cost index (ECI) for hourly compensation in private nonfarm businesses, 3¼ percent, was 1 percentage point lower than the increase in 2001. Compensation increases likely were damped last year by the soft labor market and expectations of lower consumer price inflation. The wages and salaries component and the benefits component of the ECI both posted smaller increases last year. The deceleration was less pronounced for the benefits component,

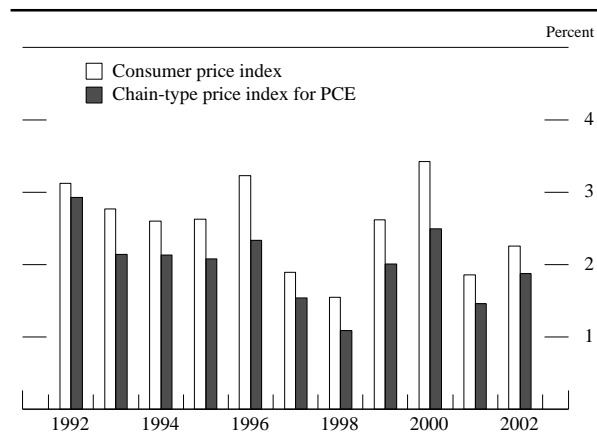
however, which was boosted by further large increases in employers' health insurance costs. According to the ECI, health insurance costs, which constitute about 6 percent of overall compensation, rose 10 percent last year after having risen about 9 percent in each of the preceding two years.

An alternative measure of compensation costs is compensation per hour in the nonfarm business sector, which is derived from information in the national income and product accounts. According to this measure, hourly compensation rose 4 $\frac{1}{4}$  percent last year—a little more than the increase in the ECI and up from a much smaller increase in 2001. One important difference between these two measures of compensation is that the ECI omits stock options, while nonfarm compensation per hour captures the value of these options upon exercise. The very small increase in the latter measure in 2001 likely reflects, in part, a drop in option exercises in that year, and the larger increase in 2002 may point to a firming, or at least to a smaller rate of decline, of these exercises.

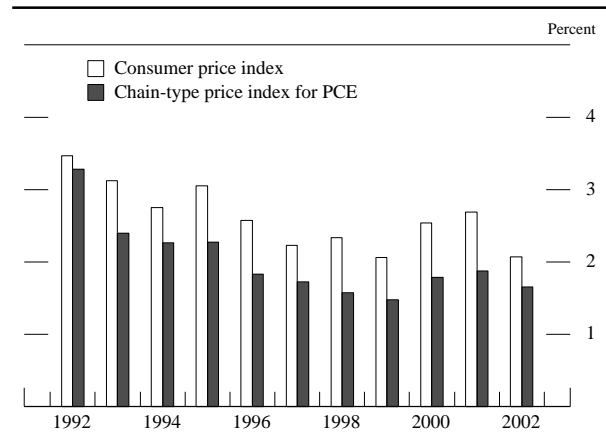
### Prices

The chain-type price index for personal consumption expenditures (PCE) rose about 2 percent last year, compared with an increase of 1 $\frac{1}{2}$  percent in 2001. This step-up in consumer price inflation resulted from a jump in energy prices. Outside of the energy sector, consumer price inflation was pushed lower last year by continued slack in labor and product markets as well as by expectations of future inflation that appeared to be lower in 2002 than in most of 2001. The increase in PCE prices excluding food and energy, which was just 1 $\frac{3}{4}$  percent, was about  $\frac{1}{4}$  percentage point less than in 2001. The price index for GDP was less affected by last year's rise in energy prices than was the PCE measure; much of the energy price increase was attributable to higher prices of imported oil, which

Change in consumer prices



Change in consumer prices excluding food and energy



are not included in GDP because they are not part of domestic production. On net, GDP prices rose only 1 $\frac{1}{4}$  percent last year, a deceleration of  $\frac{3}{4}$  percentage point that reflected not just the deceleration in core consumer prices but also considerably smaller increases for prices of construction.

The upturn in consumer energy prices in 2002 was driven by a jump in crude oil prices. Gasoline prices increased some 25 percent from December 2001 to December 2002; prices of fuel oil increased considerably as well. By contrast, consumer prices of natural gas posted only a modest rise after declining sharply in 2001, and electricity prices moved lower. More recently, the rise in crude oil prices since mid-December, together with cold weather, has increased the demand for natural gas and has led to higher spot gas prices; the higher spot prices for both oil and gas are likely to be boosting consumer energy prices early this year.

The PCE price index for food and beverages increased only 1 $\frac{1}{2}$  percent last year; the increase followed a 3 percent rise in 2001 that reflected supply-related price increases for many livestock products including beef, poultry, and dairy products. But livestock supplies had

Alternative measures of price change

Price measure	2001	2002
<i>Chain-type</i>		
Gross domestic product .....	2.0	1.3
Gross domestic purchases .....	1.3	1.6
Personal consumption expenditures .....	1.5	1.9
Excluding food and energy .....	1.9	1.7
Chained CPI .....	1.2	1.9
Excluding food and energy .....	1.8	1.6
<i>Fixed-weight</i>		
Consumer price index .....	1.9	2.3
Excluding food and energy .....	2.7	2.1

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.

recovered by early last year, and a drought-induced selloff of cattle herds last summer pushed prices still lower.

The prices of goods other than food and energy items decelerated sharply last year. Prices for apparel, new and used motor vehicles, and a wide range of other durable goods all declined noticeably and, on average, at a faster pace than in 2001. Price increases for services were much larger than for goods and slowed less from the previous year. Both tenants' rent and the imputed rent of owner-occupied housing—categories that account for a sizable share of services—rose significantly less last year than they did in 2001. But many other services prices posted increases in 2002 that were about the same as in 2001. Information on medical prices was mixed. According to the CPI, the price of medical services continued to accelerate, rising 5½ percent last year. But the increase in the PCE measure of medical services prices was less than 3 percent, a smaller increase than in 2001. One reason for this difference is that the prices of services paid for by Medicare and Medicaid are included in the PCE index but not in the CPI (because services provided by Medicare and Medicaid do not represent out-of-pocket costs to consumers and so are outside of the CPI's scope), and Medicare reimbursement rates for physicians were reduced last year.

Despite the acceleration in medical prices in the CPI but not in the PCE price index, the CPI excluding food and energy decelerated notably more than did the core PCE price index between 2001 and 2002. The two price measures differ in a number of respects, but much of last year's greater deceleration in the CPI can be traced to the fact that the CPI suffers from a form of "substitution bias" that is not present in the PCE index. The CPI, being a fixed-weight price index, overstates increases in the cost of living because it does not adequately take into account the fact that consumers tend to substitute away from goods that are rising in relative price; by contrast, the PCE price index does a better job of taking this substitution into account. Last year, the Bureau of Labor Statistics began to publish a new index called the chained CPI; like the PCE price index, the chained CPI does a more complete job of taking consumer substitution into account, but it is otherwise identical to the official CPI. In 2001, an unusually large gap between increases in the official CPI and the chained CPI arose, pointing to very large substitution bias in the official CPI in that year. This gap narrowed in 2002, indicating that substitution bias declined between the two years. (Final estimates of the chained CPI are not yet available; the currently available data for both 2001 and 2002 are preliminary and subject to revision.)

