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Board of Governors of the Federal Reserve System

Monetary Policy Report to the Congress Pursuant to the Full Employment and Balanced Growth Act of 1978

February 23, 1999

Letter of Transmittal

BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM
Washington, D.C., February 23, 1999

THE PRESIDENT OF THE SENATE
THE SPEAKER OF THE HOUSE OF REPRESENTATIVES

The Board of Governors is pleased to submit its Monetary Policy Report to the Congress, pursuant to the Full Employment and Balanced Growth Act of 1978.

Sincerely,

Alan Greenspan, Chairman

Table of Contents

	Page
Monetary Policy and the Economic Outlook	1
Economic and Financial Developments in 1998 and Early 1999	7

Monetary Policy Report to the Congress

Report submitted to the Congress on February 23, 1999, pursuant to the Full Employment and Balanced Growth Act of 1978

Monetary Policy and the Economic Outlook

In 1998, the U.S. economy again performed impressively. Output expanded rapidly, the unemployment rate fell to the lowest level since 1970, and inflation remained subdued. Transitory factors, most recently falling prices for imports and commodities, especially oil, have helped to produce the favorable outcomes of recent years, but technological advances and increased efficiency, likely reflecting in part heightened global competition and changes in business practices, suggest that some of the improvement will be more lasting.

Sound fiscal and monetary policies have contributed importantly to the good economic results: Budgetary restraint at the federal level has bolstered national saving and permitted the Federal Reserve to maintain lower interest rates than would otherwise have been possible. This policy mix and sustained progress toward price stability have fostered clearer price signals, more efficient resource use, robust business investment, and sizable advances in the productivity of labor and in the real wages of workers. The more rapid expansion of productive potential has, in turn, helped to keep inflation low even as aggregate demand has been surging and as labor markets have tightened.

This past year, economic troubles abroad posed a significant threat to the performance of the economy. Foreign economic growth slowed markedly, on average, as conditions in many countries deteriorated. The recession in Japan deepened, and several emerging market economies in Asia, which had started to weaken in the wake of the financial crises of 1997, contracted sharply. A worsening economic situation in Russia last summer led to a devaluation of the ruble and a moratorium by that country on a substantial portion of its debt payments. As the year progressed, conditions in Latin America also weakened. Although some of the troubled foreign economies are showing signs of improvement, others either are not yet in recovery or are still contracting.

The Russian crisis in mid-August precipitated a period of unusual volatility in world financial markets. The losses incurred in Russia and in other emerging market economies heightened investors' and lenders' concerns about other potential problems and led them to become substantially more cautious about taking on risk. The resulting effects on U.S. financial markets included a substantial widening of risk spreads on debt instruments, a jump in measures of market uncertainty and volatility, a drop in equity prices, and a reduction in the liquidity of many markets. To cushion the U.S. economy from the effects of these financial strains, and potentially to help reduce the strains as well, the Federal Reserve eased monetary policy on three occasions in the fall. Global financial market stresses lessened somewhat after mid-autumn, reflecting, in part, these policy steps as well as interest rate cuts in other industrial countries and international efforts to provide support to troubled emerging market economies. Although some U.S. financial flows were disrupted for a time, most firms and households remained able to obtain sufficient credit, and the turbulence did not appear to constrain spending to a significant degree. More recently, some markets were unsettled by the devaluation and subsequent floating of the Brazilian *real* in mid-January, and the problems in Brazil continue to pose risks to global markets. Thus far, however, market reaction outside Brazil to that country's difficulties has been relatively muted.

The foreign exchange value of the dollar rose substantially against the currencies of the major foreign industrial countries over the first eight months of 1998, but subsequently it fell sharply, ending the year down a little on net. The appreciation of the dollar in the first half of the year carried it to an eight-year high against the Japanese yen. In June, this strength against the yen prompted the first U.S. foreign exchange intervention operation in nearly three years, an action that appeared to slow the dollar's rise against the yen over the following days and weeks. Later in the summer, concerns about the possible impact on the U.S. economy of increasing difficulties in Latin America began to weigh on the dollar's exchange value against major foreign currencies. After peaking in mid-August, it fell sharply over the course of several weeks, reversing by mid-October

the appreciation that had occurred earlier in the year. The depreciation during this period was particularly sharp against the yen. The reasons for this decline against the yen are not clear, but repayment of yen-denominated loans by international investors and decisions by Japanese investors to repatriate their assets in light of increased volatility in global markets seem to have contributed. The exchange value of the dollar fluctuated moderately against the major currencies over the rest of the year, and after declining somewhat early in 1999, it has rebounded strongly in recent weeks, as incoming data have suggested continued strength of economic activity in the United States. Since the end of 1998, the dollar has appreciated about 7 percent against the yen, partly reflecting further monetary easing in Japan. At the turn of the year, the launch of the third stage of European Economic and Monetary Union fixed the eleven participating countries' conversion rates and created a new common currency, the euro. The dollar has appreciated more than 5 percent against the euro, in part because of signs that growth has slowed recently in some euro-area economies.

With the U.S. economy expanding rapidly, the economies of many U.S. trading partners struggling, and the foreign exchange value of the dollar having risen over 1997 and the first part of 1998, the U.S. trade deficit widened considerably last year. Some domestic industries were especially affected by reductions in foreign demand or by increased competition from imports. For example, a wide range of commodity producers, notably those in agriculture, oil, and metals, experienced sharp price declines. Parts of the manufacturing sector also suffered adverse consequences from the shocks from abroad. Overall, real net exports deteriorated sharply, as exports stagnated and imports continued to surge. The deterioration was particularly marked in the first half of the year; the second half brought a further, more modest, net widening of the external deficit.

Meanwhile, domestic spending continued to advance rapidly. Household expenditures were bolstered by gains in real income and a further rise in wealth, while a low cost of capital and optimism about future profitability spurred businesses to invest heavily in new capital equipment. Although securities markets were disrupted in late summer and early fall, credit generally remained available from alternative sources. Once the strains on securities markets had eased, businesses and households generally had ready access to credit and other sources of finance on relatively favorable terms, although spreads in some markets remained quite elevated, especially for lower-rated borrowers. All told, household and business outlays rose even more rapidly than in 1997, and that acceleration kept the growth of real GDP strong even as net exports were slumping.

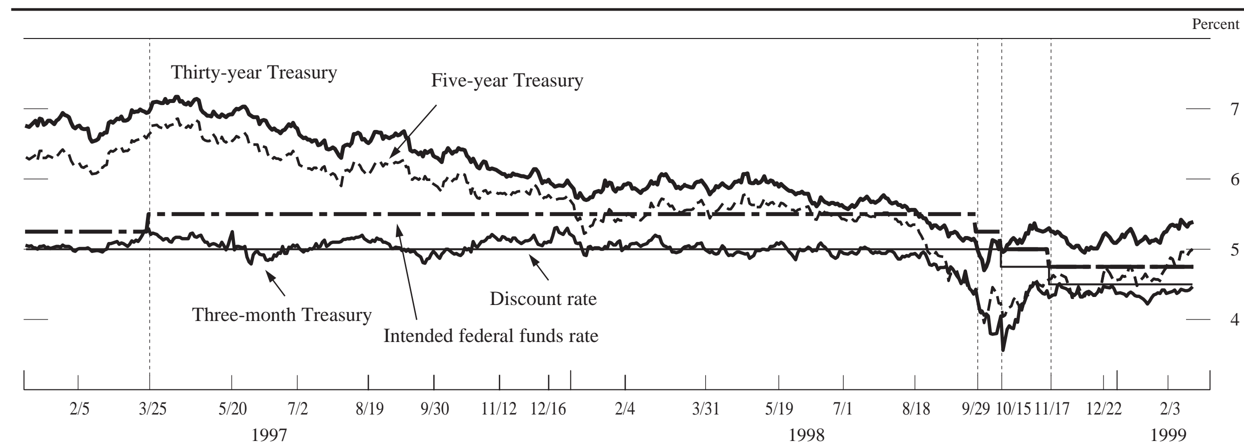
Deteriorating economic conditions abroad, coupled with the strength of the dollar over the first eight months of the year, helped to hold down inflation in the United States by trimming the prices of oil and other imports. These declines reduced both the prices paid by consumers and the costs of production in many lines of business, and the competition from abroad kept businesses from raising prices as much as they might have otherwise. As the result of a reduced rate of price inflation, workers enjoyed a larger rise in real purchasing power even as increases in nominal hourly compensation picked up only slightly on average. Because of increased gains in productivity, corporations in the aggregate were able to absorb the larger real pay increases without suffering a serious diminution of profitability.

