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# Monetary Policy Report to the Congress

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*Report submitted to the Congress on February 11, 2004, pursuant to section 2B of the Federal Reserve Act*

## *MONETARY POLICY AND THE ECONOMIC OUTLOOK*

The economic expansion in the United States gathered strength during 2003 while price inflation remained quite low. At the beginning of the year, uncertainties about the economic outlook and about the prospects of war in Iraq apparently weighed on spending decisions and extended the period of subpar economic performance that had begun more than two years earlier. However, with the support of stimulative monetary and fiscal policies, the nation's economy weathered that period of heightened uncertainty to post a marked acceleration in economic activity over the second half of 2003. Still, slack in resource utilization remained substantial, unit labor costs continued to decline as productivity surged, and core inflation moved lower. The performance of the economy last year further bolstered the case that the faster rate of increase in productivity, which began to emerge in the late 1990s, would persist. The combination of that favorable productivity trend and stimulative macroeconomic policies is likely to sustain robust economic expansion and low inflation in 2004.

At the time of our last *Monetary Policy Report to the Congress*, in July, near-term prospects for U.S. economic activity remained unclear. Although the Federal Open Market Committee (FOMC) believed that policy stimulus and rapid gains in productivity would eventually lead to a pickup in the pace of the expansion, the timing and extent of the improvement were uncertain. During the spring, the rally that occurred in equity markets when the war-related uncertainties lifted suggested that market participants viewed the economic outlook as generally positive. By then, the restraints imparted by the earlier sharp decline in equity prices, the retrenchment in capital spending, and lapses in corporate governance were receding. As the price of crude oil dropped back and consumer confidence rebounded last spring, household spending seemed to be rising once again at a moderate rate. Businesses, however, remained cau-

tious; although the deterioration in the labor market showed signs of abating, private payroll employment was still declining, and capital spending continued to be weak. In addition, economic activity abroad gave few signs of bouncing back, even though long-term interest rates in major foreign economies had declined sharply. At its June meeting, the FOMC provided additional policy accommodation, given that, as yet, it had seen no clear evidence of an acceleration of U.S. economic activity and faced the possibility that inflation might fall further from an already low level.

During the next several months, evidence was accumulating that the economy was strengthening. The improvement was initially most apparent in financial markets, where prospects for stronger economic activity and corporate earnings gave a further lift to equity prices. Interest rates rose as well, but financial conditions appeared to remain, on net, stimulative to spending, and additional impetus from the midyear changes in federal taxes was in train. Over the remainder of the year, in the absence of new shocks to economic activity and with gathering confidence in the durability of the economic expansion, the stimulus from monetary and fiscal policies showed through more readily in an improvement in domestic demand. Consumer spending and residential construction, which had provided solid support for the expansion over the preceding two years, rose more rapidly, and business investment revived. Spurred by the global recovery in the high-tech sector and by a pickup in economic activity abroad, U.S. exports also posted solid increases in the second half of the year. Businesses began to add to their payrolls, but only at a modest pace that implied additional sizable gains in productivity.

The fundamental factors underlying the strengthening of economic activity during the second half of 2003 should continue to promote brisk expansion in 2004. Monetary policy remains accommodative. Financial conditions for businesses are quite favorable: Profits have been rising rapidly, and corporate borrowing costs are at low levels. In the household sector, last year's rise in the value of equities and real estate exceeded the further accumulation of debt by enough to raise the ratio of household net worth to disposable income after three consecutive years of

decline. In addition, federal spending and tax policies are slated to remain stimulative during the current fiscal year, while the restraint from the state and local sector should diminish. Lastly, the lower foreign exchange value of the dollar and a sustained economic expansion among our trading partners are likely to boost the demand for U.S. production. Considerable uncertainty, of course, still attends the economic outlook despite these generally favorable fundamentals. In particular, questions remain as to how willing businesses will be to spend and hire and how durable will be the pickup in economic growth among our trading partners. At its meeting on January 27–28, 2004, the Committee perceived that upside and downside risks to the attainment of sustainable growth for the next few quarters are roughly equal.

Prospects for sustained high rates of increase in productivity are quite favorable. Businesses are likely to retain their focus on controlling costs and boosting efficiency by making organizational improvements and exploiting investments in new equipment. With the ongoing gains in productivity, the existing margins of slack in resource utilization should recede gradually, and any upward pressure on prices should remain well contained. The FOMC indicated at its January meeting that, with inflation low and resource use still slack, it can be patient in removing its policy accommodation.

### *Monetary Policy, Financial Markets, and the Economy over 2003 and Early 2004*

During the opening months of 2003, the softness in economic conditions was exacerbated by the substantial uncertainty surrounding the onset of war in Iraq. Private nonfarm businesses began again to cut payrolls substantially, consumer spending slowed, and business investment was muted. Although the jump in energy prices pushed up overall inflation, slack in resource utilization and the rapid rise in labor productivity pushed core inflation down. In financial markets, the heightened sense of caution among investors generated safe-haven demands for Treasury and other fixed-income securities, and equity prices declined.

At its meeting on March 18, the FOMC maintained its 1¼ percent target for the federal funds rate to provide support for a stronger economic expansion that appeared likely to materialize. The Committee noted that the prevailing high degree of geopolitical uncertainty complicated any assessment of prospects for the economy, and members refrained from making a determination about the balance of risks with regard to its goals of maximum employment and

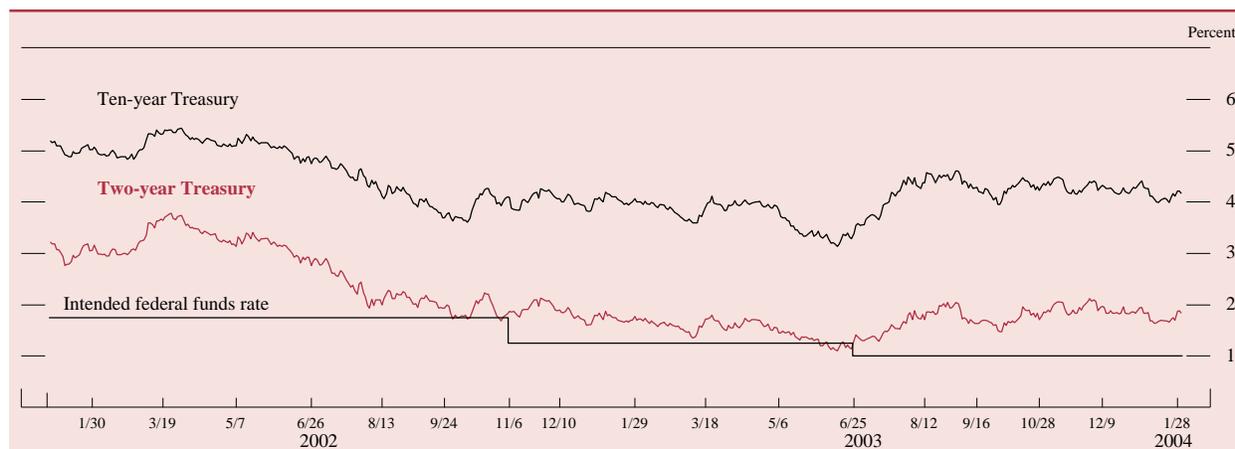
stable prices. At the same time, the Committee agreed to step up its surveillance of the economy, which took the form of a series of conference calls in late March and early April to consult about developments. When military action in Iraq became a certainty, financial markets began to rally, with risk spreads on corporate debt securities narrowing and broad equity indexes registering notable gains. Economic news, however, remained mixed.

Indicators of the economy at the time of the May 6 FOMC meeting continued to suggest only tepid growth. Uncertainty in financial markets had declined, and rising consumer confidence and a wave of mortgage refinancing appeared to be supporting consumer spending. However, persistent excess capacity evident in labor and product markets pointed to possible further disinflation. The lifting of some of the uncertainty clouding the economic outlook allowed the Committee to make the determination that the risks to economic growth were balanced but that the probability of an unwelcome substantial fall in inflation exceeded that of a pickup in inflation. The FOMC judged that, taken together, the balance of risks was weighted toward weakness. The Committee left the federal funds rate target at 1¼ percent, but the Committee's announcement prompted a rally in the Treasury market, and coupon yields fell substantially as market participants marked down their expectations for the path of the federal funds rate.

By the time of the June 24–25 FOMC meeting, risk spreads had narrowed further and equity prices had extended their rise, but the prospects for sustained economic expansion still seemed tentative. Although Committee members referred to signs of improvement in some sectors of the economy, they saw no concrete evidence of an appreciable overall strengthening in the economic expansion and viewed the excess capacity in the economy as likely to keep inflation in check. The Committee lowered the target for the federal funds rate ¼ percentage point, to 1 percent, to add further support to the economic expansion and as a form of insurance against a further substantial drop in inflation, however unlikely. The members saw no serious obstacles to further conventional policy ease down to the zero lower bound on nominal interest rates should that prove to be necessary. The Committee also discussed alternative means of providing monetary stimulus should the target federal funds rate be reduced to a point at which they would have little or no latitude for additional easing through this traditional channel.

Longer-term interest rates backed up following the meeting, as investors had apparently placed substantial odds on a policy move larger than 25 basis points

## Selected interest rates



NOTE. The data are daily and extend through February 4, 2004. The dates on the horizontal axis are those of scheduled FOMC meetings.

and may have been disappointed that the announcement failed to mention any potential “unconventional” monetary policy options. Ten-year Treasury yields rose sharply during the following weeks in reaction to interpretations of the Chairman’s congressional testimony, the release of Committee members’ economic projections, and positive incoming news about the economy and corporate profits. A substantial unwinding of hedging positions related to mortgage investments may well have amplified the upswing in market yields. Over the intermeeting period, labor markets continued to be soft, but industrial production, personal consumption expenditures, and business outlays all strengthened, and the housing market remained robust. By the time of the August 12 FOMC meeting, members generally perceived a firming in the economy, most encouragingly in business investment spending, and believed that, even after the rise in longer-term rates, financial conditions were still supportive of vigorous economic growth. Given the continued slack in resource use across the economy, however, members saw little risk of inducing higher inflation by leaving the federal funds rate at its accommodative level. On the basis of the economic outlook, and to reassure market participants that policy would not reverse course soon, Committee members decided to include in the announcement a reference to their judgment that under the anticipated circumstances, policy accommodation could be maintained for a “considerable period.”

Through the September 16 and October 28 FOMC meetings, the brightening prospects for future growth put upward pressure on equity prices and longer-term interest rates. The Committee’s retention of the phrase “considerable period” in the announcements

following each of these meetings apparently provided an anchor for near-term interest rates. The Committee’s discussion at these two meetings focused on the increased evidence of a broadly based acceleration in economic activity and on the continued weakness in labor markets. Rising industrial production, increased personal consumption and business investment spending, higher profits, receptive financial markets, and a lower foreign exchange value of the dollar all suggested that sustained and robust economic growth was in train. The Committee’s decision to leave the stance of monetary policy unchanged over this period reflected, in part, a continuing confidence that gains in productivity would support economic growth and suppress inflationary pressures. In fact, the Committee generally viewed its goal of price stability as essentially having been achieved.

By the time of the December 9 FOMC meeting, the economic expansion appeared likely to continue at a rate sufficient to begin to reduce slack in labor and product markets. Equity markets continued to rally, and risk spreads, particularly on the debt of speculative-grade firms, narrowed further. The labor market was finally showing some signs of improvement, and spending by households remained strong even as the impetus from earlier mortgage refinancings and tax cuts began to wane. The acceleration in capital spending and evidence that some firms were beginning to accumulate inventories seemed to signal that business confidence was on the mend. However, twelve-month core consumer price inflation was noticeably lower than in the previous year. Even though the unemployment rate was expected to move down gradually, continued slack in labor and product markets over the near term was viewed as sufficient to keep any nascent inflation subdued. Uncertainty

about the pace at which slack would be worked down, however, made longer-run prospects for inflationary pressures difficult to gauge. Given the better outlook for sustained economic growth, the possibility of pernicious deflation associated with a pronounced softening in real activity was seen as even more remote than it had been earlier in the year. The Committee indicated that keeping policy accommodative for a considerable period was contingent on its expectation that inflation would remain low and that resource use would remain slack.

At its meeting on January 27–28, 2004, the Committee viewed a self-sustaining economic expansion as even more likely. Members drew particular reassurance from reports of plans for stronger capital spending and the widespread distribution of increased activity across regions. Accommodative financial market conditions, including higher equity prices, narrower risk spreads on bonds, and eased standards on business loans, also seemed supportive of economic expansion. However, some risks remained in light of continued lackluster hiring evidenced by the surprisingly weak December payroll employment report. With the likelihood for rapid productivity growth seemingly more assured, Committee members generally agreed that inflation pressures showed no sign of increasing and that a bit more disinflation was possible. Under these circumstances, the Committee concluded that current conditions allowed monetary policy to remain patient. As to the degree of policy accommodation, the Committee left its target for the federal funds rate unchanged. The Committee’s characterization that policy could be patient instead of its use of the phrase “considerable period” in its announcement prompted a rise in Treasury yields across the yield curve and a fall in equity prices.

### *Economic Projections for 2004*

Federal Reserve policymakers expect that the economic expansion will continue at a brisk pace in 2004. The central tendency of the forecasts of the change in real gross domestic product made by the members of the Board of Governors and the Federal Reserve Bank presidents is 4½ percent to 5 percent, measured from the final quarter of 2003 to the final quarter of 2004. The full range of these forecasts is somewhat wider—from 4 percent to 5½ percent. The FOMC participants anticipate that the projected increase in real economic activity will be associated with a further gradual decline in the unemployment rate. They expect that the unemployment rate, which

### *Economic projections for 2004*

Percent

Indicator	Memo: 2003 actual	Federal Reserve Governors and Reserve Bank presidents	
		Range	Central tendency
<i>Change, fourth quarter to fourth quarter<sup>1</sup></i>			
Nominal GDP .....	5.9	5½–6½	5½–6¼
Real GDP .....	4.3	4–5½	4½–5
PCE chain-type price index .....	1.4	1–1½	1–1¼
<i>Average level, fourth quarter</i>			
Civilian unemployment rate .....	5.9	5¼–5½	5¼–5½

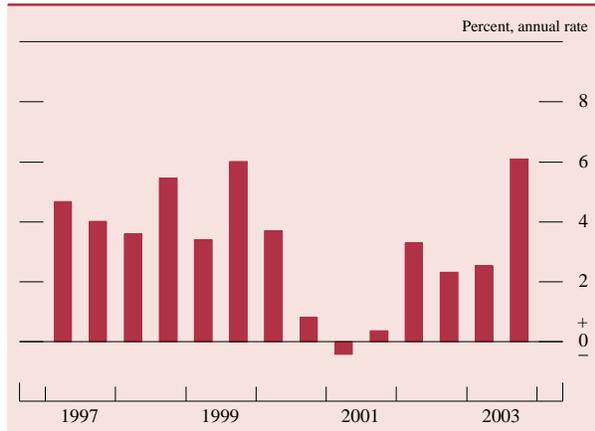
1. Change from average for fourth quarter of previous year to average for fourth quarter of year indicated.

has averaged 5¾ percent in recent months, will be between 5¼ percent and 5½ percent in the fourth quarter of the year. With rapid increases in productivity likely to be sustained and inflation expectations stable, Federal Reserve policymakers anticipate that inflation will remain quite low this year. The central tendency of their forecasts for the change in the chain-type price index for personal consumption expenditures (PCE) is 1 percent to 1¼ percent; this measure of inflation was 1.4 percent over the four quarters of 2003.