Survey measures of expected inflation generally ran a little lower in 2002 than in 2001. According to the Michigan SRC, median one-year inflation expectations plum-

meted after the September 11 attacks, but by early 2002, expectations returned to the 2¾ percent range that had prevailed during the previous summer. These expectations gradually moved lower over the course of last year and now stand around 2½ percent. Meanwhile, the Michigan SRC's measure of five- to ten-year inflation expectations remained steady at about 2¾ percent during 2002, a rate a little lower than the 3 percent inflation expectations that had prevailed through most of 2001.

### *U.S. Financial Markets*

Developments in financial markets last year were shaped importantly by sharp declines, on net, in equity prices and most long-term interest rates and by periods of heightened market volatility. In contrast to 2001, when the Federal Reserve eased the stance of monetary policy eleven times, last year saw one reduction in the intended federal funds rate—in early November—and interest rates on short-term Treasury securities had moved little until then. Longer-term interest rates, by contrast, were more volatile. Investors' optimism about future economic prospects pressured longer-term Treasury bond yields higher early in 2002. But as the year progressed, that optimism faded when the economy failed to gather much momentum, and longer-term Treasury yields ended the year appreciably lower. Softer-than-expected readings of the economic expansion, a marked deterioration in corporate credit quality, concerns about corporate governance, and heightened geopolitical tensions made investors especially wary about risk. Lower-rated firms found credit substantially more expensive, as risk spreads on speculative-grade debt soared for most of the year before narrowing somewhat over the last few months. Even for higher-quality firms, risk spreads widened temporarily during the tumultuous conditions that prevailed in financial markets over the summer. In addition, commercial banks tightened standards and terms for business borrowers, on net, in 2002, and risk spreads on business loans remained in an elevated range throughout the year. Increased caution on the part of investors was particularly acute in the commercial paper market, where the riskiest issuers discontinued their programs.

Federal borrowing surged last year, while private borrowing was held down by the significantly reduced credit needs of business borrowers. Declines in longer-term interest rates during the first half of the year created incentives for both businesses and households to lock in lower debt-service obligations by heavily tapping corporate bond and home mortgage markets, respectively. While mortgage borrowing remained strong, businesses sharply curtailed their issuance of longer-term debt during the second half of 2002 amid the nervousness then prevailing in the financial markets.

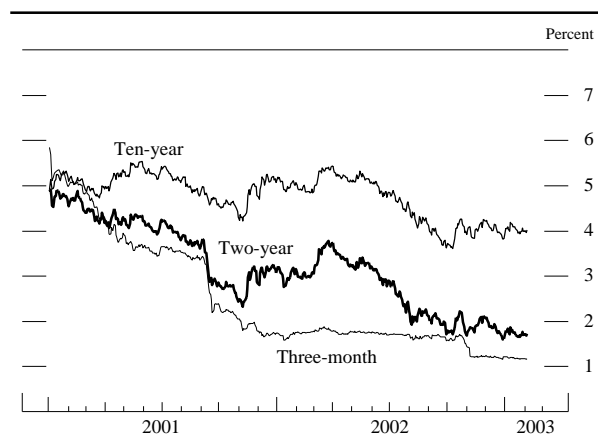


## Interest Rates

Reflecting an unchanged stance of monetary policy over most of last year, short-term market interest rates moved little until early November, when the FOMC lowered the target federal funds rate  $\frac{1}{2}$  percentage point, and other short-term interest rates followed suit. Yields on intermediate- and long-term Treasury securities, by contrast, declined as much as  $1\frac{1}{2}$  percentage points, on net, in 2002. Longer-term interest rates began last year under upward pressure, as signs that the economy had bottomed out started to nudge rates higher in the final weeks of 2001. Positive economic news pushed interest rates up appreciably further during the first quarter of 2002. The increase in longer-term interest rates was consistent with the sharp upward tilt of money market futures rates, which suggested that market participants expected that the FOMC would almost double the intended level of the funds rate by year's end. However, as readings on the strength of the economic expansion came in on the soft side, investors substantially trimmed their expectations for policy tightening, and yields on longer-term Treasury securities turned down in the spring.

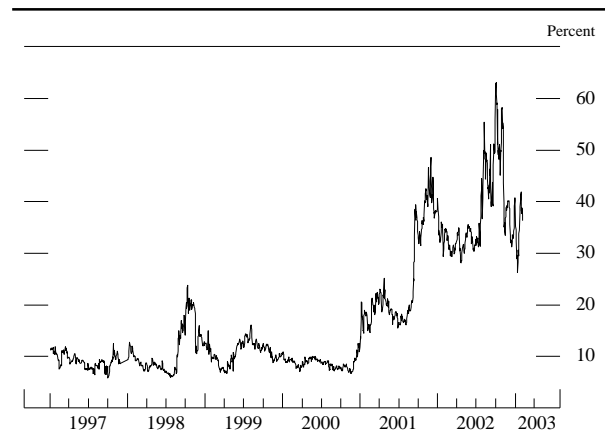
The slide in longer-term Treasury yields intensified over the summer amid weaker-than-expected economic data, heightened geopolitical tensions, fresh revelations of corporate malfeasance, and disappointing news about near-term corporate profits. In concert, these developments prompted investors to mark down their expectations for economic growth and, consequently, their anticipated path for monetary policy. A widespread retrenchment in risk-taking sent yields on speculative-grade corporate bonds sharply higher and kept those on the lower rungs of investment grade from declining, even as longer-term nominal Treasury yields fell to very low levels by the end of July.

## Interest rates on selected Treasury securities



NOTE. The data are daily and extend through February 5, 2003.

## Implied volatility of short-term interest rates

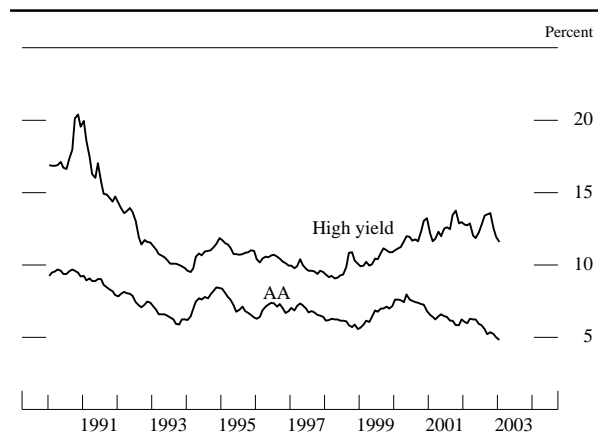


NOTE. The data are daily and extend through February 5, 2003. The series shown is the implied volatility of the three-month eurodollar rate over the coming four months, as calculated from option prices.

The uneventful passing of the Securities and Exchange Commission's August 14 deadline for officers of large companies to certify corporate financial statements somewhat assuaged investors' anxieties about corporate governance problems. But subsequent news suggesting that the economy was losing momentum and a flare-up in tensions with Iraq further boosted demand for Treasury securities. The FOMC's decision at the August meeting—to leave the intended federal funds rate unchanged but to judge the balance of risks to the outlook as weighted toward economic weakness—pulled the expected path of the funds rate lower, and longer-term Treasury yields sank to forty-year lows in early autumn. A high degree of investor uncertainty about the future path of monetary policy was evidenced by implied volatilities of short-term interest rates derived from option prices, which soared to record levels in early autumn. The size of the FOMC's November cut in the target federal funds rate and the shift to balance in its assessment of risks surprised market participants, but the policy easing appeared to lead investors to raise the odds that the economy would pick up from its sluggish pace. Generally positive economic news and rising equity prices over the remainder of the year also bolstered confidence and prompted market participants to mark up the expected path for monetary policy and push up longer-term Treasury yields.