Monetary Policy, Financial Markets, and the Economy over 1998 and Early 1999

Monetary policy in 1998 needed to balance two major risks to the economic expansion. On the one hand, with the domestic economy displaying considerable momentum and labor markets tight, the Federal Open Market Committee (FOMC) was concerned about the possible emergence of imbalances that would lead to higher inflation and thereby, eventually, put the sustainability of the expansion at risk. On the other hand, troubles in many foreign economies and resulting financial turmoil both abroad and at home seemed, at times, to raise the risk of an excessive weakening of aggregate demand.

Over the first seven months of the year, neither of these potential tendencies was sufficiently dominant to prompt a policy action by the FOMC. Although the incoming data gave no evidence of a sustained slowing of output growth, the Committee members believed that the pace of expansion likely would moderate as businesses began to slow the rapid rates at which they had been adding to their stocks of inventories and other investment goods, and as households trimmed the large advances in their spending on consumer durables and homes. Relatively firm real interest rates, buoyed by a high real federal funds rate resulting from the decline in the level of expected inflation, were thought likely to help restrain the growth of spending by businesses and households. Another check on growth was expected to come from the effects on imports and

Selected interest rates



NOTE. The data are daily. Vertical lines indicate the days on which the Federal Reserve announced a monetary policy action. The dates on the horizontal axis are those on which either the FOMC held a scheduled meeting or a policy action was announced. Last observations are for February 19, 1999.

exports of the economic difficulties in emerging market economies in Asia and elsewhere. Indeed, production in the manufacturing sector slowed substantially in the first half of the year, and capacity utilization dropped noticeably. Moreover, inflation remained subdued, and a pickup was not expected in the near-to-intermediate term because of declining oil prices, and because of economic weakness abroad and the appreciation of the dollar, which were expected to trim the prices of imported goods and to increase price competition for many U.S. producers. Nonetheless, with labor markets already quite taut and aggregate demand growing rapidly—a combination that often has signaled the impending buildup of inflationary pressures—the Committee, at its meetings from March through July, judged conditions to be such that, if a policy action were to be taken in the period immediately ahead, it more likely would be a tightening than an easing; its directives to the Account Manager of the Domestic Trading Desk at the Federal Reserve Bank of New York noted that asymmetry.

By the time of the August FOMC meeting, however, the situation was changing. Although tight labor markets and rapid output growth continued to pose a risk of higher inflation, the damping influence of foreign economic developments on the U.S. economy seemed likely to increase. The contraction in the emerging market economies in Asia appeared to be deeper than had been anticipated, and the economic situation in Japan had deteriorated. Financial markets in some foreign economies also had experienced greater turmoil, and, the day before the Committee met, Russia was forced to devalue the ruble. These difficulties had been weighing on U.S. asset markets: Stock prices had fallen sharply in late July and into August as investors became concerned about the outlook for profits, and risk spreads in debt markets had widened, albeit from very low levels. Taking account of these circumstances, the Committee again left monetary policy unchanged at the August meeting, but it shifted to a symmetric directive, reflecting its perception that the risks to the economic outlook, at prevailing short-term rates, had become roughly balanced.

Over subsequent weeks, conditions in financial markets and the economic outlook in many foreign countries deteriorated further, increasing the dangers to the U.S. expansion. With investors around the world apparently reevaluating the risks associated with various credits and seemingly becoming less willing or able to bear such risks, asset demands shifted toward safer and more liquid instruments. These shifts caused a sharp fall in yields on Treasury securities. Spreads of yields on private debt securities over those on comparable Treasury instruments widened considerably further, and issuance slowed sharply. Measures of market volatility increased, and liquidity in many financial markets was curtailed. Equity prices continued to slide lower, with most broad indexes falling back by early September to near their levels at the start of the year. Reflecting the weaker and more uncertain economic outlook, some banks boosted interest rate spreads and fees on new loans to businesses and tightened their underwriting standards.

Against this backdrop, at its September meeting the FOMC looked beyond incoming data suggesting

that the economy was continuing to expand at a robust pace, and it lowered the intended level of the federal funds rate ¼ percentage point. The Committee noted that the rate cut would cushion the effects on prospective U.S. economic growth of increasing weakness in foreign economies and of less accommodative conditions in domestic financial markets. The directive adopted at the meeting suggested a bias toward further easing over the intermeeting period. In the days following the policy move, disturbances in financial markets worsened. Movements in the prices of securities were exacerbated by a deterioration in market liquidity, as some securities dealers cut back on their market-making activities, and by the expected unwinding of positions by hedge funds and other leveraged investors. In early October, Treasury yields briefly tumbled to their lowest levels in many years, reflecting efforts by investors to exchange other instruments for riskless and liquid Treasury securities.

Although some measures of market turbulence had begun to ease a bit by mid-October, financial markets remained extremely volatile and risk spreads were very wide. On October 15, consistent with the directive from the September meeting, the intended federal funds rate was trimmed another ¼ percentage point, to 5 percent. This policy move, which occurred between FOMC meetings, came at the initiative of Chairman Greenspan and followed a conference call with Committee members. At the same time, the Board of Governors approved a ¼ percentage point reduction in the discount rate. These actions were taken to buffer the domestic economy from the impact of the less accommodative conditions in domestic financial markets, in part by contributing to some stabilization of the global financial situation.

Following the October policy move, strains in domestic financial markets diminished considerably. As safe-haven demands for Treasury securities ebbed, Treasury yields generally trended higher, and measures of financial market volatility and illiquidity eased. Nonetheless, risk spreads remained very wide, and liquidity in many markets continued to be limited. Moreover, although pressures on some emerging market economies had receded a bit, partly reflecting concerted international efforts to provide assistance to Brazil, the foreign economic outlook remained uncertain. With downside risks still substantial, and in light of the cumulative effect since August of the tightening in many sectors of the credit markets and the weakening of economic activity abroad, the FOMC reduced the intended federal funds rate a further ¼ percentage point at its November meeting, bringing the total reduction during the autumn to ¾ percentage point. The Board of Governors also approved a second ¼ percentage point cut in the discount rate. The Committee believed that, with this policy action, financial conditions could reasonably be expected to be consistent with fostering sustained economic expansion while keeping inflationary pressures subdued. The action provided some insurance against an unexpectedly severe weakening of the expansion, and the Committee therefore established a symmetrical directive. By the time of the December meeting, the situation in financial markets had changed little, on balance, and the Committee decided that no further change in rates was desirable and that the directive should remain symmetrical.

Some measures of financial volatility eased further in the new year, although risk spreads on corporate bonds remained at quite high levels. Yields on Treasury securities were about flat, on balance, in January, as the effect of stronger-than-expected economic growth appeared to be about offset by data suggesting that inflation remained quiescent and perhaps also by the effects of some safe-haven flows prompted by the deteriorating situation in Brazil. Over the same period, stock prices surged higher, led by computer and other technology shares, and most stock price indexes posted new highs. By the time of the February 2–3 meeting, financial markets were easily accommodating robust demands for credit, and economic activity seemed to have more momentum than many had anticipated. However, the foreign sector continued to pose a threat to U.S. growth going forward, inflation showed no signs of picking up despite the rapid pace of growth and the very tight labor market, and some slowing of economic growth remained a likely prospect. In these circumstances, the FOMC concluded that it was prudent to wait for further information, and it left policy unchanged.