### *ECONOMIC AND FINANCIAL DEVELOPMENTS IN 2003 AND EARLY 2004*

The pace of economic expansion strengthened considerably in the second half of 2003 after almost two years of uneven and, on balance, sluggish growth. In early 2003, accommodative monetary policy and stimulative fiscal policies were in place, but economic activity still seemed to be weighed down by a number of factors that had restrained the recovery earlier: Geopolitical tensions were again heightened, this time by the impending war in Iraq, businesses remained unusually cautious about the strength of the expansion, and economic activity abroad was still weak. In June the continued lackluster economic growth and a further downshift in inflation from an already low level prompted a further reduction in the federal funds rate. In addition, the tax cuts that became effective at midyear provided a significant boost to disposable income. In the succeeding months, the macroeconomic stimulus began to show through clearly in sales and production, and some of the business caution seemed to recede. Real GDP increased at an annual rate of 6 percent, on average, in the third and fourth quarters of last year. In contrast, between late 2001 and mid-2003, real GDP had risen at an annual rate of only 2½ percent.

Change in real GDP



NOTE. Here and in subsequent charts, except as noted, change for a given period is measured to its final quarter from the final quarter of the preceding period.

During the period of recession and subpar economic expansion, considerable slack developed in labor and product markets. The firming of economic activity in the second half of last year produced modest increases in rates of resource utilization. Sustained efforts by businesses to control costs led to further rapid gains in productivity. As a result, unit labor costs declined, and core rates of inflation continued to slow in 2003; excluding food and energy, the PCE chain-type price index increased just 0.9 percent last year. Measures of overall inflation, which were boosted by movements in food and energy prices, were higher than those for core inflation.

Domestic financial market conditions appeared to become increasingly supportive of economic growth last year. The economic expansion lowered investors' perception of, and perhaps aversion to, risk, and continued disinflation was interpreted as a sign that

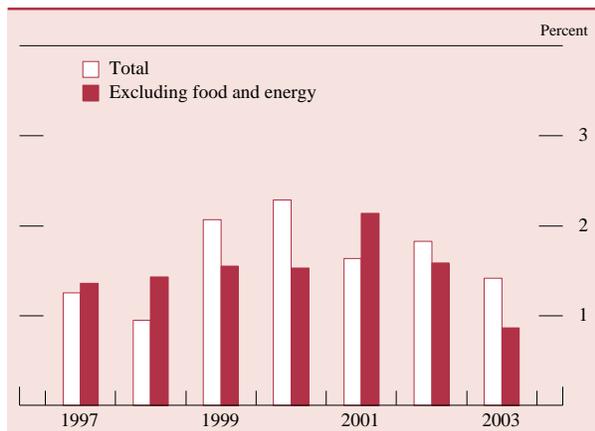
monetary policy would remain on hold, even as the economy picked up steam. Although yields on Treasury coupon securities rose modestly on balance over the year, risk spreads on corporate debt narrowed to the point that yields on corporate issues declined. The low-interest-rate environment spurred considerable corporate bond issuance and generated a massive wave of mortgage refinancing activity by households. Equity markets began to rally when the uncertainty over the timing of military intervention in Iraq was resolved. The climb in stock prices continued for the rest of the year, driven by improving corporate earnings reports and growing optimism about the prospects for the economy. At the same time, with economic conditions abroad improving and with concerns about the financing burden of the U.S. current account deficit gaining increased attention in financial markets, the dollar fell appreciably on a trade-weighted basis.

The Household Sector

Consumer Spending

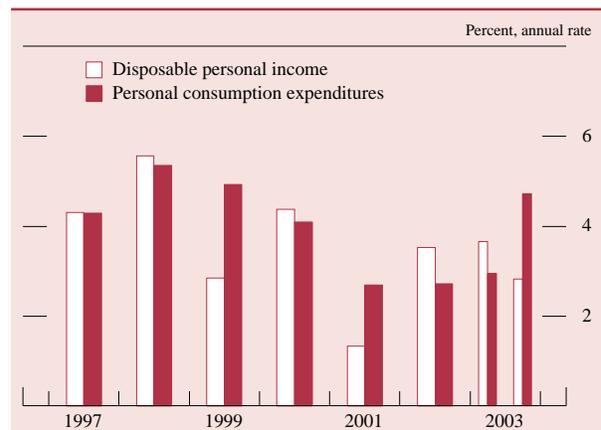
Early in 2003, consumer spending was still rising at about the same moderate pace as in 2001 and 2002. In the late spring and in the summer, however, households stepped up their spending sharply. As a result, in the second half of last year, real personal consumption expenditures rose at an annual rate of 4¾ percent after having increased at a rate of just under 3 percent in the first half. Although wage and salary earnings rose slowly during most of the year, the midyear reductions in tax rates and the advance of rebates to households eligible for child tax credits provided a substantial boost to after-tax income. In 2003, real disposable personal income increased 3¼ percent,

Change in PCE chain-type price index



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

Change in real income and consumption



## Personal saving rate



NOTE. The data are quarterly and extend through 2003:Q4.

after having risen 3½ percent in 2002. Low interest rates provided additional impetus to household spending by reducing borrowing costs for new purchases of houses and durable goods; they also indirectly stimulated spending by facilitating an enormous amount of mortgage refinancing.

The personal saving rate has fluctuated within a fairly narrow range around 2 percent over the past three years. Although households continued to see the value of their homes appreciate over this period, they also were adjusting to the substantial drop in equity wealth that occurred after the peak in the stock market in 2000. By itself, a fall in the ratio of household wealth to income of the magnitude that households experienced between 2000 and 2002 might have triggered a noticeable increase in the personal saving rate. However, in this case, the tendency for households to save more as their wealth

## Wealth-to-income ratio



NOTE. The data are quarterly and extend through 2003:Q3. The wealth-to-income ratio is the ratio of household net worth to disposable personal income.

declines appears to have been tempered in part by their willingness to take advantage of the attractive pricing and financing environment for consumer goods.

Real consumer expenditures for durable goods surged more than 11 percent in 2003. Sales of new motor vehicles remained brisk as many consumers responded to the low financing rates and various incentive deals that manufacturers offered throughout the year. Falling prices also made electronic equipment attractive to consumers, and spending on home furnishings likely received a boost from the strength of home sales. Altogether, real outlays for furniture and household equipment jumped 13½ percent in 2003.

In contrast, real consumer expenditures on non-durable goods and on services continued to rise at a moderate pace, on balance, last year. Outlays for food and apparel increased a bit faster than in 2002, and the steady uptrend in spending for medical services was well maintained. However, consumers responded to the higher cost of energy by cutting back their real spending on gasoline, fuel oil, and natural gas and electricity services.

Consumer confidence was shaken temporarily early in 2003 by concerns about the consequences of a war in Iraq, but it snapped back in the spring. Toward year-end, sentiment appeared to brighten more as households saw their current financial conditions improve and gained confidence that business conditions would be better during the year ahead. Those positive views became more widely held in January, and the index of consumer sentiment prepared by the Michigan Survey Research Center (SRC) reached its highest level in three years.

## Consumer sentiment



NOTE. The data are monthly and extend through January 2004.  
SOURCE. University of Michigan Survey Research Center and The Conference Board.

## Residential Investment

Housing activity was robust for a second consecutive year in 2003. After having risen 7 percent in 2002, real expenditures on residential construction jumped more than 10 percent in 2003. These gains were fueled importantly by the lowest levels of mortgage interest rates in more than forty years, which, according to the Michigan SRC's survey of consumer sentiment, buoyed consumer attitudes toward homebuying throughout the year. The average rate on thirty-year fixed-rate mortgages dropped sharply during the first half of 2003 and reached a low of 5¼ percent in June. Although the thirty-year rate subsequently firmed somewhat, it remained below 6 percent, on average, in the second half of last year.

Construction of new single-family homes accelerated during 2003, and for the year as a whole, starts averaged 1.5 million units, an increase of 10 percent compared with the level in 2002. Sales of both new and existing single-family homes also picked up sharply further last year. The brisk demand for homes was accompanied by rapid increases in the average price paid for them. The average price paid for new homes rose 10 percent over the four quarters of 2003, and the average price of existing homes was up 7¾ percent over the same period. However, house price inflation was lower after adjusting for shifts in the composition of transactions toward more expensive homes. The constant-quality price index for new homes, which eliminates the influence of changes in their amenities and their geographic distribution, increased 4¾ percent over the four quarters of 2003—down from an increase of 6 percent during 2002. The year-over-year increase in Freddie Mac's index of the prices paid in repeat sales of existing homes stood at 5½ percent as of the third quarter of

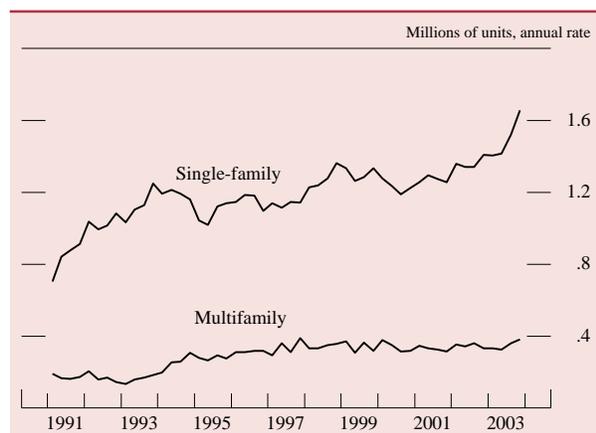
2003, compared with a rise of 7¼ percent as of the third quarter of 2002.

Starts in the multifamily sector totaled 350,000 units in 2003, a pace little changed from that of the past several years. Vacancy rates for these units rose and rents fell during the year, but falling mortgage rates apparently helped to maintain building activity.

## Household Finance

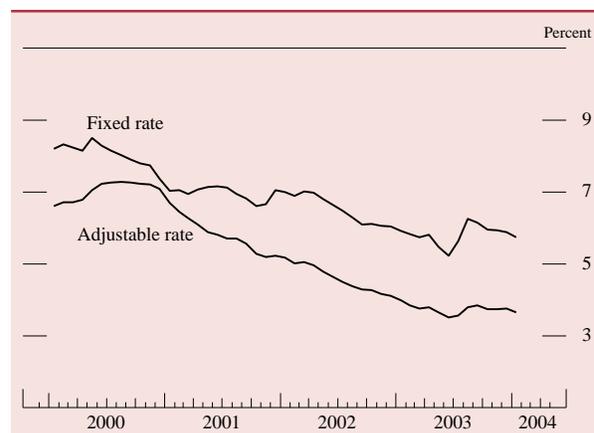
Household debt increased 10¾ percent last year, in large part because of the surge in mortgage borrowing induced by record-low mortgage interest rates. Refinancing activity was torrid in the first half of the year, as mortgage rates declined. Some of the equity that households extracted from their homes during refinancings was apparently used to fund home improvements and to pay down higher-interest consumer debt. When mortgage rates rebounded in the second half of the year, mortgage borrowing slowed from the extremely rapid clip of the first half, but it remained brisk through year-end. Consumer credit increased at a pace of 5¼ percent in 2003, a little faster than a year earlier, as revolving credit picked up somewhat from the slow rise recorded in 2002. Despite the pickup in household borrowing, low interest rates kept the household debt-service and financial-obligation ratios—which gauge pre-committed expenditures relative to disposable income—at roughly the levels posted in 2002. Most measures of delinquencies on consumer loans and home mortgages changed little on net last year, and household bankruptcies held roughly steady near their elevated level in 2002.

### Private housing starts



NOTE. The data are quarterly and extend through 2003:Q4.

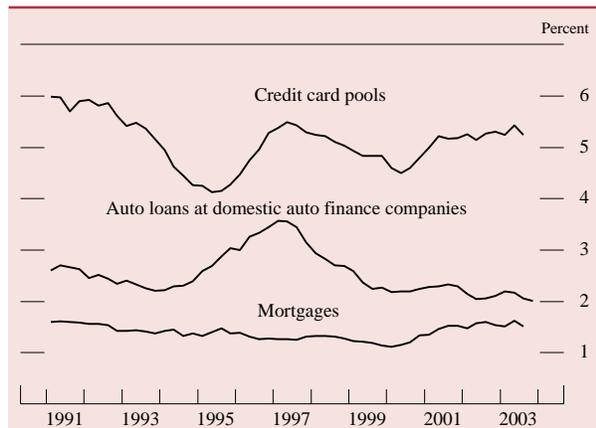
### Mortgage rates



NOTE. The data, which are monthly and extend through January 2004, are contract rates on thirty-year mortgages.

SOURCE. Federal Home Loan Mortgage Corporation.

## Delinquency rates on selected types of household loans



NOTE. The data are quarterly. The rates for credit card pools and mortgages extend through 2003:Q3; the rate for auto loans extends through 2003:Q4.