Yields on higher-quality investment-grade corporate bonds generally tracked those on Treasuries of comparable maturity last year, although risk spreads on these instruments widened moderately over the summer and early autumn before narrowing over the remainder of the year. Interest rates on below-investment-grade corporate debt, by contrast, increased for much of last year, as spreads over Treasuries ballooned in response to mounting concerns about corporate credit quality, historically

Corporate bond yields



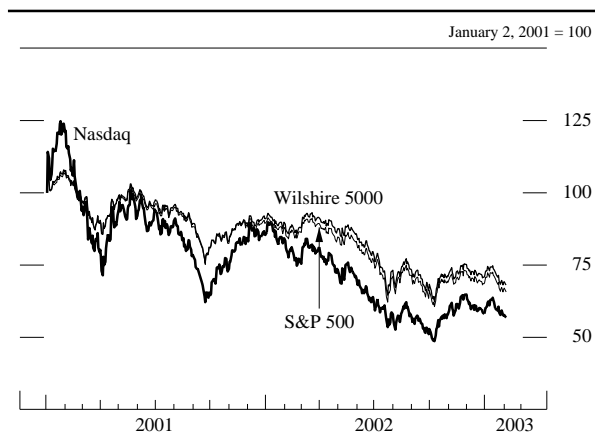
NOTE. The data are monthly averages and extend through January 2003. The AA rate is calculated from bonds in the Merrill Lynch AA index with seven to ten years remaining maturity. The high-yield rate is the yield on the Merrill Lynch 175 high-yield index.

low recovery rates on defaulted bonds, and revelations of improper corporate governance; credit risk spreads widened in all speculative sectors but especially in telecom and energy. By the summer, investors' retreat from risk-taking had widened bid-asked spreads in the corporate bond market enough to impair trading. Risk spreads on speculative-grade bonds narrowed considerably over the year's final quarter and in early 2003, though they remain elevated by historical standards; risk spreads for the weaker speculative-grade credits remain exceptionally wide, as investors evidently anticipate a continued high level of defaults and low recovery rates.

Equity Markets

Equity prices were buffeted last year by considerable fluctuations in investors' assessments of the outlook for the

Major stock price indexes

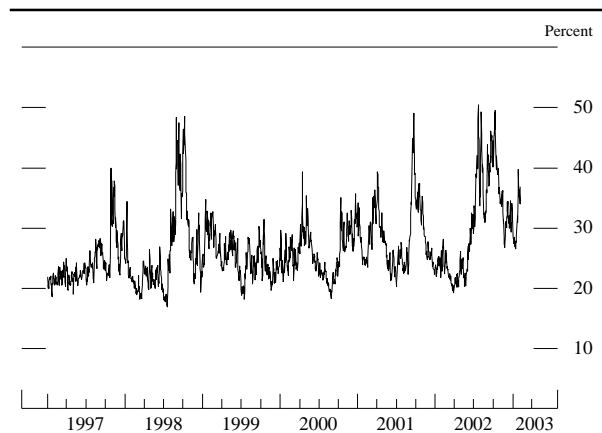


NOTE. The data are daily and extend through February 5, 2003.

economy and corporate earnings and by doubts about the quality and transparency of corporate balance sheets. Net declines in stock prices in 2002 exceeded those posted during either of the preceding two years. Worries about the pervasiveness of questionable corporate governance and a deterioration in the earnings outlook—especially in the technology sector—depressed equity prices in early 2002. The positive tenor of economic data, however, managed to outweigh those concerns, and stock prices staged a rally halfway through the first quarter, with the gains tilted toward “old economy” firms. But the rebound was short lived. Share prices started to tumble in early spring across all sectors as weaker-than-expected economic data eroded investors' confidence in the strength of the economic expansion. These developments were reinforced by first-quarter corporate earnings reports that, though mostly matching or exceeding investors' expectations, painted a bleak picture of prospective sales and profits.

Over the spring and summer, accounting scandals, widespread warnings about near-term corporate profitability, and heightened geopolitical tensions intensified the slide in stock prices. Particularly large declines in share prices were posted for technology firms, whose prospects for sales and earnings were especially gloomy. Equity prices were boosted briefly by the uneventful passing of the August 14 deadline to certify financial statements, but they quickly reversed course on continued concerns about the pace of economic growth and corporate earnings and the escalating possibility of military action against Iraq. By early October, equity indexes sank to their lowest levels since the spring of 1997, and implied stock price volatility on the S&P 100 surged to its highest reading since the stock market crash of 1987.

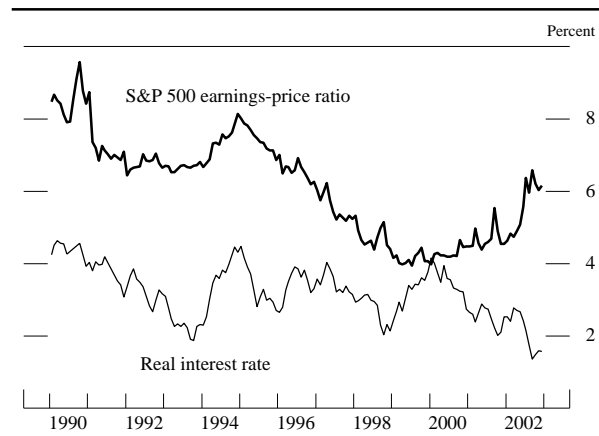
Implied S&P 100 volatility



NOTE. The data are daily and extend through February 5, 2003. The series shown is the implied volatility of the S&P 100 stock price index as calculated from the prices of options that expire over the next several months.

SOURCE. Chicago Board Options Exchange.

S&amp;P 500 forward earnings-price ratio and the real interest rate



NOTE. The data are monthly and extend through December 2002. The earnings-price ratio is based on I/B/E/S consensus estimates of earnings over the coming year. The real rate is estimated as the difference between the ten-year Treasury rate and the five-year to ten-year expected inflation rate from the FRB Philadelphia survey.

The drop in stock prices widened the gap between the expected year-ahead earnings–price ratio for the S&P 500 and the real ten-year Treasury yield—one simple measure of the equity premium—to levels not seen since the mid-1990s.

Share prices turned around in late October, as the third-quarter corporate earnings reports were not as weak as investors had originally feared. Equity prices were also given a boost in early November by the larger-than-expected monetary policy easing, and the rally was sustained over the remainder of the year by the generally encouraging tone of economic data. Greater confidence among investors in the economic outlook also helped bring down the implied volatility on the S&P 100 significantly by year-end, although it remains at an elevated level by historical standards. Despite the fourth-quarter rebound, broad equity indexes were down, on net, about 20 percent in 2002, while the tech-heavy Nasdaq lost more than 30 percent.