Economic Projections for 1999

By and large, the members of the Board of Governors and the Federal Reserve Bank presidents, all of whom participate in the deliberations of the FOMC, expect the economy to expand moderately, on average, in 1999. The central tendency of the FOMC participants' forecasts of real GDP growth from the fourth quarter of 1998 to the fourth quarter of 1999 is 2½ percent to 3 percent. The anticipated expansion is expected to create enough new jobs to keep the civilian unemployment rate near its recent average, in a range of 4¼ percent to 4½ percent. With tightness of the labor market expected to persist

1. Economic projections for 1999
Percent

Indicator	Federal Reserve governors and Reserve Bank presidents		Administration
	Range	Central tendency	
Change, fourth quarter to fourth quarter[1]			
Nominal GDP	3¾–5	4–4½	4.0
Real GDP[2]	2–3½	2½–3	2.0
Consumer price index[3]	1½–2½	2–2½	2.3
Average level, fourth quarter			
Civilian unemployment rate	4¼–4¾	4¼–4½	4.9

1. Change from average for fourth quarter of 1998 to average for fourth quarter of 1999.
2. Chain-weighted.
3. All urban consumers.

and oil and import prices unlikely to be as weak in 1999 as they were in 1998, inflation is expected to move up somewhat from the rate of this past year but to remain low by the standards of the past three decades: The central tendency of the FOMC participants' CPI inflation forecasts for 1999 is 2 percent to 2½ percent. The Federal Reserve officials' inflation forecasts are closely aligned with that of the Administration, and their forecasts of real GDP and unemployment depict a somewhat stronger real economy than the Administration is projecting.

Present circumstances suggest that domestic demand could continue to rise briskly for a while longer. Consumer spending continues to be driven by strong gains in employment, increases in real incomes, and rising levels of wealth. Those same factors, together with low mortgage interest rates, are keeping housing activity robust. Businesses are still investing heavily in new capital, especially computers and other high-tech equipment. Households and businesses appear willing to take on more debt in support of spending; although spreads on corporate debt remain elevated, rate levels are perceived to be attractive for most borrowers, and restraint on access to finance is not much in evidence.

As the year progresses, however, gains in domestic spending should begin to moderate. Spending increases for housing, consumer durables, and business equipment have been exceptionally large for a while now, substantially raising the rate of growth in the amounts of these goods owned by businesses and households; some moderation in outlays seems likely, lest these holdings become disproportionate to underlying trends in income and output. The outlook for spending continues to be obscured to some degree by uncertainties about the course of equity prices; a failure of these prices to match the outsized gains posted in recent years would contribute to some moderation in spending growth, especially by households. Government spending, which accounts for about one-sixth of domestic demand, seems likely to expand at a moderate pace overall. Along with the numerous other uncertainties that attend the outlook, an additional uncertainty is present this year because of the approach of the year 2000 and the associated Y2K problem.

Growth abroad is expected to remain sluggish, on balance, in 1999, limiting the prospects for exports. At the same time, growth of the U.S. economy probably will continue to generate fairly brisk increases in imports. In total, real net exports of goods and services seem likely to fall further in the coming year, although several factors—the decline in the dollar from its peak of last summer, the expected slowing of income growth in the United States, and the possibility of a slight pickup in economic growth abroad—provide a basis for thinking that this year's drop in net exports might not be as large as that of 1998.

The future course of inflation will depend in part on what happens to the prices of oil and other imports, and restraint from those sources seems unlikely to be as great as it was in 1998. The drop in the price of oil this past year left it toward the lower end of its range of the past couple of decades and has thereby reduced the incentives for exploration, drilling, and production. Futures markets have been showing a gradual rise in the price of oil going forward. Prices of nonoil imports changed little in the fourth quarter of last year after having fallen sharply in previous quarters. Indicators of the pressures on domestic resources provided mixed signals over the past year. In manufacturing, capacity utilization declined considerably, to a level below its long run average, reflecting slower production growth and sizable additions to the stock of capital. However, labor markets remained very taut, and with the economy apparently carrying substantial momentum into this year, data on costs and prices will need to be monitored carefully for signs that a rising inflation pattern might start to take hold. In that regard, the FOMC will continue to rely not only on the CPI but also on a variety of other price measures to gauge the economy's inflation performance in the period ahead.

Money and Debt Ranges for 1999

At its most recent meeting, the FOMC reaffirmed the 1999 monetary growth ranges that were chosen on a

2. Ranges for growth of monetary and debt aggregates
Percent

Aggregate	1997	1998	1999
M2	1–5	1–5	1–5
M3	2–6	2–6	2–6
Debt	3–7	3–7	3–7

NOTE. Change from average for fourth quarter of preceding year to average for fourth quarter of year indicated.

provisional basis last July: 1 percent to 5 percent for M2, and 2 percent to 6 percent for M3. As has been the case for some time, the FOMC intends these money growth ranges to be benchmarks for growth under conditions of price stability, sustainable real economic growth, and historical velocity relationships rather than ranges that encompass the expected growth of money over the coming year or that serve as guides to policy.

Given continued uncertainty about movements in the velocities of M2 and M3 (the ratios of nominal GDP to the aggregates), the Committee would have little confidence that money growth within any particular range selected for the year would be associated with the economic performance it expected or desired. Nonetheless, the Committee believes that, despite the apparent large shift in velocity behavior in the early 1990s, money growth has some value as an economic indicator. Indeed, some FOMC members have expressed the concern that the unusually rapid growth in the money and debt aggregates in 1998 might have reflected monetary conditions that were too accommodative and would ultimately lead to an increase in inflation pressures. The Committee will continue to monitor the monetary aggregates as well as a wide variety of other economic and financial data to inform its policy deliberations.

Last year, M2 increased 8½ percent, and with nominal GDP rising 5 percent, M2 velocity decreased 3 percent. This drop in velocity was considerably larger than would have been expected on the basis of historical relationships and the modest decline in the opportunity cost of M2 (measured as the difference between the interest rate on Treasury bills and the weighted average rate available on M2 assets). The fall in velocity in part reflected an increased demand for the safe and liquid assets in M2 as investors responded to the heightened volatility in financial markets in the second half of the year. Other factors that may have contributed include lower long-term interest rates and a very flat yield curve, which might have suggested to households that they would be giving up very little in earnings by parking savings in short-term assets in M2. In addition, M2 may have been boosted by a desire on the part of some investors to redirect savings flows away from equities after several years of outsized gains in stock market wealth. With equity wealth still elevated and the yield curve likely to remain flat, M2 velocity could continue to fall this year. However, the pace of decline should slow as some households respond to the easing of concerns about financial market volatility by reversing a portion of the shift toward M2 assets that occurred last fall. Indeed, this effect may already be visible, as M2 growth, while still robust, has slowed considerably early this year. If velocity does fall, given the Committee's expectations for nominal income growth, M2 could again exceed its price-stability benchmark range.

M3 expanded 11 percent last year, and its velocity fell 5¼ percent, the largest drop in many years. The rapid growth in this aggregate owed in large part to a substantial rise in institutional money funds. These funds have been expanding rapidly in recent years as nonfinancial firms increasingly employ them to provide cash management services. Investments in these funds provide businesses with greater liquidity than direct holdings of money market instruments, and by substituting for such direct holdings, they boost M3. M3 was also buoyed last year by a large advance in the managed liabilities banks used to fund rapid growth in bank credit. In part, the growth in bank credit reflected demand by borrowers shifting from the securities markets, and with these markets again receptive to new issues, bank credit growth this year is expected to slow to a pace more in line with broader debt aggregates However, institutional money funds are likely to continue their robust gains, contributing to a further diminution in M3 velocity and, possibly, to growth of this aggregate above its price-stability range.

Domestic nonfinancial debt grew 6¼ percent in 1998, somewhat above the middle of the 3 percent to 7 percent growth range the Committee established last February. This robust growth reflected large rises in the debt of businesses and households owing to substantial advances in spending as well as debt-financed mergers and acquisitions. However, the increase in private-sector debt was partly offset by the first annual decline in federal debt in almost thirty years. As with the monetary aggregates, the Committee left the range for debt growth unchanged for 1999. After an aberrant period in the 1980s during which debt growth greatly exceeded growth of nominal GDP, debt growth over the past decade has returned to its historical pattern of about matching growth of nominal GDP, and the Committee members expect debt to fall within its range this year.