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

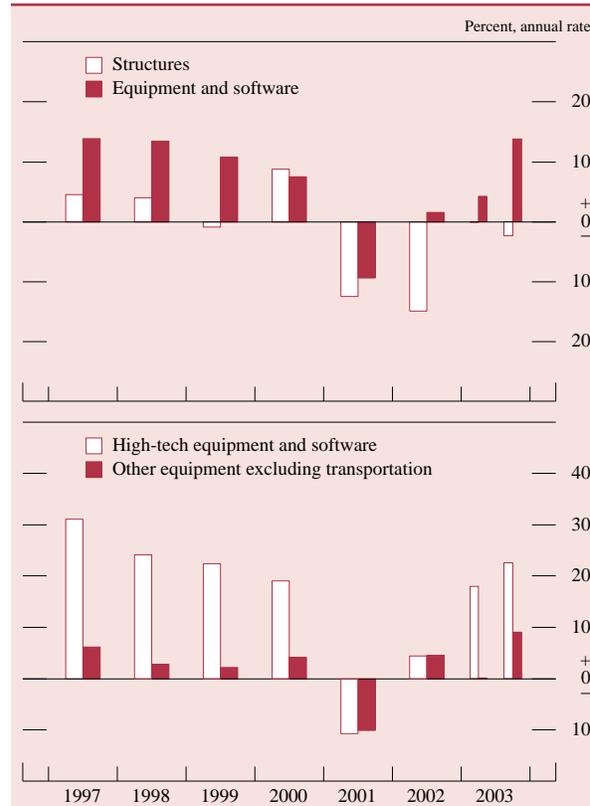
Even with the rapid expansion in debt, net worth of the household sector increased as the value of household assets rose noticeably. Stock prices were boosted by the rise in corporate earnings and the ebbing of uncertainty about future economic growth. Households directed substantial flows into stock mutual funds in the third and fourth quarters despite highly publicized scandals in the mutual fund industry. Although the companies directly implicated in wrongdoing experienced heavy outflows from their funds, most of these withdrawals apparently were transferred to other mutual funds with little effect on the industry as a whole. A considerable rise in real estate wealth further augmented household assets. Although prices of existing homes climbed more slowly than they had in the previous year, the rate of increase remained sizable. Overall, the advance in the value of household assets outstripped the accumulation of household debt by enough to boost the ratio of net worth to disposable income over the year.

### The Business Sector

#### Fixed Investment

Business spending on equipment and software was still sluggish at the beginning of 2003. However, it accelerated noticeably over the course of the year as profits and cash flow rebounded and as businesses gained confidence in the strength of the economic expansion and in the prospective payoffs from new investment. At the same time, business financing conditions were very favorable: Interest rates remained low, equity values rallied, and the enhanced

## Change in real business fixed investment



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

partial-expensing tax provision gave a special incentive for the purchase of new equipment and software. After having changed little in the first quarter of the year, real outlays for equipment and software increased at an annual rate of 11¾ percent over the remaining three quarters of the year.

Outlays for high-technology items—computers and peripherals, software, and communications equipment—which had risen a moderate 4½ percent in 2002, posted a significantly more robust increase of more than 20 percent in 2003. That gain contributed importantly to the pickup in overall business outlays for equipment and software and pushed the level of real high-tech outlays above the previous peak at the end of 2000. The increase in spending last year on computing equipment marked the sharpest gain since 1998, and investment in communications equipment, which had continued to contract in 2002 after having plummeted a year earlier, turned up markedly.

In contrast, the recovery in spending on non-high-tech equipment was, on balance, more muted, in part because outlays for transportation equipment continued to fall. The prolonged slump in business pur-

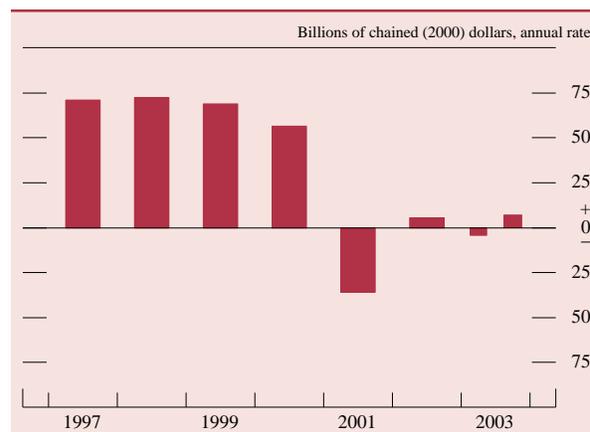
chases of new aircraft continued in 2003 as domestic air carriers grappled with overcapacity and high fixed costs. By the fourth quarter, real outlays for aircraft had dropped to their lowest level in ten years. In the market for heavy (class 8) trucks, sales were quite slow in early 2003 when businesses were concerned about the performance of models with engines that met new emission standards. But as potential buyers overcame those concerns, sales recovered. By the fourth quarter of 2003, sales of medium and heavy trucks had moved noticeably above the slow pace of 2001 and 2002. Apart from outlays for transportation equipment, investment in other types of non-high-tech equipment was, on balance, little changed during the first half of the year. Demand was strong for medical equipment, instruments, and mining and oil-field machinery, but sales of industrial equipment and farm and construction machinery were sluggish. In the second half of the year, however, the firming in business spending for non-high-tech items became more broadly based.

The steep downturn in nonresidential construction that began in 2001 moderated noticeably in 2003, although market conditions generally remained weak. After having contracted at an average annual rate of 13½ percent during 2001 and 2002, real expenditures for nonresidential construction slipped just 1¼ percent, on balance, during 2003. Spending on office buildings and manufacturing structures, which had dropped sharply over the preceding two years, fell again in 2003. The high office vacancy rates in many areas and low rates of factory utilization implied little need for new construction in these sectors even as economic activity firmed. Investment in communications infrastructure, where a glut of long-haul fiber-optic cable had developed earlier, also continued to shrink. In contrast, outlays for retail facilities, such as department stores and shopping malls, turned up last year, and the retrenchment in construction of new hotels and motels ended. In addition, investment in drilling and mining structures, which is strongly influenced by the price levels for crude oil and natural gas, increased noticeably in 2003.

### Inventory Investment

During 2002, businesses appeared to have addressed most of the inventory imbalances that had developed a year earlier. But the moderate pace of final demand during the first half of 2003 apparently restrained firms from embarking on a new round of inventory accumulation. Even though final sales picked up in the second half of the year, the restraint seemed to

### Change in real business inventories



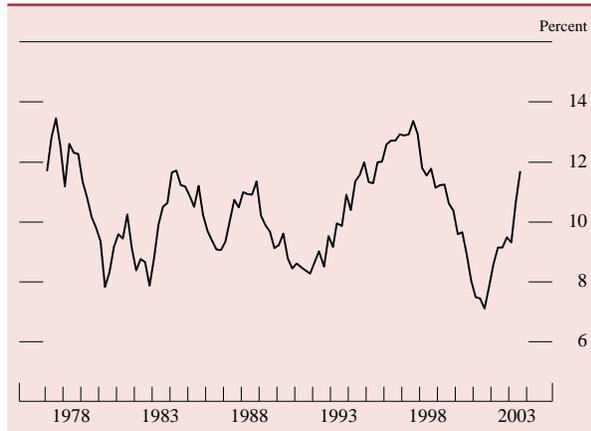
recede only gradually. Over the first three quarters of 2003, nonfarm businesses trimmed their inventories at an average annual rate of \$2¾ billion in constant-dollar terms, and the preliminary estimate for the final quarter of the year indicated only modest restocking. As a result, most firms appear to have ended the year with their inventories quite lean relative to sales, even after taking into account the downward trend in inventory–sales ratios that has accompanied the ongoing shift to improved inventory management. Motor vehicle dealers were an exception; their days’ supply of new vehicles moved higher on average for a second year in a row.

### Corporate Profits and Business Finance

Higher profits allowed many firms to finance capital spending with internal funds, and business debt rose only slightly faster than the depressed rate in 2002. Moreover, a paucity of cash-financed merger and acquisition activity further limited the need to issue debt. Gross equity issuance was extremely weak in the first half of the year but perked up in the latter half in response to the rally in equity prices. Nevertheless, for the year as a whole, firms extinguished more equity than they issued.

The pace of gross corporate bond issuance was moderate at the start of the year but shot up in late spring as firms took advantage of low bond yields to pay down short-term debt, to refund existing long-term debt, and to raise cash in anticipation of future spending. Bond issuance by investment-grade firms slowed after midyear as firms accumulated a substantial cushion of liquid assets and as interest rates on higher-quality debt backed up. However, issuance by speculative-grade firms continued apace, with the

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



NOTE. The data are quarterly and extend through 2003:Q3. Profits are from domestic operations of nonfinancial corporations, with inventory valuation and capital consumption adjustments.

yields on their debt continuing to decline dramatically presumably because of investors' increased optimism about the economic outlook and greater willingness to take on risk. The sum of bank loans and commercial paper outstanding, which represent the major components of short-term business debt, contracted throughout the year. In large part, this decline reflected ongoing substitution toward bond financing, but it also was driven by the softness of fixed investment early in the year and the liquidation of inventories over much of the year.

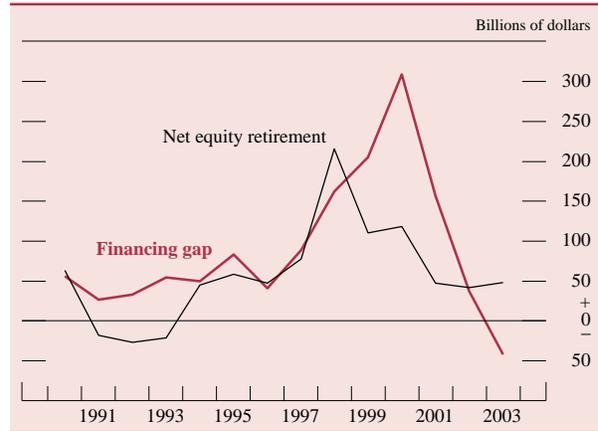
Respondents to the Senior Loan Officer Opinion Survey on Bank Lending Practices noted that terms and standards on business loans were tightened during the first half of the year but that both had been

**Corporate bond yields**



NOTE. The data are monthly averages and extend through January 2004. The AA rate is calculated from bonds in the Merrill Lynch AA index with a remaining maturity of seven to ten years. The high-yield rate is the yield on the Merrill Lynch 175 high-yield index.

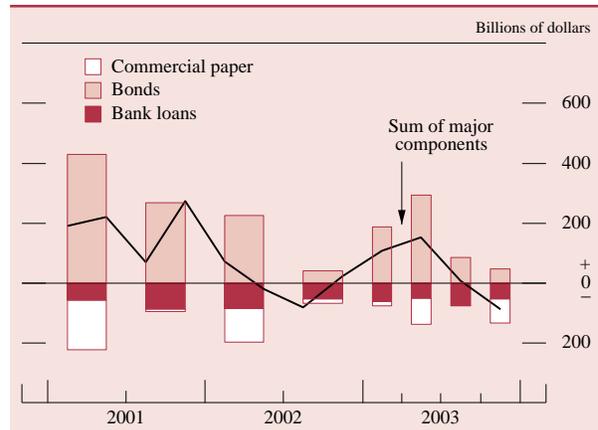
**Financing gap and net equity retirement at nonfinancial corporations**



NOTE. The data are annual; 2003 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.

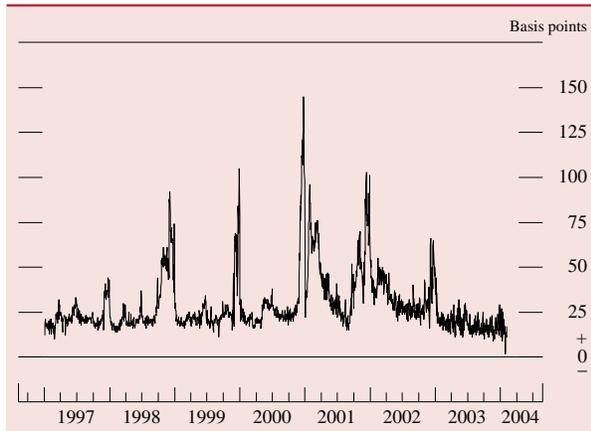
eased considerably by year-end. They also reported that demand for business loans was quite weak for much of the year. However, despite the fact that outstanding levels of business loans continued to decline, survey responses in the last quarter of the year indicated that demand for loans had begun to stabilize. Many banks cited customers' increased investment and inventory spending as factors helping to generate the increase in loan demand toward the end of the year. The apparent divergence between survey responses and data on actual loan volumes may suggest that demand for lines of credit has increased but that these lines have not yet been

**Major components of net business financing**



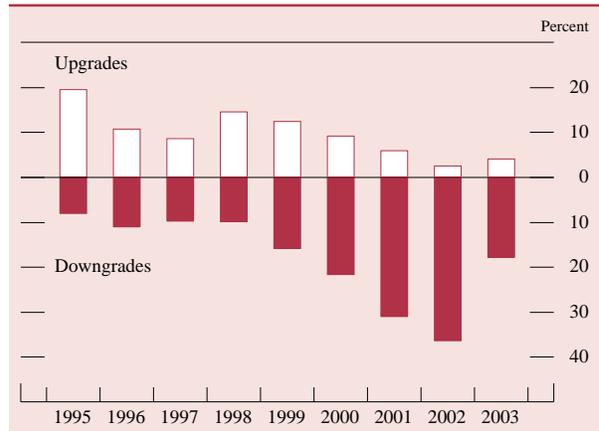
NOTE. Seasonally adjusted annual rate for nonfinancial corporate business. The data for the sum of major components are quarterly. The data for 2003:Q4 are estimated.

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



NOTE. The data are daily and extend through February 4, 2004. The series shown is the difference between the rate on A2/P2 nonfinancial commercial paper and the AA rate.

Ratings changes of nonfinancial corporate bonds



NOTE. For a given year, the percentage is calculated as the par value of bonds that were upgraded or downgraded in that year and outstanding in the fourth quarter of the previous year divided by the par value of the outstanding bonds of all nonfinancial corporations in that quarter.

SOURCE. Moody's Investors Service.

drawn. In other short-term financing developments, nonfinancial firms that issued commercial paper in 2003 found a very receptive market, in large part because of the scarcity of outstanding issues. Many of the riskiest borrowers had exited the market in 2002, and remaining issuers improved their attractiveness to investors by continuing to restructure their balance sheets.

Gross equity issuance rose over the course of 2003 as the economic outlook strengthened and stock prices moved higher. The market for initial public offerings continued to languish in the first half of the year but showed signs of life by the end of the summer. The volume of seasoned offerings also

picked up in the second half of the year. On the other side of the ledger, merger and acquisition activity again extinguished shares in 2003, although only at a subdued pace. In addition, firms continued to retire a considerable volume of equity through share repurchases. For the year as a whole, net equity issuance was negative.