The decline in equity prices during the first three quarters of 2002 is estimated to have erased more than \$3½ trillion in household wealth, a loss of nearly 9 percent of total household net worth, although the fourth-quarter rise in stock prices restored about \$600 billion. Still, the level of household net worth at the end of last year was more than 40 percent higher than it was at the start of the bull market in 1995. Equity prices maintained their upward momentum during the first half of January 2003 but then fell sharply amid the looming prospects of military action against Iraq and a still-gloomy outlook for corporate earnings. Broad stock price indexes have lost almost 5 percent this year; however, solid fourth-quarter earnings from many prominent technology com-

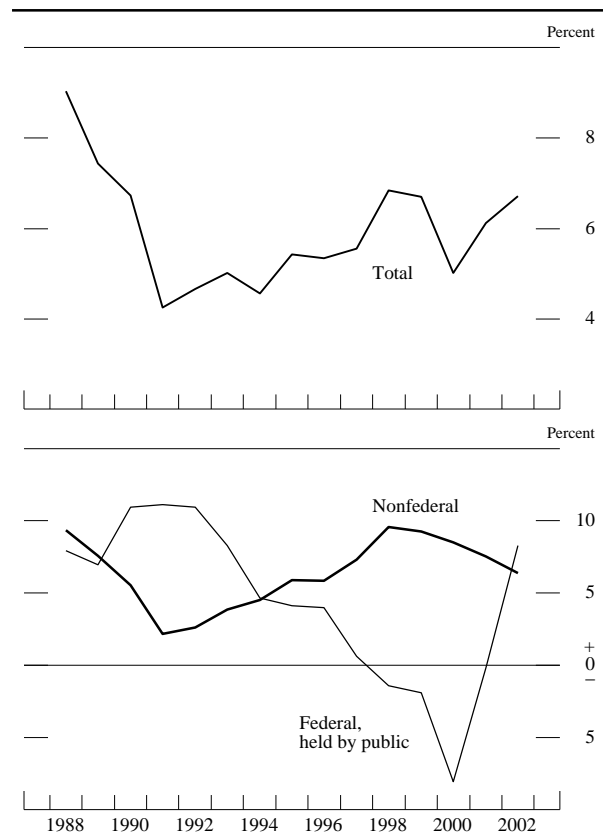
panies helped brighten investors' sentiment regarding that sector, and the Nasdaq is down about 3 percent this year.

### Debt and Financial Intermediation

A deceleration of business borrowing slowed growth of the debt of nonfederal sectors about 1 percentage point in 2002, to 6½ percent. By contrast, the decline in interest rates last year kept borrowing by households and state and local governments brisk. At the federal level, weak tax receipts and an acceleration in spending pushed debt growth to 7½ percent last year after a slight contraction in 2001.

For the year as a whole, corporate borrowing was quite weak, mainly because of sagging capital expenditures, a drying up of merger and acquisition activity, and a reliance on liquid assets. Although businesses tapped bond markets in volume over the first half of the year, subsequent concerns about the reliability of financial statements

Change in domestic nonfinancial debt

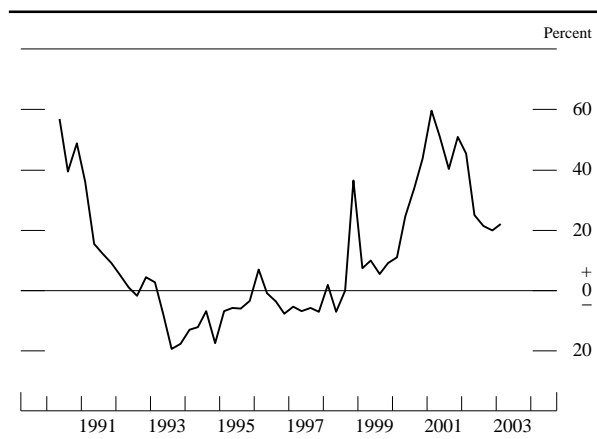


NOTE. For 2002, change is from 2001:Q4 to 2002:Q3 at an annual rate. For earlier years, the data are annual and are computed by dividing the annual flow for a given year by the level at the end of the preceding year. The total consists of nonfederal debt and federal debt held by the public. Nonfederal debt consists of the outstanding credit market debt of state and local governments, households, nonprofit organizations, nonfinancial businesses, and farms. Federal debt held by the public excludes securities held as investments of federal government accounts.

and the quality of corporate governance and deteriorating creditworthiness ruined investors' appetite for corporate debt in the summer and early autumn. Households, by contrast, flocked to the mortgage markets to take advantage of low mortgage rates throughout the year, and strong motor vehicle sales supported the expansion of consumer credit. For depository institutions, the net effect of these developments was an acceleration of credit to 6½ percent last year, 2 percentage points above the pace of 2001. The growth of credit at thrift institutions moderated, though the slowdown can be attributed for the most part to a large thrift institution's conversion to a bank charter. The growth of credit at commercial banks accelerated to 6¾ percent—a significant increase from the anemic pace in 2001; the pickup was driven by large acquisitions of securities, especially mortgage-backed securities, as well as a surge in home equity and residential real estate lending.

By contrast, business lending at commercial banks dropped 7 percent last year after falling almost 4 percent in 2001; last year's decline kept overall loan growth for 2002 to about 5 percent. In the October Senior Loan Officer Opinion Survey on Bank Lending Practices, respondents noted that the decline in commercial and industrial (C&I) lending since the beginning of the year reflected not only the limited funding needs of creditworthy borrowers that found bond financing or a runoff of liquid assets more attractive, but also a reduction in the pool of creditworthy borrowers. Over the course of last year, banks reported some additional net tightening of standards and terms on C&I loans, mainly in response

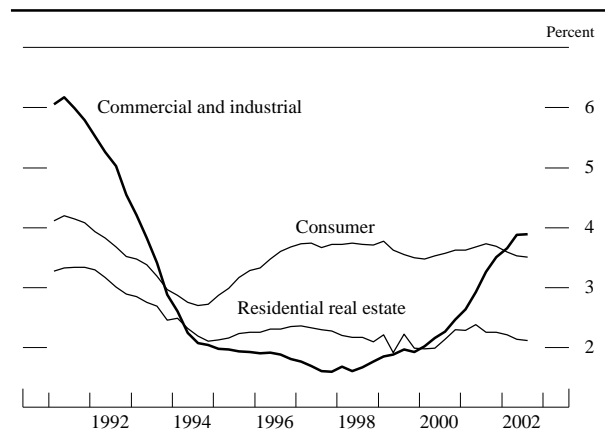
Net percentage of domestic banks tightening standards on commercial and industrial loans to large and medium-sized firms



NOTE. The data are based on a survey generally conducted four times per year; the last reading is from the January 2003 survey. Large and medium-sized firms are those with annual sales of \$50 million or more. Net percentage is the percentage reporting a tightening less the percentage reporting an easing.

SOURCE. Federal Reserve, Senior Loan Officer Opinion Survey on Bank Lending Practices.