Economic and Financial Developments in 1998 and Early 1999

The U.S. economy continued to display great vigor in 1998, despite a sharp slowing of growth in foreign economies and an unsettled world financial environment. According to the Commerce Department's advance estimate, real GDP increased a little more than 4 percent over the four quarters of the year. The economic difficulties facing many of our trading partners and the strength of the dollar through much of the year led to sluggishness in real exports of goods and services. However, the drag on the economy from that source was more than offset by exceptional strength in the real expenditures of households and businesses, which were powered by strong real income growth, large gains in the value of household wealth, ready access to finance during most of the year, and widespread optimism regarding the future of the economy. Although turmoil in financial markets seemed to threaten the economy for a time in late summer and early autumn, that threat later receded, in part because of the steps taken by the Federal Reserve to prevent the tightening of credit markets from impairing the expansion of activity. The final quarter of the year brought brisk expansion of employment and income, and the limited indicators of activity in early 1999 have been strong, on balance.

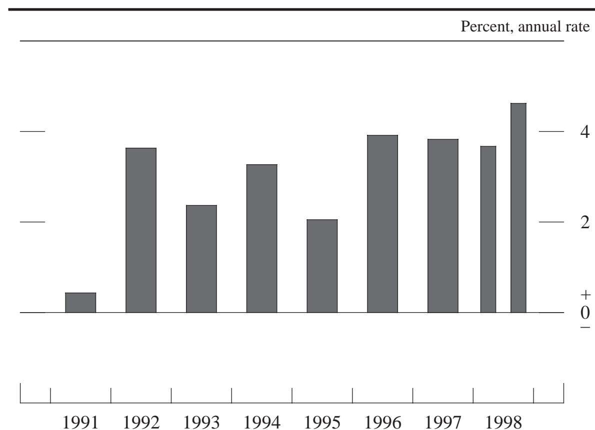
The increase in the general price level this past year was smaller than that in the previous year, which had itself been among the smallest in decades. The chain-type price index for GDP rose slightly less than 1 percent. The further slowing of price increases was in large part a reflection of sluggish conditions in the world economy, which brought declines in the prices of a wide range of imported goods, including oil and other primary commodities. In the domestic economy, nominal hourly compensation of workers picked up only slightly despite the tightness of the labor market, and much of the compensation increase was offset by gains in labor productivity. As a result, unit labor costs, the most important item in total business costs, rose only modestly.

The Household Sector

Personal consumption expenditures increased more than 5 percent in real terms in 1998, the biggest gain in a decade and a half. Support for the large rise in spending came from a combination of circumstances that, on the whole, were exceptionally favorable to households. Strong gains in employment and real hourly pay gave another appreciable boost to the growth of real labor income. At the same time, the wealth of households recorded another year of substantial increase, bolstered in large part by the continued rise in equity prices. Although not all balance sheet data for the end of 1998 are available, household net worth at that point appears to have been up about 10 percent from the level at the end of 1997. The cumulative gain in household wealth since 1994 has amounted to nearly 50 percent.

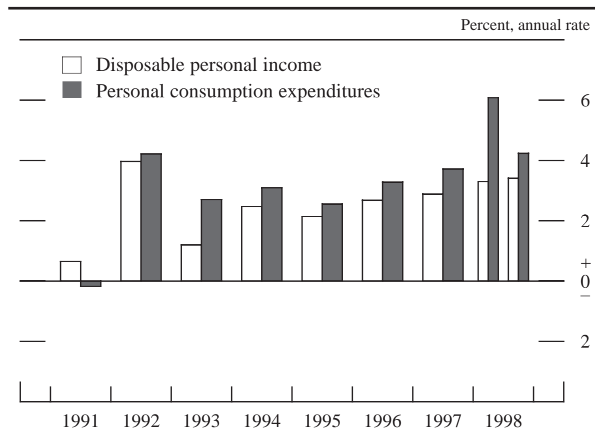
The rise in net worth probably accounts for much of the decline in the personal saving rate over the past few years, to an annual average of ½ percent in 1998. Households tend to raise their saving from current income when they feel that wealth must be increased to meet longer-run objectives, but they are willing to reduce their saving from current income when they feel that wealth already is at satisfactory levels. The

Change in real GDP

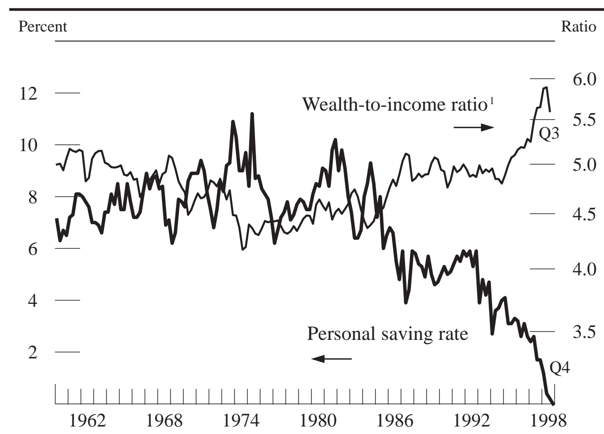


Note. In this chart and in subsequent charts that show the components of real GDP, changes are measured to the final quarter of the period indicated, from the final quarter of the preceding period. Last data point is from the advance GDP report for 1998:Q4.

Change in real income and consumption



Wealth and savings



1. The ratio of net worth of households to disposable personal income.

low level of the saving rate in 1998 is not so remarkable when gauged against a wealth-to-income ratio that has been running in a range well above its longer-run historical average.

All of the major categories of personal consumption expenditures—durables, nondurables, and services—recorded gains in 1998 that were the largest of the 1990s. Spending on durable goods rose more than 12 percent over the year. Within that category, expenditures on home computers once again stood out, rising roughly 70 percent in real terms, a gain that reflected both increased nominal outlays and a further substantial decline in computer prices. Consumer outlays on motor vehicles also rose sharply, despite some temporary limitations on supply from a midyear auto strike. Spending on most other types of durable goods registered increases that were well above the averages of the past decade or so. Because goods such as these are not consumed all at once—but, rather, add to stocks of durable goods that will be yielding services to consumers for a number of years—they embody a form of economic saving that is not captured in the normal measure of the saving rate in the national income accounts.

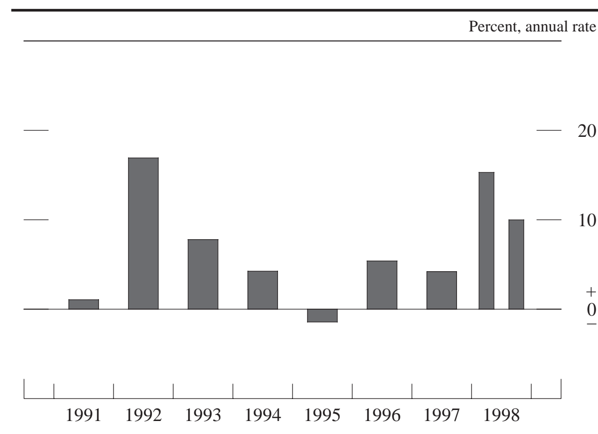
The increases in income and net worth that led households to boost consumption expenditures also led them to invest heavily in additions to the stock of housing. Declines in mortgage interest rates weighed in as well, helping to maintain the affordability of housing even as house prices moved up somewhat faster than overall inflation. These developments brought the objective of owning a home within the reach of a greater number of households, and the home-ownership rate, which has been trending up this decade, rose to another new high in 1998.

In the single-family sector, sales of new and existing homes surged, the former rising more than 10 percent from the previous year's total and the latter more than 13 percent. Construction of single-family houses strengthened markedly. The number of these units started during the year was the largest since the late 1970s, and it exceeded the previous year's total by about 12 percent. In the fourth quarter, unusually mild weather permitted builders to maintain activity later into the season than they normally would have and gave an added kick to housing starts. Starts increased further in January of this year, despite harsher weather in some regions.