Corporate credit quality improved, on balance, over the year. Notably, the default rate on corporate bonds declined sharply, delinquency rates on commercial and industrial (C&I) loans at commercial banks turned down, and the pace of bond-rating downgrades slowed considerably. Low interest rates and the resulting restructuring of debt obligations toward longer terms also importantly contributed to

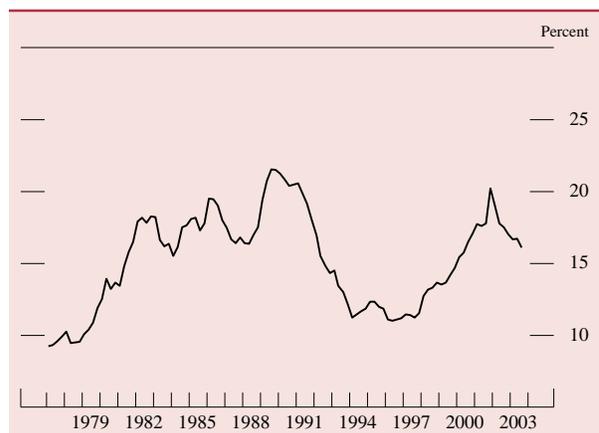
Default rate on outstanding bonds



NOTE. The default rate is monthly and extends through December 2003. 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.

SOURCE. Moody's Investors Service.

Net interest payments of nonfinancial corporations as a percent of cash flow



NOTE. The data are quarterly and extend through 2003:Q3.

SOURCE. Bureau of Economic Analysis.

improved business credit quality. Bank loan officers noted that the aggressive tightening of lending standards in earlier years was an important factor accounting for the lower delinquency and charge-off rates in recent quarters.

Commercial mortgage debt increased noticeably during most of 2003 despite persistently high vacancy rates, falling rents, and sluggish growth in construction expenditures. Low interest rates on this type of collateralized debt may have induced some corporate borrowers to tap the market to pay down more-costly unsecured debt. Delinquency rates on commercial mortgages generally remained low throughout 2003, and risk spreads were relatively narrow. Loan performance has held up well because of low carrying costs for property owners and because the outstanding loans generally had been structured to include a sizable equity contribution, which makes default less attractive to borrowers.

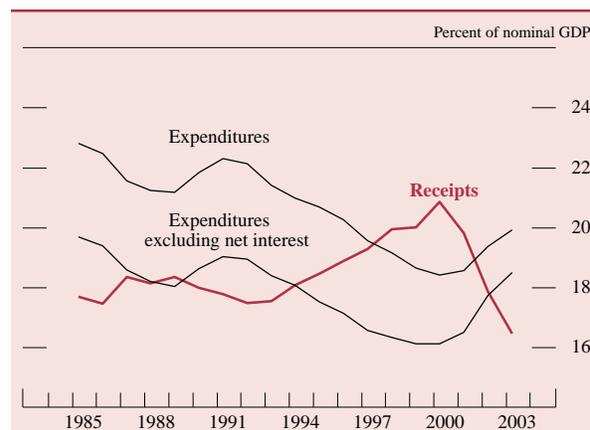
## The Government Sector

### Federal Government

The federal budget deficit continued to widen in fiscal year 2003 as a result of the slow increase in nominal incomes, outlays associated with the war in Iraq, and legislative actions that reduced taxes and boosted spending. The deficit in the unified budget totaled \$375 billion, up substantially from the deficit of \$158 billion recorded in fiscal 2002. The Congressional Budget Office is projecting that the unified federal deficit will increase further in fiscal 2004, to more than \$475 billion.

Federal receipts have fallen in each of the past three years; the drop of nearly 4 percent in fiscal 2003 brought the ratio of receipts to GDP to 16½ percent, 2 percentage points below the average for the past thirty years. About half of the decrease in receipts last year was a consequence of legislation that shifted due dates for corporate payments between fiscal years. In addition, personal income tax collections dropped sharply because of the slow rise in nominal wages and salaries, diminished capital gains realizations in 2002, and the tax cuts enacted under the Jobs and Growth Tax Relief Reconciliation Act of 2003. The act advanced refund checks to households eligible for the 2003 increment to the child tax credit and resulted in lower withholding schedules for individual taxpayers. The act also expanded the partial-expensing incentive for businesses, but because corporate profits accelerated sharply last year, corporate

### Federal receipts and expenditures

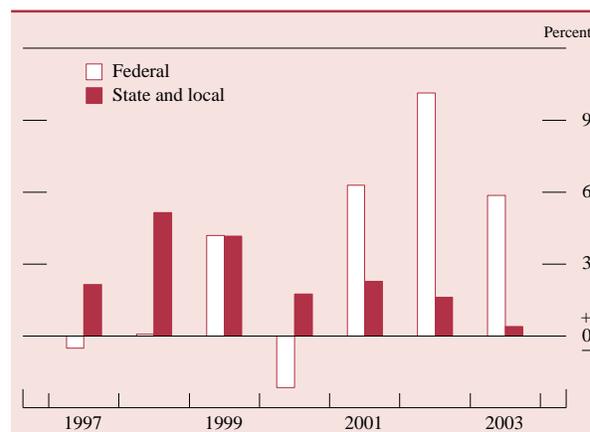


NOTE: The budget data are from the unified budget and are for fiscal years (October through September); GDP is for the year ending in Q3.

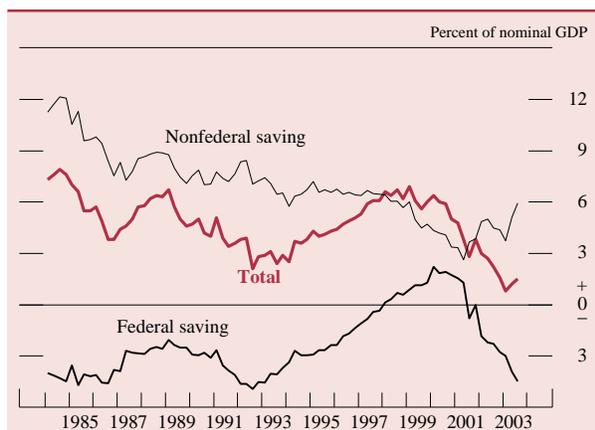
tax receipts rose appreciably after adjusting for the shifts in the timing of payments.

At the same time, federal outlays other than for interest expense rose rapidly for the second consecutive year in fiscal 2003; these outlays increased about 9 percent after having risen 11 percent in fiscal 2002. Spurred by operations in Iraq, defense spending soared again, and outlays for homeland security rose further. Spending for income support, such as unemployment insurance, food stamps, and child credits under the earned income tax credit program, also posted a sizable increase. The ongoing rise in the cost and utilization of medical services continued to push up spending for Medicare and Medicaid. Overall, real federal consumption and investment (the measure of federal spending that is included in real GDP) increased 6 percent over the four quarters of 2003, after having risen 10 percent a year earlier.

### Change in real government expenditures on consumption and investment



### Net national saving



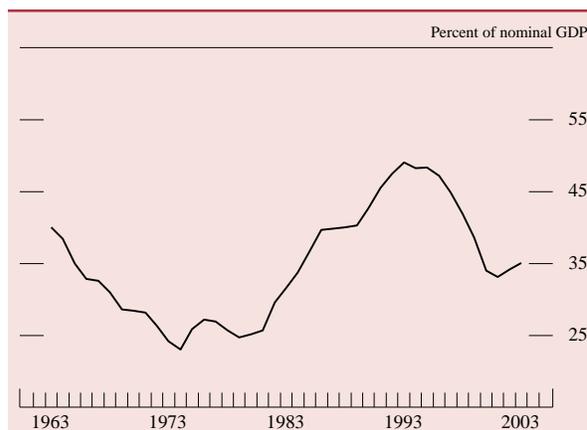
NOTE. The data are quarterly and extend through 2003:Q3. Nonfederal saving is the sum of personal and net business saving and the net saving of state and local governments.

The federal government had contributed increasingly to national saving in the late 1990s and 2000 as budget deficits gave way to accumulating surpluses. However, with the swing back to large deficits in recent years, the federal government has again become a drain on national saving. Using the accounting practices followed in the national income and product accounts (NIPA), gross federal saving as a percent of GDP dropped sharply in late 2001 and has trended down since then; the drop contributed to a decline in overall gross national saving as a percent of GDP from 18 percent in calendar year 2000 to 13 percent, on average, in the first three quarters of 2003. Federal saving net of estimated depreciation fell from its recent peak of 2½ percent of GDP in 2000 to negative 4 percent of GDP, on average, in the first three quarters of 2003. As a result, despite a noticeable pickup in saving from domestic nonfederal sources, overall net national saving, which is an important determinant of private capital formation, fell to less than 1½ percent of GDP, on average, in the first three quarters of 2003, compared with a recent high of 6½ percent of GDP in 1998.

### Federal Borrowing

The Treasury ramped up borrowing in 2003 in response to the sharply widening federal budget deficit, and federal debt held by the public as a percent of nominal GDP increased for a second year in a row after having trended down over the previous decade. As had been the case in 2002, the Treasury was forced to resort temporarily to accounting devices in the spring of 2003 when the statutory debt ceiling

### Federal government debt held by the public



NOTE. Through 2002, 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 2003:Q3. Excludes securities held as investments of federal government accounts.

became a constraint, but debt markets were not disrupted noticeably. In May, the Congress raised the debt ceiling from \$6.4 trillion to \$7.4 trillion. With large deficits expected to persist, the Treasury made a number of adjustments to its regular borrowing program, including reintroducing the three-year note, increasing to monthly the frequency of five-year note auctions, reopening the ten-year note in the month following each new quarterly offering, and adding another auction of ten-year inflation-indexed debt. As a result of these changes, the average maturity of outstanding Treasury debt, which had reached its lowest level in decades, began to rise in the latter half of 2003.

### State and Local Governments

State and local governments faced another difficult year in 2003. Tax receipts on income and sales continued to be restrained by the subdued performance of the economy. Despite further efforts to rein in spending, the sector's aggregate net saving, as measured in the NIPA, reached a low of negative \$40 billion (at an annual rate), or negative 0.4 percent of GDP, in the first quarter of the year. Most of these jurisdictions are subject to balanced-budget requirements and other rules that require them to respond to fiscal imbalances. Thus, in addition to reducing operating expenses, governments drew on reserves, issued bonds, sold assets, and made various one-time adjustments in the timing of payments to balance their books. In recent years, many have also increased taxes and fees, thereby reversing the trend toward lower taxes that prevailed during the late 1990s.

## State and local government net saving



NOTE. The data, which are quarterly, are on a national income and product account basis and extend through 2003:Q3.

Recent indications are that the fiscal stress in this sector is beginning to ease. The improvement reflects a noticeable upturn in tax collections in recent quarters while restraint on operating expenditures largely remains in place. On a NIPA basis, real spending on compensation and on goods and services purchased by state and local governments was little changed in the second half of 2003, as it was over the preceding year. However, investment in infrastructure, most of which is funded in the capital markets, accelerated in the second half of 2003. As of the third quarter of 2003, state and local net saving had moved back into positive territory.

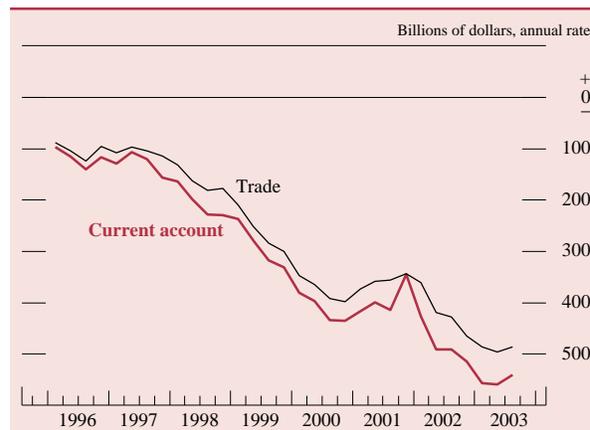
## State and Local Government Borrowing

Gross issuance of debt by state and local governments was quite robust last year. Weak tax receipts from a sluggish economy, significant demands for infrastructure spending, and low interest rates all contributed to the heavy pace of borrowing. Borrowing was strongest in the second quarter of the year, as governments took advantage of the extraordinarily low longer-term rates to fund capital expenditures and to advance refund existing higher-cost debt. Because of the financial stresses facing these governments, the credit ratings of several states, most notably California, were lowered last year. Although bond downgrades outnumbered upgrades for the sector as a whole, the imbalance between the two was smaller than it was in 2002.

## The External Sector

Over the first three quarters of 2003, the U.S. current account deficit widened relative to the comparable

## U.S. trade and current account balances



NOTE. The data are quarterly and extend through 2003:Q3.

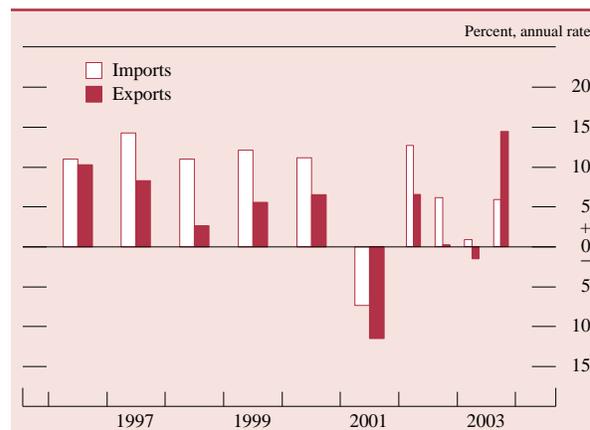
period in 2002, a move largely reflecting developments in the deficit on trade in goods and services. Net investment income rose over the same period, as receipts from abroad increased and payments to foreign investors in the United States declined.

## International Trade

The trade deficit widened considerably in the first half of 2003 but narrowed slightly in the third quarter, as the value of exports rebounded in response to strengthening foreign economic activity and the depreciation of the dollar. Available trade data through November suggest that the trade deficit narrowed further in the fourth quarter, as an additional strong increase in exports outweighed an increase in imports.

Real exports of goods and services increased about 6 percent in 2003. Exports of services rose about

## Change in real imports and exports of goods and services

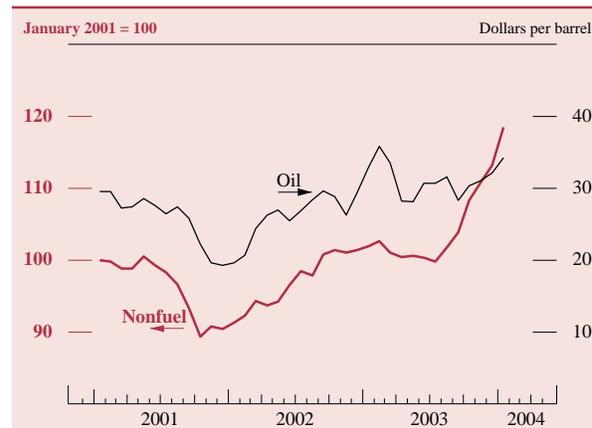


5 percent. They were held down early in the year by a drop in receipts from foreign travelers, owing to the effects of the SARS (severe acute respiratory syndrome) epidemic and the war in Iraq; services exports rebounded strongly later in the year as those concerns receded. Exports of goods rose about 6¾ percent over the course of the year—considerably faster than in 2002. Exports increased in all major end-use categories of trade, with particularly strong gains in capital goods and consumer goods. Reflecting the global recovery in the high-tech sector, exports of computers and semiconductors picked up markedly in 2003, particularly in the second half. By geographic area, exports of goods increased to Western Europe, Canada, and, particularly, to developing countries in East Asia—a region where economic activity expanded at a rapid pace last year. Prices of exported goods rose in 2003, with prices of agricultural exports recording particularly large increases. In response to poor crops and strong demand, prices for cotton and soybeans increased sharply. For beef, disruptions in supply led to notably higher prices through much of 2003. Beef prices, however, fell back in late December after a case of mad cow disease was discovered in the state of Washington and most countries imposed bans on beef imports from the United States.