Delinquency rates on selected types of loans at banks

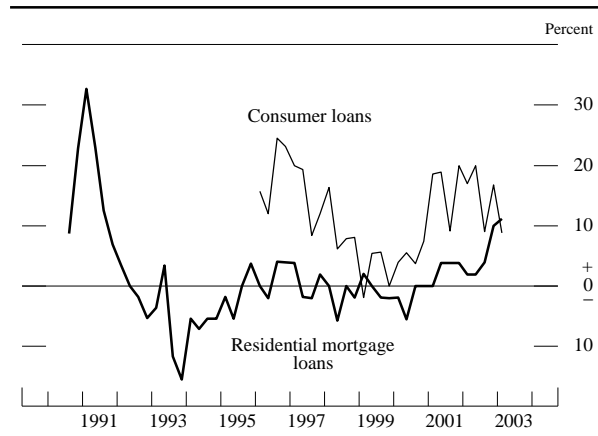


NOTE. The data, from bank Call Reports, are quarterly, seasonally adjusted, and extend through 2002:Q3.

to greater uncertainty about the economic outlook and rising corporate bond defaults, although the proportions of banks that reported doing so declined noticeably. Direct measures of loan pricing conditions from the Federal Reserve's quarterly Survey of Terms of Business Lending also indicated that banks were cautious lenders last year, as the average spread of C&I loan rates over market interest rates on instruments of comparable maturity remained wide, and spreads on new higher-risk loans declined only slightly from the lofty levels that prevailed over the first half of the year. Although bank lenders were wary about business borrowers, especially toward lower-rated credits, they did not significantly constrict the supply of loans: Most small firms surveyed by the National Federation of Independent Businesses in 2002 reported that they experienced little or no difficulty satisfying their borrowing needs.

Loan quality at commercial banks improved overall last year. Loan delinquency rates edged down through the third quarter of 2002—the latest period for which Call Report data are available—in response to better performance of residential real estate and consumer loans and a stable delinquency rate on C&I loans. Despite the improvement in consumer loan quality, domestic banks imposed somewhat more stringent credit conditions when lending to households, according to the survey on bank lending practices. Moderate net proportions of surveyed institutions tightened credit standards and terms for credit card and other consumer loans throughout last year. The net fraction of banks that tightened standards on residential mortgage loans rose late in the year to the highest share in the past decade, but nonetheless remained quite low. Commercial banks generally registered strong profit gains last year, although steep losses on loans to energy and telecommunications firms significantly depressed profits at several large bank holding companies. Despite

Net percentage of domestic banks tightening standards on consumer loans and residential mortgage loans



NOTE. The data are based on a survey generally conducted four times per year; the last reading is from the January 2003 survey. Net percentage is the percentage reporting a tightening less the percentage reporting an easing.

SOURCE. Federal Reserve, Senior Loan Officer Opinion Survey on Bank Lending Practices.

the increased rate of provisioning for loan losses, the banking sector's profitability stayed in the elevated range recorded for the past several years, as a result of the robust fee income from mortgage and credit card lending, effective cost controls, and the relatively inexpensive funding offered by inflows of core deposits. As of the third quarter of last year, virtually all assets in the banking sector were at well-capitalized institutions, and the substitution of securities for loans on banks' balance sheets helped edge up risk-based capital ratios.

The financial condition of insurance companies, by contrast, worsened notably last year. Both property and casualty insurers and life and health insurers sustained significant investment losses from the decline in equity

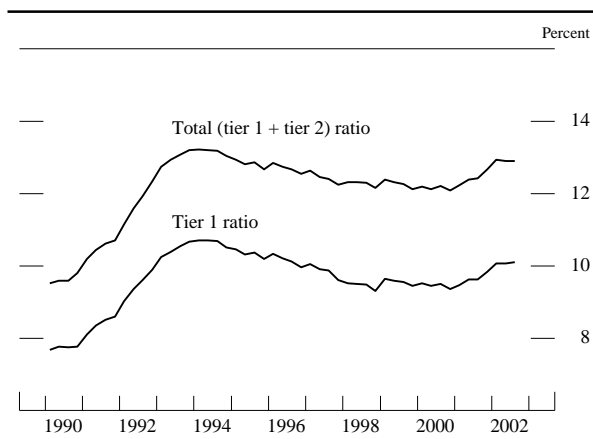
prices and the deterioration in corporate credit quality. However, these negative pressures were offset somewhat by the continued strong growth of insurance premiums, and both sectors of the insurance industry stayed fairly well capitalized in 2002.

### Monetary Aggregates

The broad monetary aggregates decelerated noticeably last year after surging in 2001. Short-term market interest rates, which had declined swiftly during 2001, were stable over the first half of the year; deposit rates, in a typical pattern of lagged adjustment, continued to fall. Consequently, the opportunity cost of holding M2 assets increased, especially for its liquid deposit (checking and savings accounts) and retail money fund components, thereby restraining the demand for such assets. After decelerating in the first half of the year, M2 rebounded significantly in the second half, because of a surge in liquid deposits and retail money market mutual funds. The strength in both components partly reflected elevated volatility in equity markets against the backdrop of a still-low opportunity cost of holding such deposits. In addition, another wave of mortgage refinancing boosted M2 growth during this period. (Refinancings cause prepayments to accumulate temporarily in deposit accounts before being distributed to investors in mortgage-backed securities.) All told, over the four quarters of the year, M2 increased 7 percent, a pace that exceeded the expansion of nominal income. As a result, M2 velocity—the ratio of nominal GDP to M2—declined for the fifth year in a row, roughly in line with the drop in the opportunity cost of M2 over this period.

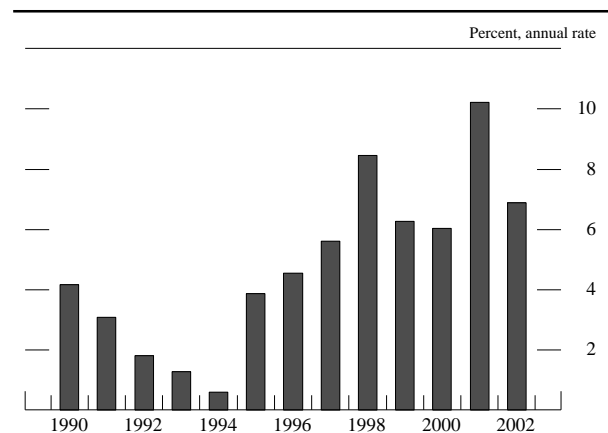
Reflecting in part the slowing of its M2 component, M3—the broadest money aggregate—expanded

Regulatory capital ratios of commercial banks



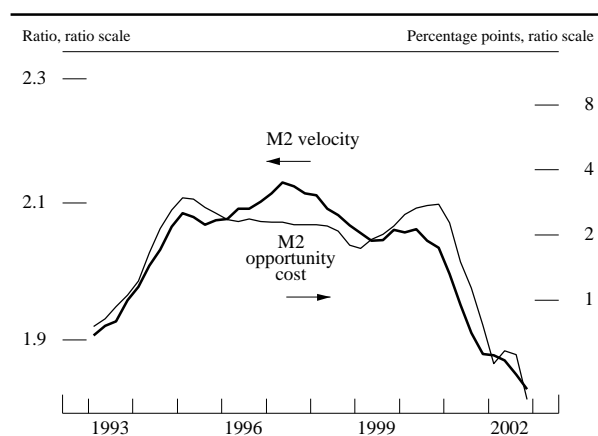
NOTE. The data, which are quarterly and extend through 2002:Q3, are ratios of capital to risk-weighted assets. Tier 1 capital consists primarily of common equity and certain perpetual preferred stock. Tier 2 capital consists primarily of subordinated debt, preferred stock not included in tier 1 capital, and a limited amount of loan-loss reserves.