In contrast to the strength in the single-family sector, the number of multifamily units started in 1998 was up only a little from the total for 1997. After bottoming out at a very low level early in the 1990s, construction of these units had been trending back up fairly briskly until this past year. But with vacancy rates on multifamily rental units running a touch higher this past year, builders and their creditors may have become concerned about adding too many new units to the stock. Financing appeared generally to be in ample supply for projects that looked promising; during the period of financial turmoil, the flow of credit was supported by substantial purchases of multifamily mortgages and mortgage-backed securities by Freddie Mac and Fannie Mae.

Total outlays for residential investment increased about 12½ percent in real terms during 1998, according to the Commerce Department's initial tally. The large increase reflected not only the construction work undertaken on new residential units during the year but also sizable advances in real outlays for home improvements and in the volume of sales activity being carried on by real estate brokers, which generated substantial gains in commissions.

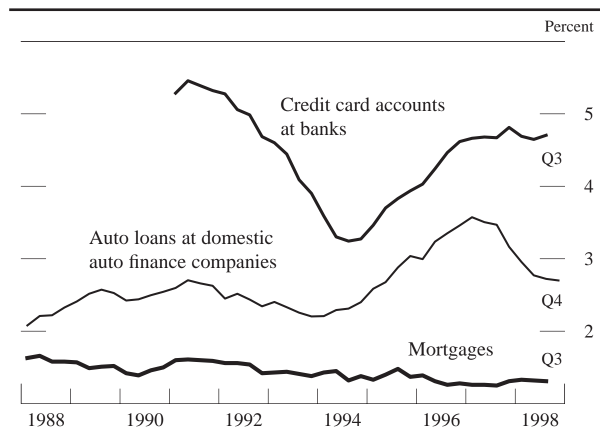
Change in real residential investment



The robust growth in household expenditures in 1998 was accompanied by an expansion of household debt that likely exceeded 8½ percent, a somewhat larger rise than in other recent years. Nonmortgage debt increased about 6 percent, about 2 percentage points above the previous year's pace but down considerably from the double-digit increases posted in 1994 and 1995. Home mortgage debt is estimated to have jumped more than 9 percent, its largest annual advance since 1990, boosted in part by the robust housing market. In addition, with mortgage rates reaching their lowest levels in many years, many households refinanced existing mortgages, and some households likely took the opportunity presented by refinancing to increase the size of their mortgages, using the extra funds raised to finance current expenditures or to pay down other debts.

The growth in household debt reflected both supply and demand influences. With wealth rising faster than income over the year and with consumer confidence remaining at historically high levels, households were willing to boost their indebtedness to finance increased spending. In addition, lenders generally remained accommodative toward all but the most marginal households, even after the turmoil in many financial markets in the fall. After a more general tightening of loan conditions in response to a rise in losses on such loans between mid-1995 and mid-1997, a smaller and declining fraction of banks tightened consumer lending standards and terms last year, according to Federal Reserve surveys. However, the availability of high loan-to-value and subprime home equity loans likely was reduced in the fall because of difficulties in the market for securities backed by such loans.

Delinquency rates on household loans



Note. The data are quarterly. Data on credit-card delinquencies are from bank Call Reports; data on auto loan delinquencies are from the Big Three automakers; data on mortgage delinquencies are from the Mortgage Bankers Association.

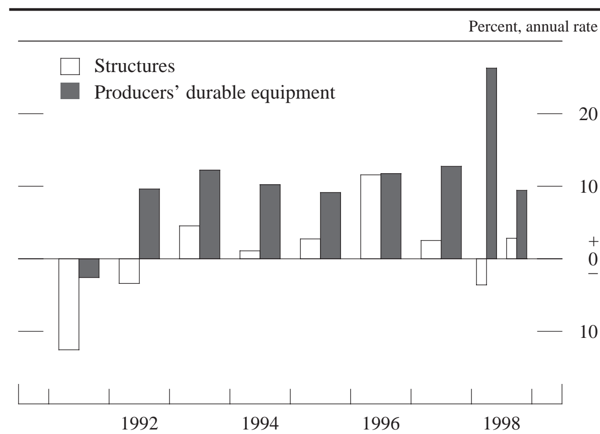
Despite the rapid increase in debt, measures of household financial stress were relatively stable last year, although some remained at high levels. The delinquency rate on home mortgages has stayed quite low in recent years, while the delinquency rate on auto loans at domestic auto finance companies has trended lower. The delinquency rate on credit card loans at banks fluctuated in a fairly narrow range in 1997 and 1998, but it remained elevated after having posted a substantial rise over the previous two years. Personal bankruptcy filings have followed a broadly similar pattern: Annual growth has run at about 3 percent over the past year and a half, down from annual increases of roughly 25 percent between mid-1995 and early 1997. The stability of these measures over the past couple of years likely owes in part to the earlier tightening of standards and terms on consumer loans. In addition, lower interest rates and longer loan maturities, which resulted from the shift toward mortgage finance, have helped to mitigate the effects of increased borrowing on household debt-service burdens.

The Business Sector

Business fixed investment increased about 12½ percent during 1998, with a 17½ percent rise in equipment spending more than accounting for the overall advance. The strength of the economy and optimism about its longer-run prospects provided underpinnings for increased investment. Outlays were also bolstered by the efficiencies obtainable with new technologies, by the favorable prices at which many types of capital equipment could be purchased, and, except during the period of financial market turmoil, by the ready availability and low cost of finance, either through borrowing or through the issuance of equity shares.

Real expenditures on office and computing equipment, after having risen at an average rate of roughly 30 percent in real terms from 1991 through 1997, shifted into even higher gear in 1998, climbing about 65 percent. The outsized increase likely owed in part to the efforts of some businesses to put new computer systems in place before the end of the millennium, in hopes of circumventing potential difficulties arising from the Y2K problem. But, beyond that, investment in computers is being driven by the same factors that have been at work throughout the expansion— namely, the introduction of machines that offer greater computing power at increasingly attractive

Change in real business fixed investment



prices and that provide businesses new and more efficient ways of organizing their operations. Price declines this past year were especially large, as the cost reductions associated with technical change were augmented by heightened international competition in the markets for semiconductors and other computer components and by price cutting to work down the stocks of some assembled products.

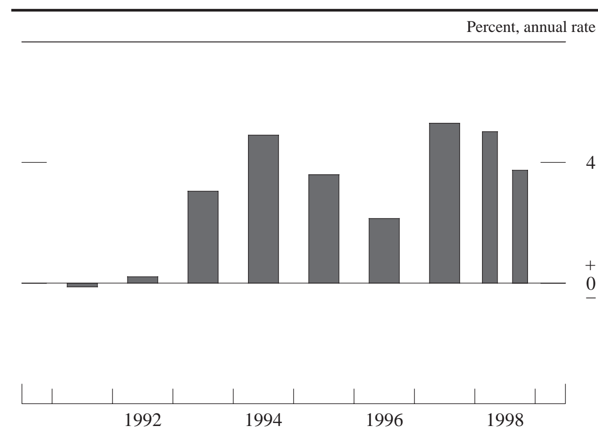
Investment in communications equipment—another high-tech category that is an increasingly important part of total equipment outlays—rose about 18½ percent in 1998. After having traced out an erratic pattern of ups and downs through the latter part of the 1980s and the early 1990s, real outlays on this type of equipment began to record sustained large annual increases in 1994, and the advance last year was one of the largest. Spending on other types of equipment displayed varying degrees of strength across different sectors but recorded a sizable gain overall. Investment in transportation equipment was strong across the board, spurred by the need to move greater volumes of goods or to carry more passengers in an expanding economy. Spending on industrial machinery advanced about 4½ percent after larger gains in most previous years of the expansion, a pattern that mirrored a slowing of output growth in the industrial sector.

Business investment in nonresidential structures, which accounts for slightly more than 20 percent of total business fixed investment, was down slightly in 1998, according to the advance estimate. Sharply divergent trends were evident within the sector, ranging from considerable strength in the construction of office buildings to marked weakness in the construction of industrial buildings. The waxing and waning of industry-specific construction cycles appears to be the main explanation for the diverse outcomes of this past year. Although some of the more speculative construction plans may have been shelved because of a tightening of the terms and standards on loans, partly in reaction to the financial turmoil, most builders appear to have been able to eventually obtain financing. Despite the sluggishness of spending on structures this past year, the level of investment remained high enough to generate continued moderate growth in the real stock of structures.