Real imports of goods and services rose about 3½ percent in 2003. Imports of services fell in the first half of the year but bounced back in the second half, as concerns about the SARS epidemic and the war in Iraq came and went; for the year as a whole, real imports of services were about unchanged from the previous year. Real imports of goods expanded about 4 percent in response to the strengthening of U.S. demand, but the pattern was choppy, with large gains in the second and fourth quarters partially offset by declines in the first and third. Despite a surge in the second quarter, the volume of oil imports increased modestly, on balance, over the course of the year. Real non-oil imports were up about 4½ percent, with the largest increases in capital goods and consumer goods. Imports of computers posted solid gains, whereas imports of semiconductors were flat.

Despite a substantial decline in the value of the dollar, the prices of imported non-oil goods rose only moderately in 2003. By category, the prices of consumer goods were unchanged last year, and prices of capital goods excluding aircraft, computers, and semiconductors increased only a little more than 1 percent. Price increases were larger for industrial supplies. The price of imported natural gas spiked in March and rose again late in the year; these fluctuations were large enough to show through to the

### Prices of oil and of nonfuel commodities



NOTE: The data are monthly and extend through January 2004. 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.

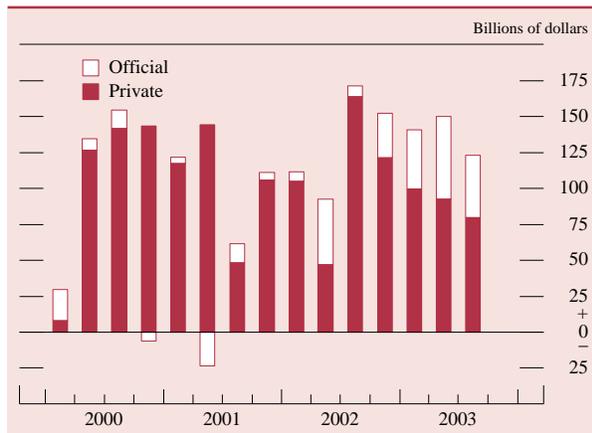
overall price index for imported goods. At year-end, prices of industrial metals rose sharply, with the spot price of copper reaching the highest level in six and one-half years. The strength in metals and other commodity prices has been attributed, at least in part, to depreciation of the dollar and strong global demand, particularly from China.

In 2003, the spot price of West Texas intermediate (WTI) crude oil averaged more than \$31 per barrel—the highest annual average since the early 1980s. The spot price of oil began to rise at the end of 2002 when ethnic unrest in Nigeria and a nationwide strike in Venezuela sharply limited oil supplies from those two countries. In the first quarter of 2003, geopolitical uncertainty in the period leading up to the war in Iraq also added upward pressure on oil prices. On March 12, the spot price of WTI closed at \$37.83 per barrel, the highest level since the Gulf War in 1990. When the main Iraqi oil fields had been secured and it became apparent that the risks to oil supplies had subsided, the spot price of WTI fell sharply to a low of \$25.23 per barrel on April 29. However, oil prices began rising again when, because of difficult security conditions, the recovery of oil exports from Iraq was slower than expected. Prices also were boosted in September by the surprise reduction in OPEC's production target. In the fourth quarter of 2003 and early 2004, strengthening economic activity, falling oil inventories, and the continued depreciation of the dollar contributed to a further run-up in oil prices.

### The Financial Account

The financing counterpart to the current account deficit experienced a sizable shift in 2003, as net private

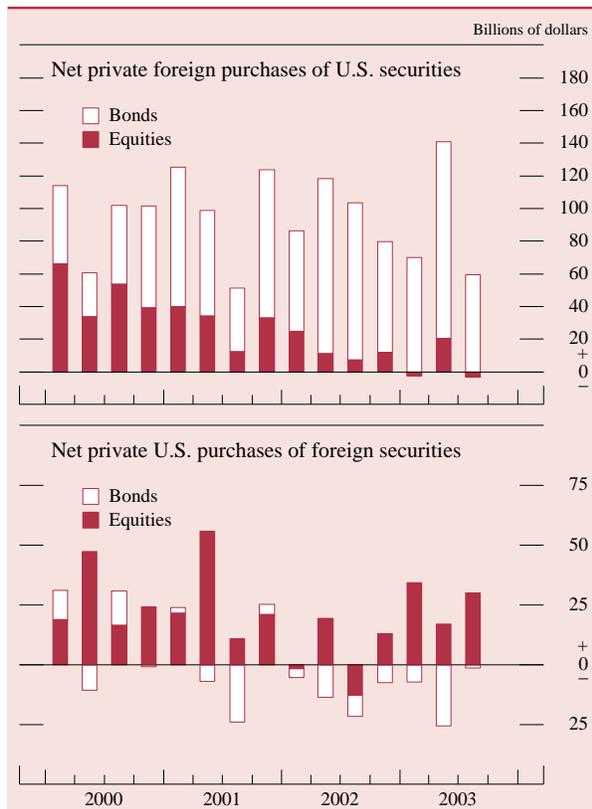
U.S. net financial inflows



SOURCE: Department of Commerce.

inflows fell while foreign official inflows increased. Private foreign purchases of U.S. securities were at an annual rate of about \$350 billion through November, about \$50 billion lower than in the previous year. Private foreign purchases of U.S. equities continued to recede, and, although the level of bond purchases was little changed in the aggregate, foreign purchases

U.S. net international securities transactions



SOURCE: Department of Commerce and the Federal Reserve Board.

shifted somewhat away from agency bonds and toward corporate bonds. Over the same period, purchases by private U.S. investors of foreign securities increased nearly \$80 billion. Accordingly, net inflows through private securities transactions decreased markedly. In contrast, foreign official purchases of U.S. assets surged to record levels in 2003, with the accumulation of dollar reserves particularly high in China and Japan.

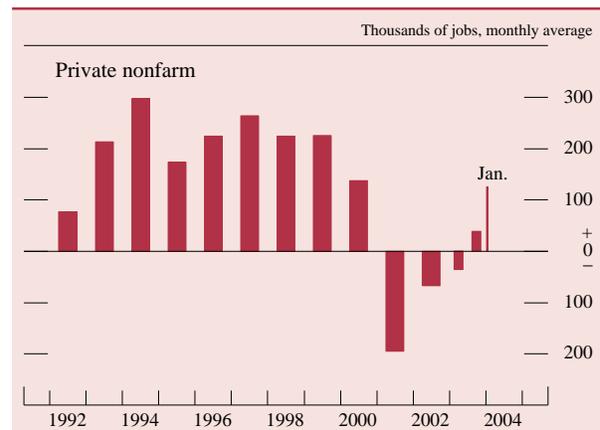
Compared with the pace in 2002, foreign direct investment in the United States increased, as merger activity picked up and corporate profits improved. U.S. direct investment abroad held relatively steady at a high level that was largely the result of continued retained earnings. On net, foreign direct investment outflows fell about \$50 billion through the first three quarters of 2003.

The Labor Market

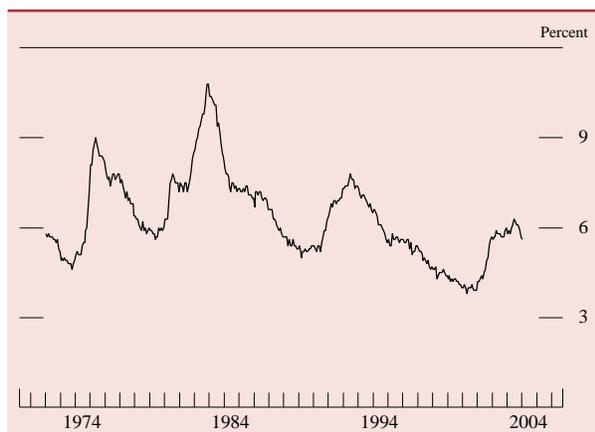
Employment and Unemployment

With economic activity still sluggish during the first half of 2003, the labor market continued to weaken. Over the first eight months of the year, private nonfarm payroll employment fell, on average, more than 35,000 per month, extending the prolonged period of cutbacks that began in early 2001. The civilian unemployment rate, which had hovered around 5¾ percent for much of 2002, moved up to 6¼ percent by June. However, by late in the summer, the labor market began to recover slowly. Declines in private payrolls gave way to moderate increases in employment; over the five months ending in January, private nonfarm establishments added, on average, about 85,000 jobs per month. By January, the unemployment rate moved back down to 5.6 percent.

Net change in payroll employment



### Civilian unemployment rate



NOTE. The data are monthly and extend through January 2004.

During the late summer and early fall, prospects for business sales and production brightened, and firms began to lay off fewer workers. Initial claims for unemployment insurance dropped back, and the monthly Current Population Survey (CPS) of households reported a decline in the number of workers who had lost their last job. However, for many unemployed workers, jobs continued to be difficult to find, and the number of unemployed who had been out of work for twenty-seven weeks or more remained persistently high. The labor force participation rate, which tends to be sensitive to workers' perceptions of the strength of labor demand, drifted lower. Although the CPS indicated a somewhat greater improvement in employment than the payroll report—even after adjusting for conceptual differences between the two measures—the increase in household employment lagged the rise in the working-age population, and the ratio of employment to population fell further during 2003.

The modest upturn in private payroll employment that began in September was marked by a step-up in hiring at businesses supplying professional, business, and education services, and medical services continued to add jobs. Employment in both the construction industry and the real estate industry rose further, although the number of jobs in related financial services dropped back a bit as mortgage refinancing activity slackened. At the same time, although manufacturers were still laying off workers, the monthly declines in factory employment became smaller and less widespread than earlier. Employment stabilized in many industries that produce durable goods, such as metals, furniture, and wood products, as well as in a number of related industries that store and transport goods. In several other areas, employment remained

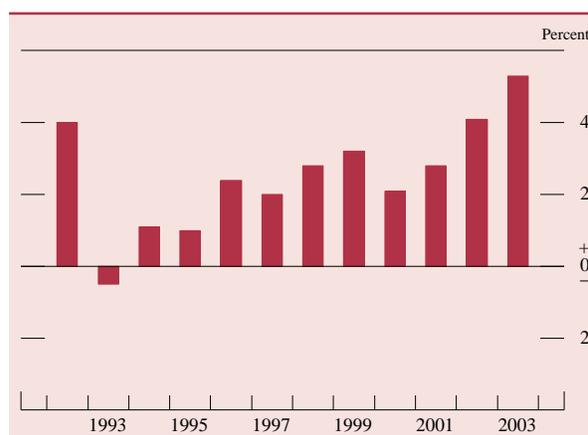
weak. Manufacturers of nondurables, such as chemicals, paper, apparel, and textiles, continued to cut jobs. Employment in retail trade remained, on net, little changed.

### Productivity and Labor Costs

Business efforts to increase efficiency and control costs led to another impressive gain in labor productivity last year. Output per hour in the nonfarm business sector surged 5¼ percent in 2003 after having risen a robust 4 percent in 2002 and 2¾ percent in 2001. What is particularly remarkable about this period is that productivity did not decelerate significantly when output declined in 2001, and it posted persistently strong gains while the recovery in aggregate demand was sluggish. Typically, the outsized increases in productivity that have occurred during cyclical recoveries have followed a period of declines or very weak increases in productivity during the recession and have been associated with rebounds in economic activity that were stronger than has been the case, until recently, in this expansion.

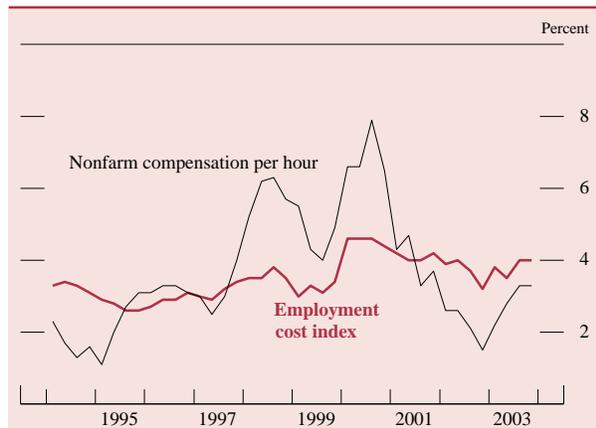
On balance, since the business cycle peak in early 2001, output per hour has risen at an average annual rate of 4 percent—noticeably above the average increase of 2½ percent that prevailed between 1996 and 2000. In the earlier period, an expansion of the capital stock was an important element in boosting the efficiency of workers and their firms; that impetus to productivity has weakened in the recent period as a result of the steep cutbacks in business investment in 2001 and 2002. Instead, the recent gains appear to be grounded in organizational changes and innovations in the use of existing resources—which are referred to as multifactor productivity. The persistence of a

### Change in output per hour



NOTE. Nonfarm business sector.

## Measures of change in hourly compensation



NOTE. The data are quarterly and extend through 2003: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.

rapid rise in multifactor productivity in recent years, along with signs of a pickup in capital spending, suggests that part of the step-up in the rate of increase of labor productivity may be sustained for some time.

In 2003, the employment cost index (ECI) for private nonfarm businesses, which is based on a survey conducted quarterly by the Bureau of Labor Statistics, rose 4 percent—about  $\frac{3}{4}$  percentage point more than the increase in 2002. Compensation per hour in the nonfarm business sector, which is based on data constructed for the NIPA, is estimated to have increased  $3\frac{1}{4}$  percent in 2003, up from  $1\frac{1}{2}$  percent in 2002. In recent years, the NIPA-derived series has shown much wider fluctuations in hourly compensation than the ECI, in part because it includes the value of stock option exercises, which are excluded from the ECI. The value of options exercised shot up in 2000 and then dropped over the next two years.