M2 growth rate



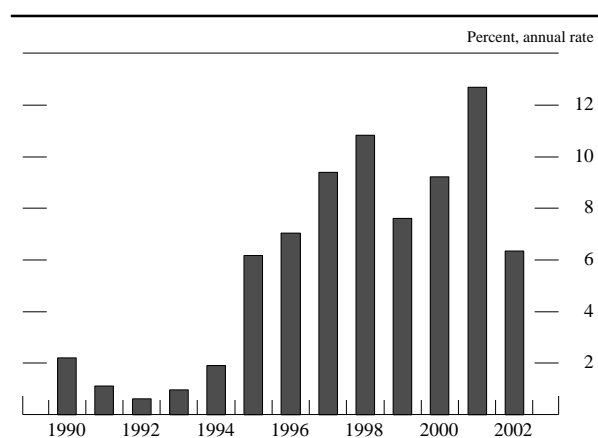
NOTE. M2 consists of currency, travelers checks, demand deposits, other checkable deposits, savings deposits (including money market deposit accounts), small-denomination time deposits, and balances in retail money market funds.

## M2 velocity and opportunity cost



NOTE. The data are quarterly and extend through 2002:Q4. The velocity of M2 is the ratio of nominal gross domestic product to the stock of M2. The opportunity cost of holding M2 is a two-quarter moving average of the difference between the three-month Treasury bill rate and the weighted average return on assets included in M2.

## M3 growth rate



NOTE. M3 consists of M2 plus large-denomination time deposits, balances in institutional money market funds, repurchase-agreement liabilities (overnight and term), and eurodollars (overnight and term).

6½ percent in 2002, a pace well below the 12¾ percent advance posted in 2001. Growth in M3 was also held down by a sharp deceleration of institutional money funds, as their yields dropped to close alignment with short-term market interest rates. This effect was only partly offset by the pickup in needs to fund bank credit, which resulted in an acceleration in the issuance of managed liabilities, including large time deposits. M3 velocity continued to decline in 2002.

## New Discount Window Programs

On October 31, 2002, following a three-month public comment period, the Board of Governors approved

changes to its Regulation A that established two new types of loans to depository institutions—primary and secondary credit—and discontinued the adjustment and extended credit programs. The new programs were implemented on January 9, 2003. The seasonal credit program was not altered.

The primary reason for adopting the new programs was to eliminate the subsidy to borrowing institutions that was implicit in the basic discount rate, which since the late 1960s had usually been set below market interest rates. The subsidy required Federal Reserve Banks to administer credit extensions heavily in order to ensure that borrowing institutions used credit only in appropriate circumstances—specifically, when they had exhausted other reasonably available funding sources. That administration was necessarily somewhat subjective and consequently difficult to apply consistently across Reserve Banks. In addition, the heavy administration was one factor that caused depository institutions to become reluctant to use the window even in appropriate conditions. Also, depository institutions were concerned at times about being marked with a “stigma” if market analysts and counterparties inferred that the institution was borrowing from the window and suspected that the borrowing signaled that the institution was having financial difficulties. The resulting reluctance to use the window reduced its usefulness in buffering shocks to the reserve market and in serving as a backup source of liquidity to depository institutions, and thus undermined its performance as a monetary policy tool.

To address these issues, the Board of Governors specified that primary credit may be made available at an above-market interest rate to depository institutions in generally sound financial condition. The above-market interest rate eliminates the implicit subsidy. Also, restricting eligibility for the program to generally sound institutions should reduce institutions’ concerns that their borrowing could signal financial weakness.

The Federal Reserve set the initial primary credit rate at 2.25 percent, 100 basis points above the FOMC’s target federal funds rate as of January 9, 2003. The target federal funds rate remained unchanged, and thus the adoption of the new programs did not represent a change in the stance of monetary policy. In the future, the primary credit rate will be adjusted from time to time as appropriate, using the same discretionary procedure that was used in the past to set the adjustment credit rate. The Federal Reserve also established procedures to reduce the primary credit rate to the target federal funds rate in a national emergency, even if key policymakers are unavailable.

Institutions that do not qualify for primary credit may obtain secondary credit when the borrowing is consistent with a prompt return to market sources of funds or is

necessary to resolve severe financial difficulties. The interest rate on secondary credit is set by formula 50 basis points above the primary credit rate. The rate was set initially at 2.75 percent. Because secondary credit borrowers are not in sound financial condition, extensions of secondary credit usually involve some administration.

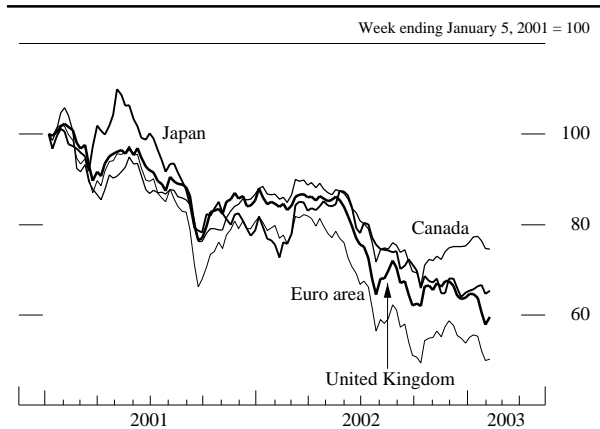
### International Developments

The international economy rebounded in 2002 after a stagnant performance in 2001, but recovery was uneven in both timing and geographical distribution. Growth abroad picked up sharply in the first half of last year, as a strong rally in the high-tech exporting economies in developing Asia was joined by robust growth in Canada and, to a lesser extent, Mexico. Japan also posted respectable growth in the first half, largely as a result of a surge of exports. However, performance in the euro area remained sluggish, and several South American economies experienced difficulties, with full-fledged crises in Argentina and Venezuela and mounting concerns about prospects for Brazil. As the U.S. economy decelerated in the second half, the rapid pace of recovery slowed in developing Asia and in Canada, while performance remained lackluster in much of the rest of the world.

Monetary policy actions abroad also diverged across countries in 2002 as authorities reacted to differing economic conditions. In Canada, official interest rates were raised in three steps by July amid concerns that buoyant domestic demand and sharply rising employment would ignite inflationary pressures. Monetary authorities in Australia and Sweden also increased policy rates in the first half of the year. However, as economic conditions weakened around the world in the second half, official interest rates were held constant in Canada and Australia and were lowered in Sweden. Monetary policy was held steady throughout 2002 in the United Kingdom, where growth was moderate and inflation subdued, but official interest rates were lowered 25 basis points, to 3.75 percent, in early February 2003 in response to concerns about the prospects for global and domestic demand. The European Central Bank (ECB) held rates constant through most of the year, as inflation remained above the ECB's 2 percent target ceiling, but rates were lowered 50 basis points in December as the euro area's already weak recovery appeared to be stalling. Japanese short-term interest rates remained near zero, while authorities took some limited further steps to stimulate demand through nontraditional channels. Monetary policy was tightened in both Mexico and Brazil in response to concerns about the inflationary effects of past currency depreciation.