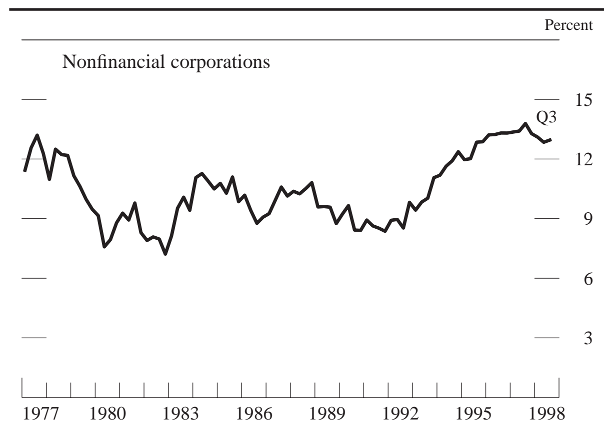
Business inventories increased about 4½ percent in real terms this past year after having risen more than 5 percent during 1997. Stocks grew at a 7 percent annual rate in the first quarter, appreciably faster than final sales, but inventory growth over the remainder of the year was considerably slower than in the first quarter. At year-end, stocks in most nonfarm industries were at levels that did not seem likely to cause firms to restrain production going forward. Inventories of vehicles may even have been a little on the lean side, as a result of both a strike that held down assemblies through the middle part of 1998 and exceptionally strong demand, which prevented the rebuilding of stocks later in the year. By contrast, inventories at year-end appear to have been excessive in a few nonfarm industries that have been hurt by the sluggish world economy. Stocks of farm commodities also appeared to be excessive, having been boosted further this past year by large harvests and sluggish export demand.

The economic profits of U.S. corporations—that is, book profits adjusted so that inventories and fixed capital are valued at their current replacement cost—rose further, on net, over the first three quarters of 1998 but at a much slower pace than in most other years of the current expansion. Companies' earnings from operations in the rest of the world fell back a bit, as did the profits of private financial corporations

Change in nonfarm business inventories



Before-tax profits as a share of GDP



NOTE. Profits from domestic operations, with inventory valuation and capital consumption adjustments, divided by gross domestic product of nonfinancial corporate sector.

from domestic operations. The profits of nonfinancial corporations from domestic operations increased at an annual rate of about 1¾ percent. Although the volume of output of the nonfinancial companies continued to rise rapidly, profits per unit of output were squeezed a bit by companies' difficulties in raising prices in step with costs in a competitive market environment.

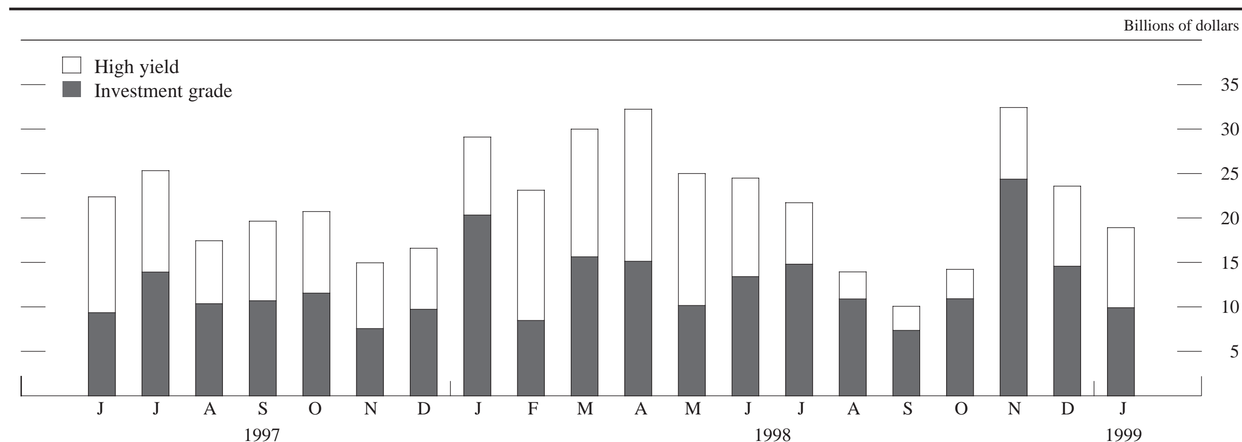
With profits expanding more slowly and investment spending still on the upswing, businesses' external funding needs increased substantially last year. Aggregate borrowing by the nonfinancial business sector is estimated to have expanded 9½ percent from the end of 1997 to the end of 1998, the largest increase in ten years. The rise reflected growth in all major types of business debt. Business borrowing was also boosted by substantial merger and acquisition activity. Indeed, mergers and acquisitions, share repurchases, and foreign purchases of U.S. firms last year overwhelmed the high level of both initial and seasoned public equity issues, and net equity retirements likely exceeded $250 billion.

The disruptions in the financial markets in late summer and early fall appear to have had little effect on total business borrowing but caused a substantial temporary shift in the sources of credit. With investors favoring high credit quality and liquidity, yields on lower-rated corporate bonds rose despite declining Treasury rates; the spread of yields on junk bonds over those on comparable Treasury securities roughly doubled between mid-summer and mid-autumn before falling back somewhat as conditions in financial markets eased. The spread of rates on lower-tier commercial paper over those on higher-quality paper rose substantially during the fall but had retraced the rise by the early part of this year.

Reflecting these adverse market conditions, nonfinancial corporate bond issuance fell sharply in August and remained low through mid-October, with issuance of junk bonds virtually halted for a time. Commercial paper issuance rose sharply in August and September, as some firms apparently decided to delay bond issues, turning temporarily to the commercial paper market instead. Bond issuance picked up again in late October, however, and issuance in November was robust. Reflecting this rebound, commercial paper outstanding fell back in the fourth quarter. More recently, bond issuance has remained healthy, while borrowing in the commercial paper market has picked up.

During the period when financial markets were strained, some borrowers substituted bank loans—in some cases under credit lines priced before the mar-

Gross corporate bond issuance

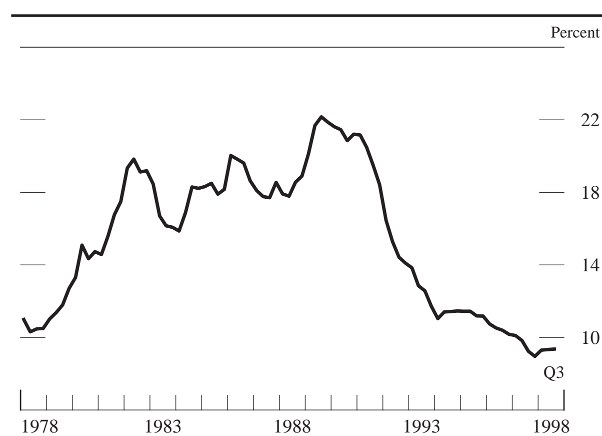


NOTE. Excludes unrated issues and issues sold abroad.

kets became volatile—for other sources of credit, and business loans at banks expanded very rapidly for a time before tailing off late in the year. Federal Reserve surveys indicate that banks responded to the turmoil in financial markets by tightening standards and terms on new loans and credit lines, especially loans to larger customers and those to finance commercial real estate ventures. The tightening reflected the less favorable or more uncertain economic outlook as well as a reduced tolerance for risk on the part of some banks. Bank lending standards and terms appear to have tightened only a little further since the fall, however, and business loans at banks have expanded a bit since the end of December.