Most of the acceleration in hourly compensation in 2003 was the result of larger increases in the costs of employee benefits. The ECI for wages and salaries rose 3 percent—up slightly from the pace in 2002 but still well below the rates of increase in the preceding six years. Wage gains last year likely were restrained by persistent slack in the demand for labor as well as by the pressure on employers to control overall labor costs in the face of the rapidly rising cost of benefits. Employer costs for benefits, which had risen  $4\frac{3}{4}$  percent in 2002, climbed another  $6\frac{1}{2}$  percent in 2003. The cost of health insurance as measured by the ECI has been moving up at close to a double-digit rate for three consecutive years. In addition, in late 2002 and early 2003, employers needed to substantially boost their contributions to defined-benefit retirement

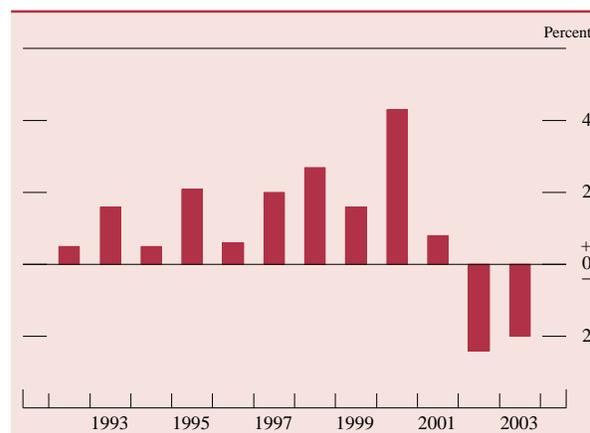
plans to cover the declines in the market value of plan assets.

## Prices

Headline consumer price inflation in 2003 was maintained by an acceleration in food prices and another sizable increase in energy prices, but core rates of inflation fell for a second year. Although the strong upturn in economic activity in the second half of last year began to reduce unemployment and to boost industrial utilization rates, considerable slack in labor and product markets continued to restrain inflation throughout the year. A further moderation in the costs of production also helped to check inflation: As a result of another rapid rise in productivity, businesses saw their unit labor costs decline in 2003 for a second consecutive year. In contrast, prices for imported goods excluding petroleum, computers, and semiconductors increased at about the same rate as prices more generally; between 1996 and 2002, these import prices fell relative to overall prices for personal consumption expenditures (PCE). The chain-type price index for PCE excluding food and energy rose just under 1 percent in 2003, about  $\frac{3}{4}$  percentage point less than in 2002. A broader measure of inflation, the chain-type price index for GDP, increased  $1\frac{1}{2}$  percent in 2003, the same slow pace as in 2002. Both measures of inflation were roughly a percentage point lower than in 2001.

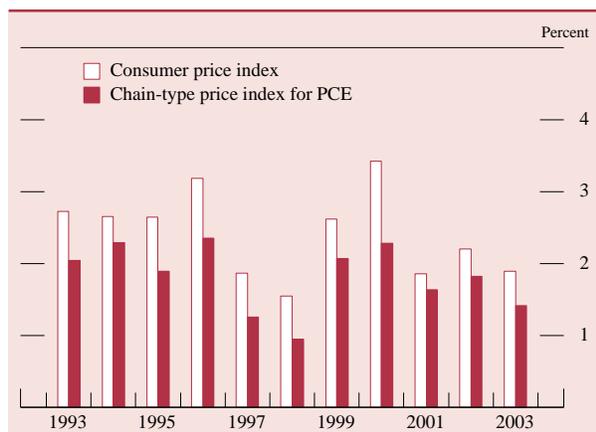
Consumer energy prices fluctuated widely over the four quarters of 2003, and the PCE index for energy was up  $7\frac{1}{4}$  percent over the period. In the first quarter of the year, the combination of a further rise in the cost of crude oil, increased wholesale margins for gasoline, and unusually tight supplies of natural

## Change in unit labor costs



NOTE. Nonfarm business sector.

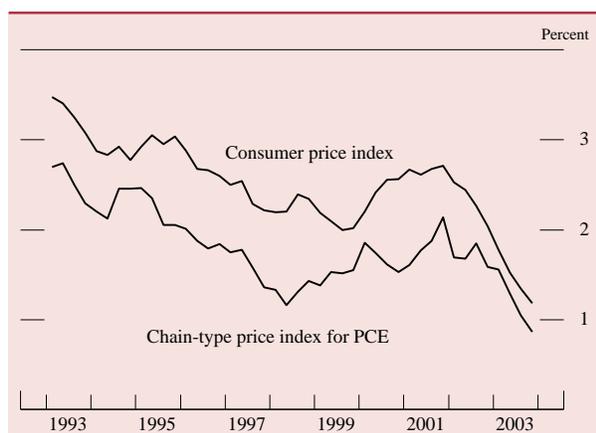
## Change in consumer prices



gas pushed up consumer energy prices sharply. Although the prices of petroleum-based products turned down when the price of crude oil fell back in March, a number of supply disruptions in late summer resulted in another temporary run-up in the retail price of gasoline. In the spring, the price of natural gas began to ease as supplies improved, but it remained high relative to the level in recent years. Electricity prices also moved up during 2003, in part because of the higher input costs of natural gas. In January 2004, a cold wave in the Northeast, together with the rise in the price of crude oil since early December, once again led to spikes in the prices of gasoline and natural gas.

The PCE price index for food and beverages increased  $2\frac{3}{4}$  percent in 2003 after having risen just  $1\frac{1}{4}$  percent a year earlier. Much of the acceleration can be traced to strong demand for farm products, but prices paid by consumers for food away from home—which depend much more heavily on the cost of labor

## Change in consumer prices excluding food and energy



NOTE. Change is over four quarters, and the data extend through 2003:Q4.

than on prices of food products—were up 3 percent in 2003, also somewhat more than overall consumer price inflation. Poor harvests abroad, especially in Europe, contributed importantly to the heightened demand for U.S. farm products. Thus, despite a bumper crop of corn and some other grains in the United States, world stocks were tight and prices remained high. In addition, the U.S. soybean crop was crimped by late-season heat and dryness, which further tightened world supplies. Concerns about the cases of mad cow disease that were identified in herds in Japan and Canada supported strong domestic and export demand for U.S. beef for most of last year while supplies edged down. But, at year-end, when a case of mad cow disease was discovered in a domestic herd, export demand for U.S. beef plunged and drove the price of live cattle down sharply. A portion of the drop in cattle prices likely will show through to consumer prices for beef early this year.

The decline in core inflation in 2003 was broadly based. Prices of core consumer goods fell somewhat faster than a year earlier; the declines were led by larger cuts in prices of apparel, motor vehicles, electronic equipment, and a variety of other durable goods. At the same time, prices of non-energy services rose less rapidly. The deceleration in core consumer prices measured by the CPI is somewhat greater than that measured by the PCE index. In each index, the costs of housing services to tenants and owners rose less in 2003 than in 2002, but because these costs receive a larger weight in the CPI, their slowing contributed a greater amount to the CPI's deceleration. In addition, the different measurement of the prices of medical services in the two series contributed to the smaller deceleration in non-energy services in the PCE. The medical services component of the CPI, which measures out-of-pocket expenses paid by consumers, increased 4 percent in 2003, down from  $5\frac{1}{2}$  percent a year earlier. Alternatively, the PCE for medical services is a broader measure that uses producer price indexes (PPI) to capture the costs of services provided by hospitals and doctors; it continued to increase more slowly than the CPI for medical services last year,  $3\frac{1}{4}$  percent, but it was up slightly from its increase of  $2\frac{1}{2}$  percent in 2002.

Survey measures of expected inflation were little changed, on balance, in 2003. According to the Federal Reserve Bank of Philadelphia's survey of professional forecasters, expectations for CPI inflation ten years ahead remained at  $2\frac{1}{2}$  percent last year. As measured by the Michigan Survey Research Center survey of households, median five- to ten-year inflation expectations, which averaged 3 percent in 2001, were steady at  $2\frac{3}{4}$  percent in 2003 for a second

## Alternative measures of price change

Percent

Price measure	2001	2002	2003
<i>Chain-type</i>			
Gross domestic product .....	2.4	1.4	1.5
Gross domestic purchases .....	1.6	1.7	1.6
Personal consumption expenditures .....	1.6	1.8	1.4
Excluding food and energy .....	2.1	1.6	.9
Chained CPI .....	1.5	1.8	1.4
Excluding food and energy .....	2.1	1.6	.6
<i>Fixed-weight</i>			
Consumer price index .....	1.8	2.2	1.9
Excluding food and energy .....	2.7	2.1	1.2

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.

consecutive year. Inflation compensation as measured by the spread between the yield on nominal Treasury securities and their indexed counterparts varied over a wide range in 2003, settling at just under 2½ percent at year-end. Shorter-term inflation expectations also posted some wide swings during 2003; year-ahead expectations in the Michigan SRC survey spiked early in the year with the sharp increase in energy prices and dipped briefly to an unusually low level at midyear as actual inflation eased in response to lower energy prices. However, year-ahead inflation expectations settled back to just over 2½ percent at the end of the year, about the same as at the end of 2002.

The PPI for crude materials excluding food and energy products, which had dropped 10 percent in 2001, rose 11¾ percent in 2002 and another 17½ percent in 2003. The upswing was driven by the pickup in demand associated with the acceleration in both domestic and worldwide industrial activity and by the pass-through of higher energy costs. Such wide cyclical swings in commodity prices have only a small effect on movements in the prices of intermediate and finished goods. At later stages of production and distribution, commodity costs represent only a small share of overall costs, and some portion of the change in commodity prices tends to be absorbed in firms' profit margins. Thus, the recent pickup in prices at the intermediate stage of processing has been more muted; after having fallen almost 1½ percent in 2001, the PPI for core intermediate materials rose 1¼ percent in 2002 and 2 percent in 2003.

*U.S. Financial Markets*

On balance, financial market conditions became increasingly supportive of growth over 2003 as investors became more assured that the economy was on solid footing. Equity prices marched up after the first

quarter of the year in response to the initiation and swift conclusion of major combat operations in Iraq, positive earnings reports, and—in the second half of the year—a stronger pace of economic growth. Risk spreads on corporate debt declined, with the spreads on the debt of both investment-grade firms and speculative-grade firms ending 2003 at their lowest levels since 1998. Thus, although Treasury coupon yields ended the year 30–40 basis points higher, yields on many corporate bonds ended the year lower. Commercial banks appeared somewhat slower than bond investors to lend at more favorable terms; nevertheless, by late in the year, banks had eased both standards and terms on C&I loans.

Demand for short-term debt, however, remained very weak, and business loans and outstanding commercial paper continued to run off. In response to a widening budget deficit and a rapid expansion of federal debt, the Treasury increased the frequency of its debt auctions. Declines in mortgage interest rates over the first half of the year led to an extraordinary increase in mortgage debt, as originations for home purchase and for refinancings both climbed to record levels.

*Interest Rates*

Interest rates fell for most of the first half of 2003, primarily in response to continuing weak economic data and an associated marking down of expectations for the federal funds rate. Global uncertainty ran high, particularly surrounding the timing of military intervention in Iraq, which elevated safe-haven demands and depressed yields on Treasury securities. Moreover, the weak March employment report and other disappointing news about economic activity seemed to cause a substantial shift in views about monetary policy. Data from the federal funds futures market suggested a significant probability of a further easing of policy and did not imply any tightening before early 2004. Even as geopolitical tensions eased, weaker-than-expected economic data continued to hold down Treasury yields. The FOMC's statement following its May meeting that an "unwelcome fall in inflation" remained a risk reinforced the notion that monetary policy would stay accommodative, and, indeed, judging from market quotes on federal funds futures, market participants anticipated further easing. Mortgage rates followed Treasury yields lower, precipitating a huge surge of mortgage refinancing. To offset the decline in the duration of their portfolios stemming from the jump in prepayments, mortgage investors reportedly bought large

Interest rates on selected Treasury securities

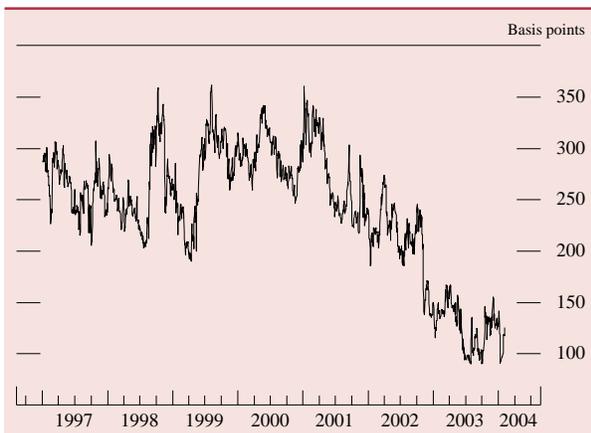


NOTE. The data are daily and extend through February 4, 2004.

quantities of longer-dated Treasuries, amplifying the fall in yields. Interest rates on corporate bonds also declined in the first half of the year, prompting many firms to issue long-term debt to pay down other, more expensive forms of debt and build up cash assets. Growing confidence that the frequency and severity of corporate accounting scandals were waning likely contributed to the narrowing in risk spreads. By the end of spring, default rates on corporate bonds had begun to decline, and corporate credit quality appeared to stabilize.

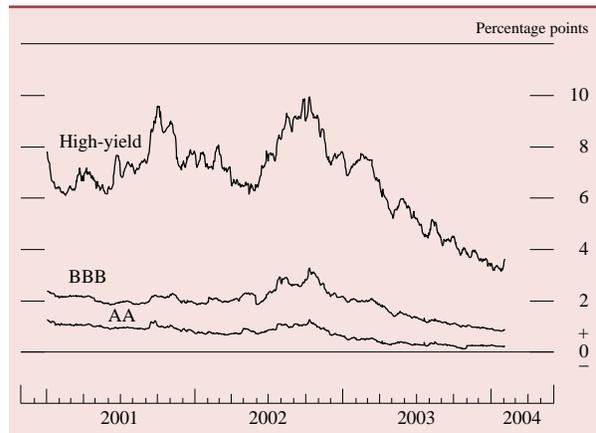
By the time of the June FOMC meeting, federal funds futures data implied that market participants had generally come to expect an aggressive reduction in the target federal funds rate, so the Committee's decision to lower the target rate by only 25 basis points came as a surprise to some. In addition, some investors were reportedly disappointed that the state-

Implied volatility of short-term interest rates



NOTE. The data are daily and extend through February 4, 2004. The series shown is the implied volatility of the three-month eurodollar rate over the coming four months, as calculated from option prices.