Yield curves in the major foreign industrial countries steepened and shifted up in the first quarter of 2002 in

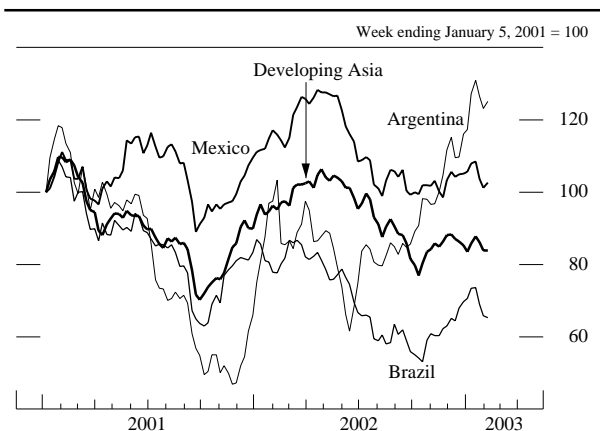
Equity indexes in selected foreign industrial countries



NOTE. The data are weekly. The last observations are the average of trading days through February 5, 2003.

response to generally favorable economic news, but later they flattened out and moved back down as the outlook deteriorated. Similarly, equity prices in the major foreign industrial economies held up well early in the year but then declined along with the U.S. stock market and ended the year down sharply from the previous year. The performance of the stock markets in the emerging-market economies was mixed. Share prices in Brazil and Mexico fell sharply in the second and third quarters but then showed some improvement toward the end of the year. In the Asian emerging-market economies, equity prices rose in the first half of 2002 on a general wave of optimism, especially in the high-technology producing economies; equity prices began to decline around midyear as global demand softened but posted modest rebounds late in the year.

Equity indexes in selected emerging markets



NOTE. The data are weekly. The last observations are the average of trading days through February 5, 2003.

The foreign exchange value of the dollar continued its mild upward trend into the early part of 2002, as it appeared that the United States was poised to lead a global economic recovery. However, the dollar weakened sharply in the late spring and early summer amid deepening concerns about U.S. corporate governance and profitability. Around that time market analysts also appeared to become more worried about the growing U.S. current account deficit and its potential negative influence on the future value of the dollar. The dollar rebounded somewhat around midyear as growth prospects for other major economies, particularly in the euro area, appeared to dim; the dollar dropped back again late in the year as geopolitical tensions intensified, and continued to depreciate in early 2003. In nominal terms the dollar has declined about 5 percent on balance over the past year, with depreciations against the currencies of the major industrial countries and several of the developing Asian economies partly offset by appreciation against the currencies of several Latin American countries.

### Industrial Economies

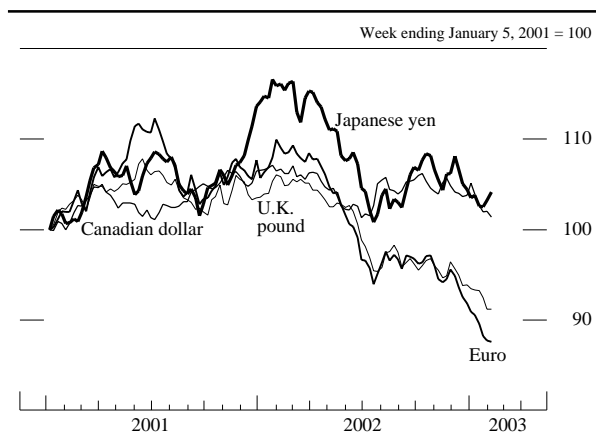
The Canadian economy recorded the strongest performance among the major foreign industrial countries last year despite some slowing in the second half. The strength, which was largely homegrown, reflected robust growth of consumption and residential construction as well as an end to inventory runoffs early in the year. The expansion was accompanied by very rapid increases in employment and utilization of capacity, and the core inflation rate breached the upper end of the government's 1 percent to 3 percent target range near the end of the year. The Canadian dollar appreciated against the U.S. dollar in the first

half of the year, but it dropped back somewhat in the second half as the economy slowed; by the end of the year it was up only slightly on balance. The Canadian dollar has moved up somewhat more so far this year.

The Japanese economy recorded positive growth during 2002, although it was not enough to fully reverse the decline in output that occurred in 2001. Despite about 10 percent appreciation of the yen against the dollar in 2002, Japanese growth was driven largely by exports, with smaller contributions from both increased consumption and a slower pace of inventory reduction. In contrast, private investment continued to decline, although not as sharply as in 2001. Labor market conditions remained quite depressed, and consumer prices continued to fall. Little progress was made on the serious structural problems that have plagued the Japanese economy, including the massive and growing amount of bad loans on the books of Japanese banks. A new set of official measures that aims at halving the value of bad loans within two and a half years was announced in the fall, but the details of this plan are still not fully specified. In September, the Bank of Japan announced a plan to buy shares from banks with excessive holdings of equity, which would help to reduce bank exposure to stock market fluctuations. Because the transactions are to occur at market prices, there would be no net financial transfer to the banks. Near the end of last year the Bank of Japan (BOJ) raised its target range for bank reserves at the BOJ from ¥10–15 trillion to ¥15–20 trillion, increased the monthly amount of its outright purchases of long-term government bonds, and broadened the range of collateral that can be used for market operations. In December the monetary base was up about 20 percent from a year earlier, a rise partially reflecting the increased level of bank reserves at the BOJ. However, the twelve-month rate of base money growth was considerably below the 36 percent pace registered in April. Broad money growth remains subdued.

Economic performance in the euro area was quite sluggish last year. Although exports were up sharply, growth in consumption was modest, and private investment declined. The area's lackluster economic performance pushed the unemployment rate up by several tenths of a percentage point by the end of the year. Economic weakness was particularly pronounced in some of the larger countries—Germany, Italy, the Netherlands, and, to a lesser extent, France. In contrast, growth in Spain and some of the smaller euro-area countries—Ireland, Portugal, Finland, and Greece—was much more robust. Headline inflation jumped to a bit above 2½ percent early in the year, owing to higher food and energy prices and in small part to the introduction of euro notes and coins. Increased slack in the economy, however, together with the 15 percent appreciation of the euro by the end of the

U.S. dollar exchange rate against selected major currencies



NOTE. The data are weekly. Exchange rates are in foreign currency units per dollar. Last observations are the average of trading days through February 5, 2003.



year, helped to mitigate inflation concerns, and the ECB lowered its policy interest rate in December. The euro continued to appreciate in early 2003.

Economic growth in the United Kingdom held up better than in the other major European countries last year, and sterling strengthened about 10 percent versus the dollar. However, the expansion remained uneven, with the services sector continuing to grow more rapidly than the smaller manufacturing sector. Despite tight labor markets, inflation remained a bit below the Bank of England's target of 2½ percent for most of the past year. A sharp rise in housing prices has, however, raised some concern about the possibility of a real estate price bubble. The British government announced its intention to complete a rigorous assessment of its criteria for joining the European Monetary Union (EMU) by the middle of this year and, if they are met, to hold a referendum on entry.