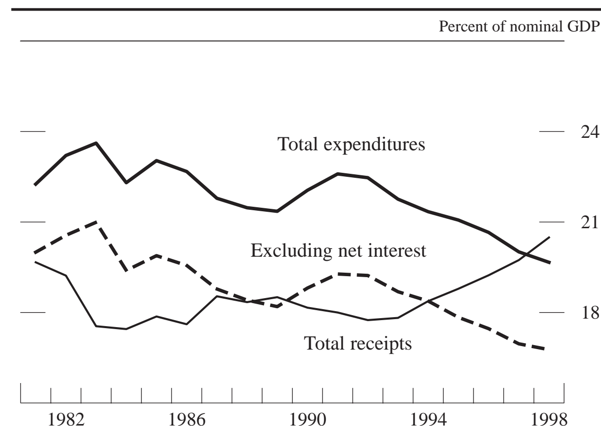
Despite the rapid growth in debt and the relatively small gain in profits last year, the financial condition of nonfinancial businesses remained strong. Interest rates for many businesses fell, on balance, over the course of the year, and bond yields for investment-grade firms reached their lowest level in many years. Reflecting these low borrowing costs, the aggregate debt-service burden for nonfinancial corporations, measured as the ratio of net interest payments to cash flow, remained about 9½ percent, near its low of 9 percent in 1997 and less than half the peak level reached in 1989. The delinquency rate for banks' commercial and industrial loans also remained near the trough reached in late 1997, while that for commercial real estate loans fell a bit further from the already very low level posted in 1997. Although Moody's Investors Service downgraded more nonfinancial firms than it upgraded over the second half of the year, the downgraded firms were smaller on average, and so the debt of those upgraded about equaled the debt of those downgraded. Through October, business failures remained at the low end of the range seen over the past decade.

Net interest payments of nonfinancial corporations relative to cash flow



NOTE. The data are quarterly.

Federal receipts and expenditures



NOTE. Data on receipts and expenditures are from the unified budget and are for the fiscal year ended in September.

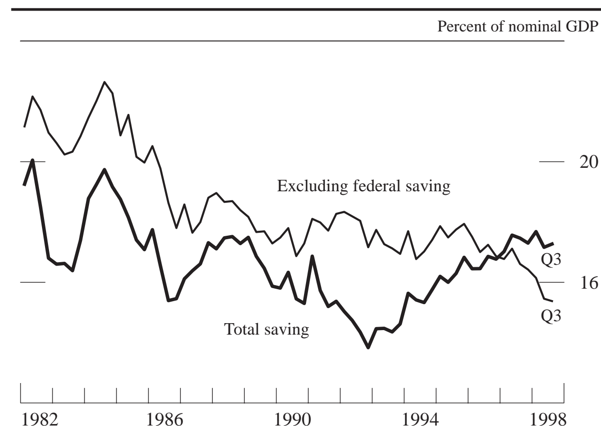
The Government Sector

The federal government recorded a surplus in the unified budget this past fiscal year for the first time in nearly three decades. The surplus, amounting to $69 billion, was equal to about ¾ percent of GDP, a huge turnabout from the deficits of the early 1990s, which in some years were more than 4½ percent of GDP. The swing from deficit to surplus over the past few years is partly the result of fiscal policies aimed at lowering the deficit and partly the result of the strength of the economy and the stock market. Excluding net interest payments—a charge stemming from past deficits—the government recorded a surplus of more than $300 billion in fiscal 1998.

The improvement in the government's saving position has permitted national saving—the combined gross saving of households, businesses, and governments—to move up about 3 percentage points from its low of a few years ago, even though personal saving has fallen sharply. In turn, that increase in national saving has helped facilitate the boom in investment spending—in contrast to the experience of the 1980s and early 1990s, when persistent large budget deficits tended to reduce national saving, boost interest rates higher than they otherwise would have been, and thereby crowd out private capital formation.

Federal receipts in the unified budget in fiscal year 1998 were up 9 percent from the previous fiscal year, with much of the gain coming from personal income

National saving



NOTE. National saving includes the gross saving of households, businesses, and governments.

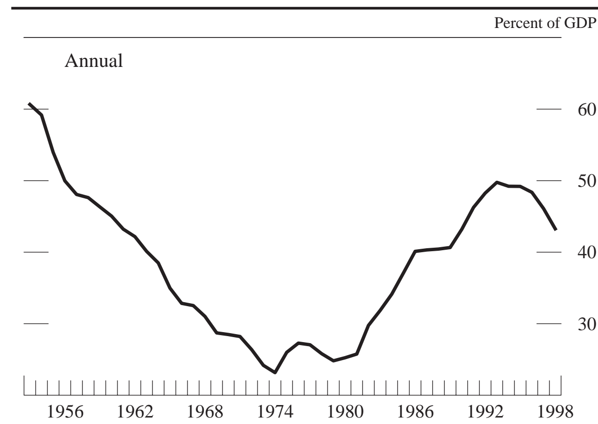
taxes, which rose more than 12 percent for a second consecutive year. These receipts have been rising faster than personal income in recent years, for several reasons: Tax rates at the high end of the income scale were raised by legislation that was passed in 1993 to help reduce the deficit; more taxpayers have moved into higher tax brackets as income has increased; and large increases in asset values have raised tax receipts from capital gains. Social insurance tax receipts, the second most important source of federal revenue, increased 6 percent in fiscal 1998, just a touch faster than the increase in fiscal 1997 and roughly in step with the growth of wages and salaries. Receipts from the taxes on corporate profits, which account for just over 10 percent of federal revenues, rose less rapidly than in other recent years, restrained by the slower growth of corporate profits. In the first three months of fiscal 1999, net receipts from corporate taxes dipped below year-earlier levels, but gains in individual income taxes and payroll taxes kept total federal receipts on a rising trajectory.

Unified outlays increased 3¼ percent in fiscal 1998 after having risen 2½ percent in the preceding fiscal year. Net interest payments and nominal expenditures for defense fell slightly in the latest fiscal year, and outlays for income security and Medicare rose only a little. Social security expenditures increased moderately but somewhat less than in other recent years. By contrast, the growth of Medicaid payments picked up to about 6 percent after having increased less than 4 percent in each of the preceding two years; however, even the 1998 rise was not large compared with those of many earlier years when both medical costs and Medicaid caseloads were increasing rapidly and rates of federal reimbursement to the states were being raised. Federal spending in fiscal 1999 will be boosted to some degree by new budget authority for a variety of functions, including defense, embassy security, disaster relief, preparation for Y2K, and aid to agriculture; this authority was created in emergency legislation that provided an exception to statutory spending restrictions.

Real federal outlays for consumption and investment, the part of federal spending that is counted in GDP, increased 1 percent, on net, from the final quarter of calendar year 1997 to the final quarter of 1998. A reduction in real defense outlays over that period was more than offset by a jump in the nondefense category.

With the budget balance shifting from deficit to surplus, the stock of publicly held federal debt declined last year for the first time since 1969 and fell further as a share of GDP. From the end of 1997 to the end of 1998, U.S. government debt fell 1½ percent, as the government reduced the outstanding stock of both bills and coupon securities. Despite the reduction in its debt, the federal government continued substantial gross borrowing to fund the retirement of maturing securities. However, with the need for funds trimmed substantially, the Treasury changed its auction schedules, discontinuing the three-year note auctions and moving to quarterly, rather than monthly, auctions of five-year notes. By reducing the number of coupon security issues, the Treasury is able to boost the size of each, thereby contributing to their liquidity. The decrease in the total volume of coupon securities is intended to boost the size of bill offerings over time, helping liquidity in that market and also allowing, as the Treasury prefers, for balanced issuance across the yield curve. The Treasury also announced in October that all future bill and coupon security auctions would employ the single-price format that had already been adopted for the

Federal government debt held by the public



two-year and five-year note auctions and for auctions of inflation-indexed securities. The Treasury judged that the single-price format had reduced servicing costs and resulted in broader market participation.

The Treasury continued to auction inflation-indexed securities in substantial volume last year in an effort to build up this part of the Treasury market. In April, the Treasury issued its first thirty-year indexed bond, and in September it announced a regular schedule of ten- and thirty-year indexed security auctions. The Treasury also began offering inflation-indexed savings bonds in September.

State and local governments recorded further increases in their budgetary surpluses in 1998, both in absolute terms and as a share of GDP. Revenue from the taxes on individuals' incomes has been growing very rapidly, keeping total receipts on a solid upward course. At the same time, the growth of transfer payments, which had threatened to overwhelm state and local budgets earlier in the decade, has slowed substantially in recent years. Growth of other types of spending has been trending up moderately, on balance. The 1998 rise in real expenditures for consumption and investment amounted to about 2¼ percent, according to the initial estimate; annual gains have been in the range of 2 percent to 2¾ percent in each of the past seven years.