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



NOTE. The data are daily and extend through February 4, 2004. The spreads compare the yields on the Merrill Lynch AA, BBB, and 175 high-yield indexes with the yield on the ten-year off-the-run Treasury note.

ment following this meeting included no mention of “unconventional” monetary policy actions that would be aimed at lowering longer-term yields more directly than through changes in the federal funds rate target alone. As a result, market interest rates backed up, with the move probably amplified by the unwinding of mortgage-related hedging activity. The Chairman's monetary policy testimony in July, and the FOMC's statements at subsequent meetings that noted that policy could remain accommodative for “a considerable period,” apparently provided an anchor for the front end of the yield curve. At the same time, increasingly positive economic reports bolstered confidence in the markets, and longer-dated Treasury securities ended the year about 40 basis points above their year-earlier levels. But, with the expansion evidently gaining traction and investors becoming more willing to take on risk, corporate risk spreads, particularly those on speculative-grade issues, continued to fall over the second half of the year. Treasury yields fell early in 2004, largely in response to the weaker-than-expected December labor market report. After the release of the Committee's statement following its January meeting, Treasury yields backed up a bit as futures market prices implied an expectation of an earlier onset of tightening than had been previously anticipated.

Equity Markets

Broad equity price indexes ended the year 25 percent to 30 percent higher. Early in the year, stock prices were buffeted by mixed news about the pace of

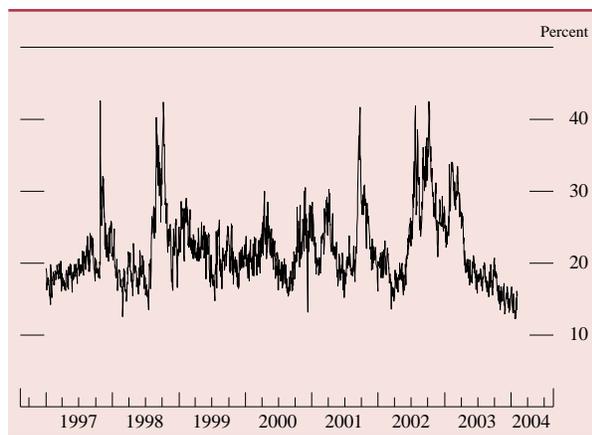
## Major stock price indexes



NOTE. The data are daily and extend through February 4, 2004.

economic expansion and by heightened geopolitical tensions. Rising oil prices boosted the shares of energy companies very early in the year while, by and large, stocks in other sectors were stumbling. By spring, however, positive news on corporate earnings—often exceeding expectations—and easing of geopolitical tensions associated with the initiation of military action in Iraq boosted equity prices significantly. Subsequently, the swift end to major combat operations in Iraq caused implied volatility on the S&P 500 index to fall substantially. Over the rest of the year, increasingly positive earnings results contributed to a sustained rally in stock prices, and implied volatility in equity markets fell further. Corporate scandals—albeit on a smaller scale than in previous years—continued to emerge in 2003, but these revelations appeared to leave little lasting

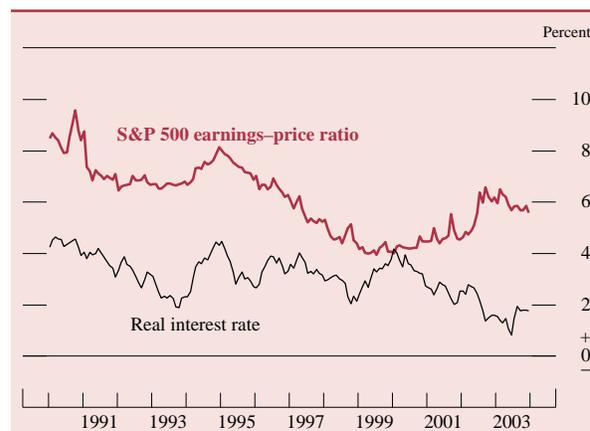
## Implied S&amp;P 500 volatility



NOTE. The data are daily and extend through February 4, 2004. The series shown is the implied volatility of the S&P 500 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 2003. The forward earnings–price ratio is based on I/B/E/S consensus estimates of earnings over the coming year. The real interest rate is estimated as the difference between the ten-year Treasury rate and the expected ten-year inflation rate reported in the survey by the Federal Reserve Bank of Philadelphia.

imprint on broad measures of stock prices. For the year as a whole, the Russell 2000 index of small-cap stocks and the technology-laden Nasdaq composite index, which rose 45 percent and 50 percent, respectively, noticeably outpaced broader indexes. To date in 2004, equity markets have continued to rally.

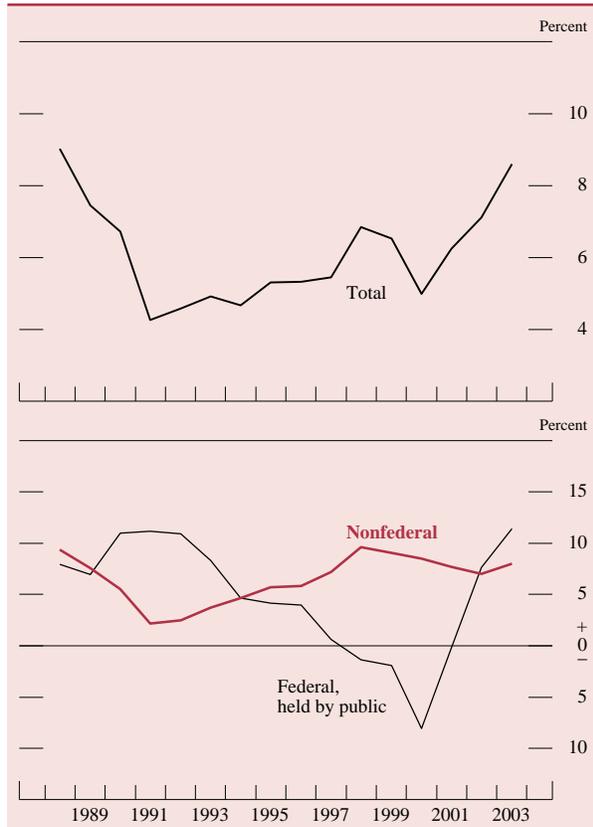
With the sustained rise in stock prices, the ratio of expected year-ahead earnings to stock prices for firms in the S&P 500 edged down over 2003. The gap between this ratio and the real ten-year Treasury yield—a crude measure of the equity risk premium—narrowed a bit over the course of the year, though it remains in the upper part of the range observed over the past two decades.

## Debt and Financial Intermediation

Aggregate debt of the domestic nonfinancial sectors is estimated to have increased about  $8\frac{1}{4}$  percent in 2003, just over a percentage point faster than in 2002. Federal debt accelerated sharply, rising 11 percent, owing to the larger budget deficit. Household debt rose almost as rapidly, and the increase in state and local government debt also was substantial. In contrast, business borrowing remained subdued last year.

In the business sector, investment spending, particularly in the beginning of the year, was mainly financed with internal funds, limiting, though not eliminating, businesses' need to increase debt. With long-term rates falling through midyear and credit spreads—especially for riskier borrowers—narrowing, corporate treasurers shifted their debt

Change in domestic nonfinancial debt

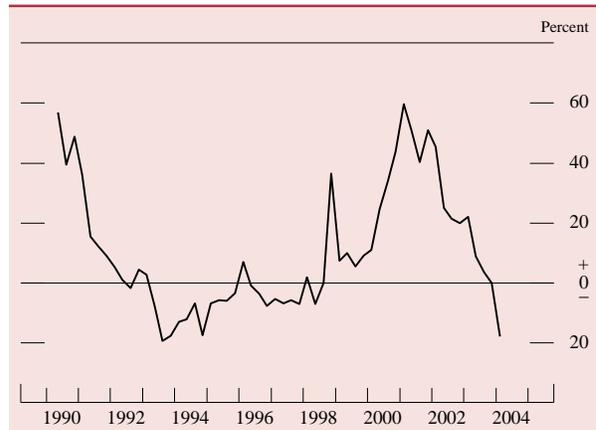


NOTE. For 2003, change is from 2002:Q4 to 2003:Q3 at an annual rate. For earlier years, the data are annual and are computed by dividing the annual flow for a given year by the level at the end of the preceding year. The total consists of nonfederal debt and federal debt held by the public. Nonfederal debt consists of the outstanding credit market debt of state and local governments, households, nonprofit organizations, and nonfinancial businesses. Federal debt held by the public excludes securities held as investments of federal government accounts.

issuance toward bond financing and away from shorter-term debt. Household borrowing also shifted in response to lower longer-term rates. Mortgage rates followed Treasury rates lower in the spring, and mortgage originations for both home purchases and refinancings surged. Refinancing activity appears to have held down growth of consumer credit as households extracted equity from their homes and used the proceeds, in part, to pay down higher-cost consumer debt. Nevertheless, consumer credit posted a moderate advance in 2003, buoyed by heavy spending on autos and other durables. A substantial widening of the federal deficit forced the Treasury to increase its borrowing significantly. To facilitate the pickup in borrowing, the Treasury altered its auction cycle to increase the frequency of certain issues and reintroduced the three-year note.

Depository credit rose 6 percent in 2003 and was driven by mortgage lending and the acquisition of

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

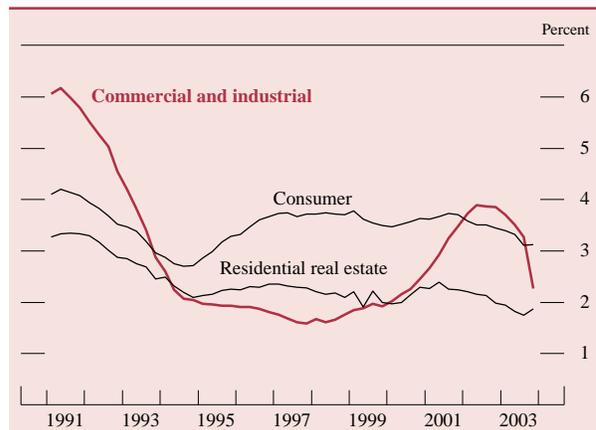


NOTE. The data are based on a survey generally conducted four times per year; the last reading is from the January 2004 survey. Large and medium-sized firms are those with annual sales of \$50 million or more. Net percentage is the percentage reporting a tightening less the percentage reporting an easing.

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

mortgage-backed securities by both banks and thrift institutions. Consumer lending also was substantial, as lower interest rates and auto incentives spurred spending on durable goods. In contrast, business loans fell 7¼ percent over 2003, a drop similar to the runoff in 2002. Survey evidence suggests that the decline in business lending at banks was primarily the result of decreased demand for these loans, with respondent banks often citing weak investment and inventory spending. Moreover, the contraction was concentrated at large banks, whose customers tend to be larger corporations that have access to bond mar-

Delinquency rates on selected types of loans at banks



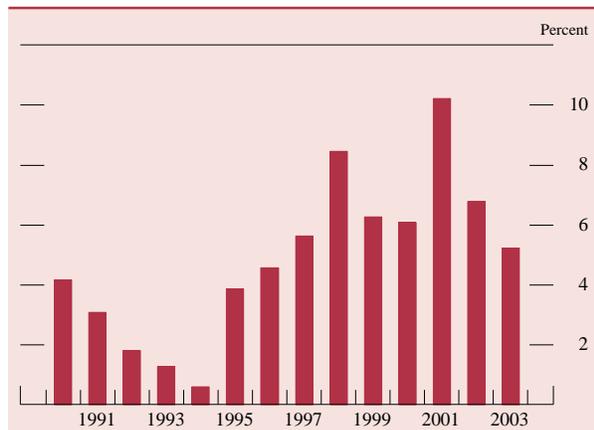
NOTE. The data, from bank Call Reports, are quarterly, seasonally adjusted, and extend through 2003:Q4.

kets, and the proceeds of bond issuance were apparently used, in part, to pay down bank loans. The January 2004 Senior Loan Officer Opinion Survey reported a pickup in business loan demand arising mainly from increased spending on plant and equipment and on inventories. Supply conditions apparently played a secondary role in the weakness in business loans in 2003. Banks tightened standards and terms on business loans somewhat in the first half of the year, but by year-end they had begun to ease terms and standards considerably, in part because of reduced concern about the economic outlook.

### The M2 Monetary Aggregate

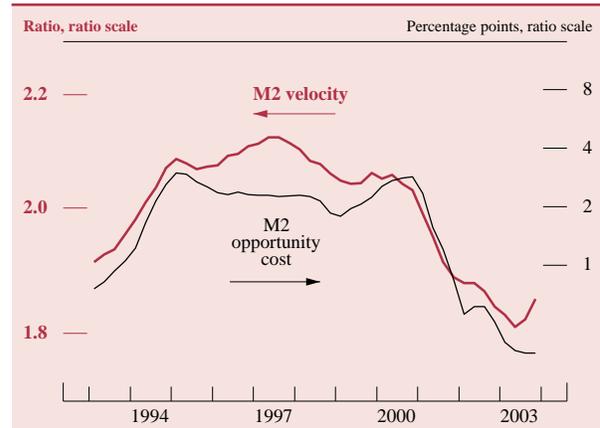
M2 increased 5¼ percent in 2003, a pace somewhat slower than in 2002 and a bit below the rate of expansion of nominal income. The deceleration in M2 largely reflected a considerable contraction in the final quarter of the year after three quarters of rapid growth. The robust growth in money around mid-year was concentrated in liquid deposits and likely resulted in large part from the wave of mortgage refinancings, which tend to boost M2 as the proceeds are temporarily placed in non-interest-bearing accounts pending disbursement to the holders of mortgage-backed securities. Moreover, around the middle of the year, the equity that was extracted from home values during refinancings probably provided an additional boost to deposits for a time, as households temporarily parked these funds in M2 accounts before paying down other debt or spending them. In the fourth quarter, M2 contracted at an annual rate of 2 percent, the largest quarterly decline since consis-

### M2 growth rate



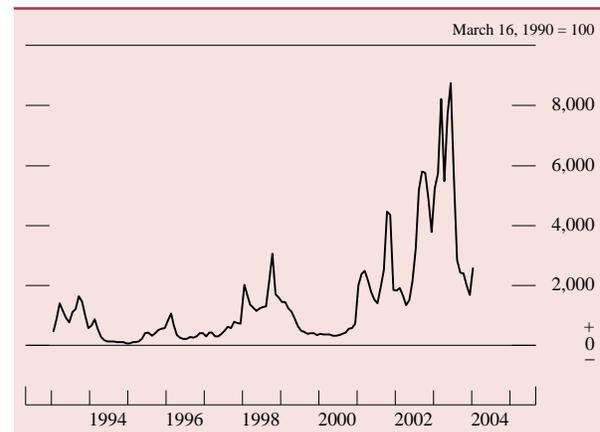
NOTE. M2 consists of currency, travelers checks, demand deposits, other checkable deposits, savings deposits (including money market deposit accounts), small-denomination time deposits, and balances in retail money market funds.