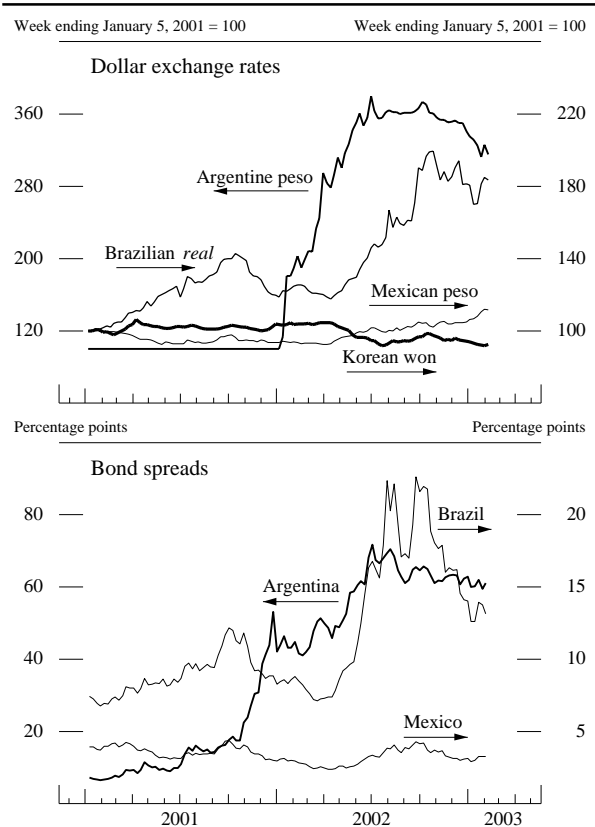
### Emerging-Market Economies

The Brazilian economy posted a surprisingly strong rebound in 2002 despite a major political transition and accompanying turbulence in financial markets. The Brazilian *real* depreciated sharply between May and October, and sovereign bond spreads climbed to 2,400 basis points as it became increasingly likely that Luiz Inácio Lula da Silva (Lula), the Workers' Party candidate, would win the presidential election. Given some of the past stances of the party, this possibility fueled concerns among foreign investors about a potential erosion of fiscal and monetary discipline. In response to the sharp deterioration in financial conditions facing Brazil, a \$30 billion IMF program was approved in September 2002, \$6 billion of which was disbursed by the end of the year. However, financial conditions improved markedly after Lula won the election in late October and appointed a cabinet perceived to be supportive of orthodox fiscal and monetary policies, including greater central bank independence. By January 2003 the *real* had reversed about one-fourth of its previous decline against the dollar, and bond spreads had fallen sharply. However, the new administration still faces some major challenges. In particular, serious concerns remain over the very large quantity and relatively short maturity of the outstanding government debt. In addition, last year's currency depreciation fueled a rise in inflation that has prompted several increases in the monetary policy interest rate. In January the government raised the upper bound of its inflation target range for this year to 8.5 percent from 6.5 percent, although the target for next year was lowered at the same time to 5.5 percent from 6.25 percent.

Argentine GDP contracted further in 2002 after declining 10 percent in 2001. The currency board arrange-

ment that had pegged the peso at a one-to-one rate with the dollar collapsed early last year; the peso lost nearly three-fourths of its value by late June, and sovereign bond spreads spiked to more than 7,000 basis points. By early 2002, the banking system had become effectively insolvent as a result of the plunging peso, the weak economy, and the government's default on debt that the banks held mostly involuntarily. Confronted with this situation, the government forced the conversion of the banks' dollar-denominated assets and liabilities to pesos and also mandated the rescheduling of a large share of deposits. As a result of these and other measures, confidence in the banking system, already shaken, was further impaired. Financial and economic conditions eventually stabilized in the second half of the year, but there are no signs yet of a sustained recovery. The government also defaulted on obligations to multilateral creditors in late 2002 and early 2003. In January, Argentina and the International Monetary Fund reached agreement on a \$6.6 billion short-term program that will go to meeting Argentina's payments to the IMF at least through the elections expected

Exchange rates and bond spreads for selected emerging markets



NOTE. The data are weekly. Exchange rates (top panel) are in foreign currency units per dollar. Bond spreads (bottom panel) are the J.P. Morgan Emerging Market Bond Index (EMBI+) spreads over U.S. Treasuries. Last observations are the average of trading days through February 5, 2003.

in the spring and also to clearing its overdue obligations to the multilateral development banks.

Venezuela experienced extreme economic and political turmoil over the past year. In February 2002 the central bank abandoned the bolivar's crawling peg to the dollar, and the bolivar depreciated sharply. Opponents of President Hugo Chavez mounted a short-lived coup in April and declared a national strike in early December. The strike brought the already-weak economy to a standstill, and output in the key oil industry plummeted. The strike abated in early February in all sectors but oil. In response to the strike, Chavez increased his control of the state-owned oil company and oil production began rising in early 2003, but it was still well below pre-strike levels. With the exchange rate plunging in late January, the government suspended currency trading for two weeks before establishing a fixed exchange rate regime and some restrictions on foreign currency transactions.

One of the few bright spots in Latin America last year was the Mexican economy. Boosted by the U.S. recovery, growth was moderate for the year as a whole despite some late slowing. However, financial conditions deteriorated somewhat after midyear as market participants reevaluated the strength of the North American recovery. Mexican stock prices slid about 25 percent between April and September, and sovereign bond spreads widened nearly 200 basis points to around 430 basis points over the same period. Nevertheless, the Mexican economy did not appear to be much affected by spillovers from the problems elsewhere in Latin America; bond spreads dropped sharply between October and the end of the year to around 300 basis points, a level considerably lower than elsewhere in the region. The peso depreciated about 12 percent against the dollar over the course of last year. The decline fueled an increase in twelve-month inflation to more than 5½ percent by year-end. The acceleration put inflation above the government target rate of 4½ percent and well above the ambitious 3 percent target set for 2003. In response to increasing inflation, the Bank of Mexico has tightened monetary policy four times since September 2002. The peso has continued to depreciate in early 2003, and bond spreads have moved back up a bit.

The Asian emerging-market economies generally performed well in 2002, although there were significant differences within the region. Outside of China, the strongest growth was recorded in South Korea, which benefited in the first half of the year from both an upturn in global demand for high-tech products and a surge in domestic demand, particularly consumption. However, consumer confidence deteriorated at the end of the year as tensions over North Korea intensified; the uneasy situation, as well as the substantial existing consumer debt burden, pose significant risks to growth in consumption this year. The Korean won appreciated sharply against the dollar between April and midyear in response to improving economic conditions; it then dropped back in late summer and early fall as perceptions about the strength of the global recovery were adjusted downward. However, the won turned back up against the dollar late last year.

The performance of the ASEAN-5 economies—Indonesia, Malaysia, the Philippines, Singapore, and Thailand—also was generally robust in 2002, although the overall softening in global demand in the second half of the year was evident there as well. The second-half slowing in production was particularly pronounced in Singapore, which is heavily dependent on exports of high-technology products. Taiwan, another high-technology producer, also showed a significant deceleration in output between the first and second halves of the year. Both of these economies experienced some mild deflation in 2002, although prices turned up toward the end of the year.

Although the Hong Kong economy did not show as much improvement as most other emerging Asian economies in the first half of last year, it recorded very strong growth in the third quarter. Nevertheless, prices continued to fall for the fourth consecutive year. The mainland Chinese economy, which again outperformed the rest of the region in 2002, enjoyed surging investment by the government and by foreign investors as well as robust export growth. The Chinese economy continued to experience mild deflation last year.