### M2 velocity and opportunity cost



NOTE. The data are quarterly and extend through 2003: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.

### Mortgage refinancing application index



NOTE. The data are monthly and extend through January 2004. SOURCE. Mortgage Bankers Association.

tent data collection began in 1959. As mortgage rates backed up and the pace of refinancing slowed, the funds that had been swelling deposits flowed out, depressing M2. The sustained rally in equity markets after the first quarter of the year may also have slowed M2 growth, as expectations of continued higher returns led households to shift funds from M2 assets to equities, a view reinforced by the strong flows into equity mutual funds.

### International Developments

Economic growth abroad rebounded in the second half of last year as factors that weighed on the global economy in the first half—including the SARS epi-

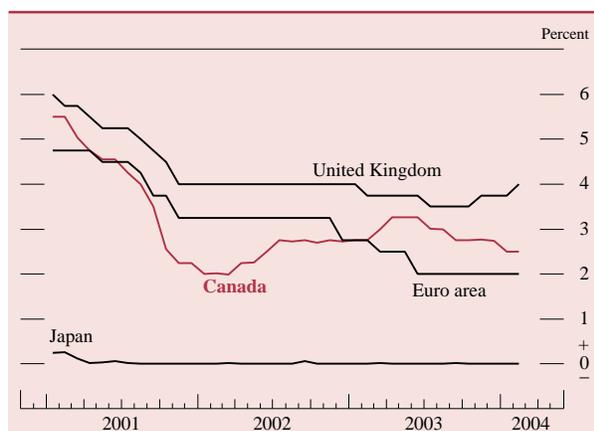
demic and uncertainty surrounding the war in Iraq—dissipated. Foreign growth also was boosted by the strong rebound in the U.S. economy, the revival of the global high-tech sector, and, in many countries, ample policy stimulus.

Strong second-half growth in China stimulated activity in other emerging Asian economies and Japan by raising the demand for their exports. Growth in Japan also was spurred by a recovery in private spending there on capital goods. Economic activity in Europe picked up in the second half, as export growth resumed. Economic growth in Latin America has been less robust; the Mexican economic upturn has lagged that of the United States, and Brazil's economy has only recently begun to recover from the effects of its 2002 financial crisis.

Monetary authorities abroad generally eased their policies during the first half of 2003 as economic activity stagnated. In the second half, market participants began to build in expectations of eventual monetary tightening abroad, and official interest rates were raised by year-end in the United Kingdom and Australia. Canadian monetary policy followed a different pattern; the Bank of Canada raised official interest rates in the spring as inflation moved well above its 1 percent to 3 percent target range but cut rates later in the year and again early this year as slack emerged and inflation moderated. Similarly, lower inflation in Mexico and Brazil allowed authorities to ease monetary policy during 2003. The Bank of Japan maintained official interest rates near zero and continued to increase the monetary base.

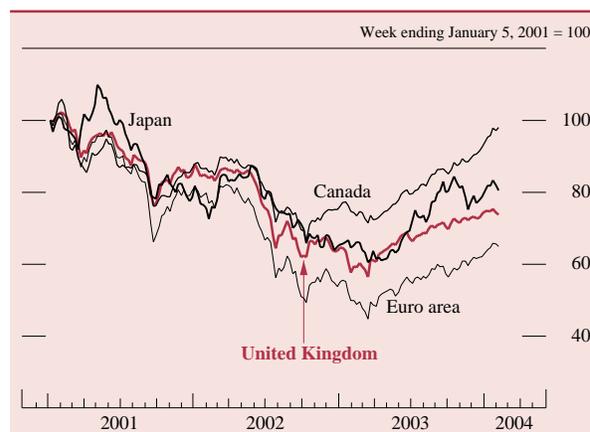
In foreign financial markets, equity prices fell, on average, until mid-March but since then have risen

Official interest rates in selected foreign industrial countries



NOTE. The data are as of month-end; the last observations are for February 5, 2004, when the Bank of England raised its official rate. The data shown are the call money rate for Japan, the overnight rate for Canada, the refinancing rate for the euro area, and the repurchase rate for the United Kingdom.

Equity indexes in selected foreign industrial countries



NOTE. The data are weekly. The last observations are the average of trading days through February 4, 2004.

in reaction to indications of stronger-than-expected global economic activity. Emerging-market equity indexes outpaced those in the industrial countries in 2003, with markets in Latin America posting particularly strong gains. Around midyear, long-term interest rates declined to multiyear lows in many countries as economic growth slowed and inflationary pressures diminished, but those rates moved higher in the second half as growth prospects improved. Bond spreads came down substantially during the year, both for industrial-country corporate debt and for emerging-market sovereign debt; spreads of the J.P. Morgan Emerging Market Bond Index (EMBI+) over U.S. Treasury securities fell to their lowest levels since before the Russian crisis of 1998. Gross capital flows to emerging markets, however, remained well below their 1997 peak.

Equity indexes in selected emerging markets



NOTE. The data are weekly. The last observations are the average of trading days through February 4, 2004. Asian emerging markets are China, Hong Kong, India, Indonesia, Malaysia, Pakistan, the Philippines, Singapore, South Korea, Taiwan, and Thailand.

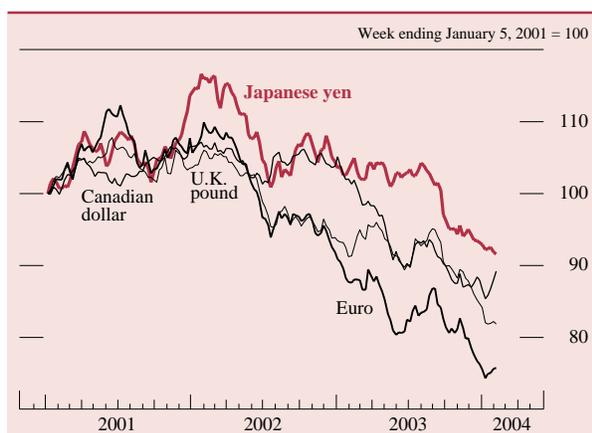
## U.S. dollar nominal exchange rate, broad index



NOTE. The data are monthly and are in foreign currency units per dollar. The last observation is the average of trading days through February 4, 2004. 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.

The foreign exchange value of the dollar continued to decline last year as concerns over the financing of the large and growing U.S. current account deficit took on greater prominence. The dollar declined 18 percent against the Canadian dollar, 17 percent against the euro, and 10 percent against the British pound and the Japanese yen. In contrast, the value of the dollar was little changed, on net, against the currencies of our other important trading partners, in part because officials of China and of some other emerging Asian economies managed their exchange rates so as to maintain stability in terms of the dollar. Among Latin American currencies, the dollar declined against the Brazilian and Argentine curren-

## U.S. dollar exchange rate against selected major currencies



NOTE. The data are weekly and are in foreign currency units per dollar. Last observations are the average of trading days through February 4, 2004.

cies but appreciated against the Mexican peso. On balance, the dollar depreciated 9 percent during 2003 on a trade-weighted basis against the currencies of a broad group of U.S. trading partners.

## Industrial Economies

The euro-area economy contracted in the first half of 2003, weighed down in part by geopolitical uncertainty and higher oil prices. In the second half, economic activity in the euro area began to grow as the global pickup in activity spurred a recovery of euro-area exports despite the continued appreciation of the euro. The monetary policy of the European Central Bank (ECB) was supportive of growth, with the policy interest rate lowered to 2 percent by midyear. Consumer price inflation slowed to around 2 percent, the upper limit of the ECB's definition of price stability. Despite increased economic slack, inflation moved down only a little, partly because the summer drought boosted food prices. For the second straight year, the governments of Germany and France each recorded budget deficits in excess of the 3 percent deficit-to-GDP limit specified by the Stability and Growth Pact. However, in light of economic conditions, European Union finance ministers chose not to impose sanctions.

After a sluggish first quarter, the U.K. economy expanded at a solid pace for the remainder of 2003, supported by robust consumption spending and considerable government expenditure. The Bank of England cut rates in the first half of the year but reversed some of that easing later in the year and early this year as the economy picked up and housing prices continued to rise at a rapid, albeit slower, pace. In June, the British government announced its assessment that conditions still were not right for the United Kingdom to adopt the euro. In December, the British government changed the inflation measure to be targeted by the Bank of England from the retail prices index excluding mortgage interest (RPIX) to the consumer prices index. U.K. inflation currently is well below the objective of 2 percent on the new target index.

The Canadian economy contracted in the second quarter owing to the impact of the SARS outbreak in Toronto on travel and tourism, but it rebounded in the latter half of the year. Canadian economic growth continued to be led by strong domestic demand; consumption remained robust and investment spending accelerated, offsetting the negative effect of Canadian dollar appreciation on both exports and import-competing industries. Canadian consumer price

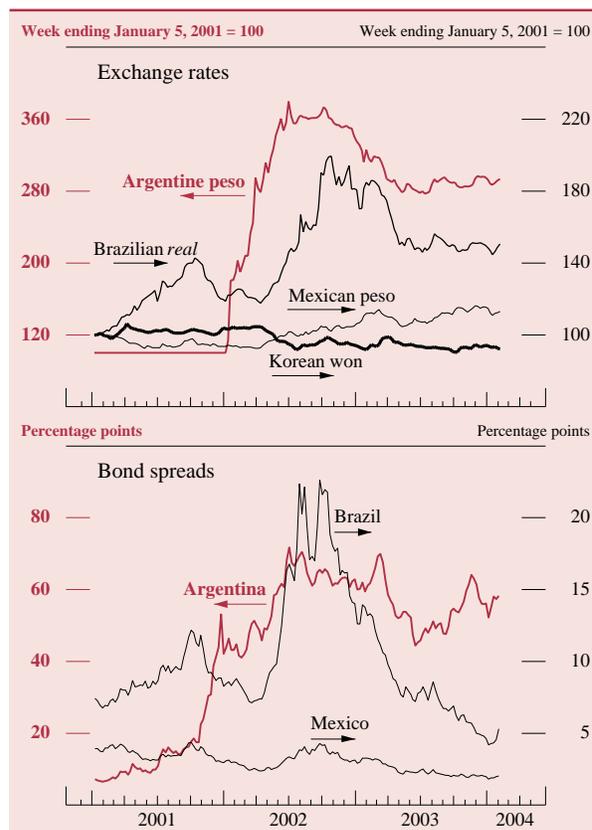
inflation swung widely last year, rising to 4½ percent on a twelve-month basis in February before falling to 1½ percent in November and ending the year at 2 percent. The swing partly reflected movements in energy prices, but changes in auto insurance premiums and cigarette taxes also played an important role.

Japanese real GDP recorded significant growth in 2003 for the second straight year. Private investment spending made the largest contribution to the expansion. Consumer spending remained sluggish as labor market conditions continued to be soft. However, nominal wages stabilized following a sharp drop in 2002, and leading indicators of employment moved higher. Despite an appreciation of the yen late in the year, Japanese exports posted a strong increase in 2003 primarily because of gains in exports to China and other emerging Asian economies. With consumer prices continuing to decline, the Bank of Japan (BOJ) maintained its policy interest rate near zero and eased monetary policy several times during 2003 by increasing the target range for the outstanding balance of reserve accounts held by private financial institutions at the BOJ. The BOJ also took other initiatives last year to support the Japanese economy, including launching a program to purchase securities backed by the assets of small- and medium-sized enterprises. Japanese banks continued to be weighed down by large amounts of bad debt, but some progress was made in resolving problems of insufficient bank capital and in reducing bad-debt levels from their previous-year highs.

### Emerging-Market Economies

Growth in the Asian developing economies rebounded sharply in the second half of 2003 after having contracted in the first half. The outbreak of SARS in China and its spread to other Asian economies was the primary factor depressing growth in the first half, and the subsequent recovery of retail sales and tourism after the epidemic was contained was an important factor in the sharp rebound. The pattern of Asian growth also reflected the sharp recovery of the global high-tech sector in the second half after a prolonged period of weakness. Exports continued to be the main engine of growth for the region. However, domestic demand contributed importantly to growth in China, where state-sector investment increased at a rapid clip and a boom in construction activity continued. Supply problems caused food prices and overall consumer prices in China to rise on a twelve-month basis last year, following a period of price deflation during the previous year. In addition,

### U.S. dollar exchange rates and bond spreads for selected emerging markets



NOTE. The data are weekly averages. Last observations are the average of trading days through February 4, 2004. Exchange rates (top panel) are in foreign currency units per dollar. Bond spreads (bottom panel) are the spreads of the J.P. Morgan Emerging Market Bond Index (EMBI+) over U.S. Treasury securities.

concerns emerged that some sectors of the Chinese economy, particularly the property markets in Beijing and Shanghai, may be overheating.

Korean economic growth turned negative in the first half, as the high level of household debt, labor unrest, and concerns over North Korea's nuclear development depressed private-sector spending. A sharp rise in exports spurred a revival of growth in the second half even as domestic demand remained subdued.

The Mexican economy remained sluggish through much of the year but recently has shown some signs of improvement. After lagging the rise in U.S. production, Mexican industrial production posted strong gains in October and November, although it remains well below the peak it reached in 2000. Exports rose late last year to almost the peak they had reached in 2000. Consumer price inflation came down over the course of 2003 to 4 percent, the upper bound of the 2 percent to 4 percent target range. The Bank of

Mexico has left policy unchanged since tightening five times between September 2002 and March 2003, but market interest rates have fallen owing to weakness in economic activity.

The Brazilian economy contracted in the first half of 2003 partly as a result of the 2002 financial crisis and the consequent monetary policy tightening. It then expanded moderately in the second half, boosted by strong export growth and a recovery in investment spending. Brazilian financial indicators improved significantly in 2003, in part because the Brazilian government began to run a substantial primary budget surplus and to reform the public-sector pension system. The Brazilian stock market soared nearly 100 percent last year, and Brazil's EMBI+ bond spread narrowed by nearly two-thirds. As the Brazilian currency stabilized and began to appreciate,

Brazil's inflation outlook improved, allowing the central bank to reverse fully its earlier rate hikes and to reduce the overnight interest rate to a multi-year low, although real interest rates remained high.

The Argentine economy rebounded in 2003 from the sharp contraction that occurred in the wake of its financial crisis in 2001–02. Still, economic activity remains far below pre-crisis levels, and many of Argentina's structural problems have not been addressed. With the government still in default to its bondholders, the country's sovereign debt continued to carry a very low credit rating, and its EMBI+ spread remained extremely high. Even so, the Argentine peso appreciated on balance in 2003, and the Merval stock index nearly doubled over the course of the year. □