Despite rising surpluses, state and local government debt increased an estimated 7 percent in 1998, a pickup of about 2 percentage points from growth in 1997. Somewhat more than half of the long-term borrowing by state and local governments last year reflected new borrowing to fund current and anticipated capital spending on utilities, transportation, education, and other capital projects. The combination of budget surpluses and relatively heavy borrowing likely reflected a number of factors. First, some of these governments may have spent the newly raised funds on capital projects while at the same time building up surpluses in "rainy day funds" for later use. Second, because state and local governments under some circumstances are allowed to hold funds raised in the markets for as long as five years before spending them, some of the money raised last year may not have been spent. Finally, there was a substantial volume of "advance refunding" last year. In an advance refunding, the borrower issues new bonds before existing higher-rate bonds can be called, in anticipation of calling the old bonds on the date that option becomes available. While this sort of refinancing temporarily boosts total debt, it allows the state or local government to lock in the lower rate even if municipal bond yields subsequently rise over the period before the call date. The high level of advance-refunding activity last year was the result of lower borrowing costs. Although yields on tax-exempt municipal securities did not decline nearly as much as those on comparable Treasury securities, they nonetheless reached their lowest levels in many years. In addition, rating agencies upgraded about five times as many state and local government issues last year as they downgraded, trimming borrowing costs further for the upgraded entities.

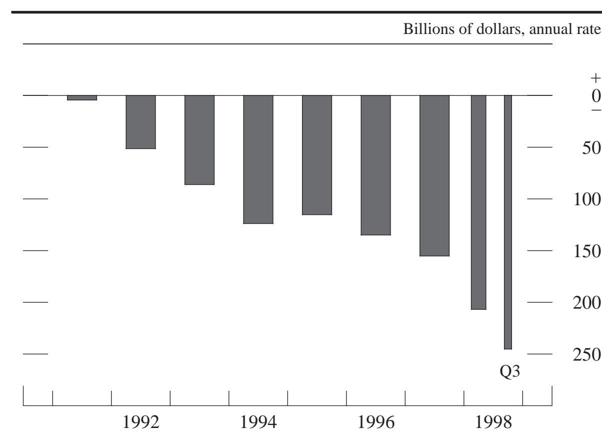
The External Sector

Trade and the Current Account

U.S. external balances deteriorated further in 1998, largely because of the disparity between the rapid growth of the U.S. economy and the sluggish growth of the economies of many of our trading partners. The nominal trade deficit for goods and services was $169 billion, considerably larger than the $110 billion deficit in 1997. For the first three quarters of the year, the current account deficit averaged $220 billion at an annual rate, substantially larger than the 1997 deficit of $155 billion. The large current account deficits of recent years have been funded with increased net foreign saving in the United States. As a result, U.S. gross domestic investment has exceeded the level that could have been financed by gross national saving alone, but at the cost of a rise in net U.S. external indebtedness.

The increase in the current account deficit last year was due to a decline in net exports of goods and services as well as a further weakening of net investment income from abroad. Until 1997, net investment income had helped to offset persistent trade deficits. But as the U.S. net external debt has risen in recent

U.S. current account

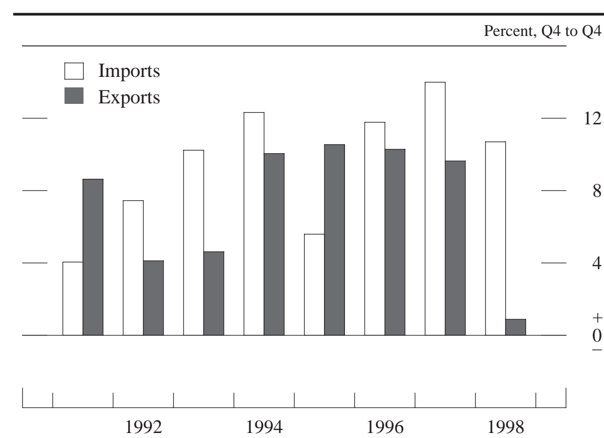


years, net investment income has become increasingly negative, moving from a $14 billion surplus in 1996 to a $5 billion deficit in 1997 and a deficit averaging $15 billion at an annual rate over the first three quarters of 1998. Net income from portfolio investment became increasingly negative during that period as the net portfolio liability position of the United States grew larger. In addition, net income from direct investment slowed last year because slower foreign economic growth lowered U.S. earnings on investment abroad, the appreciation of the dollar reduced the value of U.S. earnings, and buoyant U.S. growth boosted foreigners' earnings on direct investment in the United States.

The rise in the trade deficit reflected an increase of about 10 percent in real imports of goods and services during 1998, according to the advance estimates from the Commerce Department. The expansion was fueled by robust growth of U.S. domestic demand and by continued declines in import prices, which stemmed in part from the strength of the dollar through mid-August and in part from the effects of recessions abroad. Of the major trade categories, increases in imports were sharpest for finished goods, especially capital equipment and automotive products. The quantity of imported oil rose appreciably as demand increased in response to the strength of U.S. economic activity and lower oil prices, while domestic production declined slightly. The price of imported oil fell about $6.50 per barrel over the four quarters of the year. World oil prices fell in response to reduced demand associated with the economic slowdown in many foreign nations and with unusually warm weather in the Northern Hemisphere as well as to an increase in supply from Iraq.

Real exports of goods and services grew about 1 percent, on net, in 1998 after posting a 10 percent rise in 1997. Declines during the first three quarters (especially in machinery exports) were offset by a rebound in the fourth quarter, which was led by increases in exports of automotive products. The price competitiveness of U.S. products decreased, reflecting the appreciation of the dollar through mid-August. In addition, economic activity abroad weakened sharply; total average foreign growth (weighted by shares of U.S. exports) plunged from 4 percent in 1997 to an estimated ½ percent in 1998. Moderate expansion of exports to Europe, Canada, and Mexico was about offset by a decline in exports associated with deep recessions in Japan and the emerging Asian economies (particularly in the first half of the year) and in South America (in the second half of the year).

Change in real imports and exports of goods and services



Capital Flows

The financial difficulties in a number of emerging market economies had several noticeable effects on U.S. international capital flows in 1998. Financial turmoil put strains on official reserves in many emerging market economies. Foreign official assets in the United States fell $43 billion in the first three quarters of the year. This decline, which began in the fourth quarter of 1997, has been largest for developing countries, as many of them drew down their foreign exchange reserves in response to exchange rate pressures. OPEC nations' foreign official reserves also shrank in the first three quarters of 1998, as oil revenues dropped. Preliminary data indicate that foreign official assets in the United States, especially those of industrial countries, rebounded in the fourth quarter.

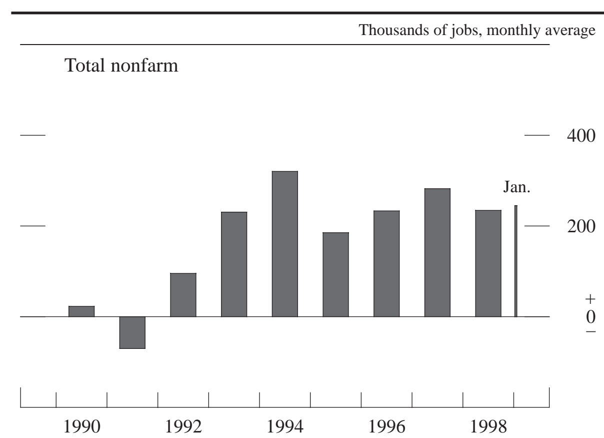
Private capital flows also were affected by the global turmoil. On a global basis, capital flows to emerging market economies fell substantially in the first half of 1998 and then dropped precipitously in late summer and early fall in the wake of the Russian crisis. During the first half of the year, U.S. residents acquired more than $40 billion of foreign securities. Net purchases virtually stopped in July, and in the August–October period U.S. residents, on net, sold about $40 billion worth of foreign securities. Preliminary data indicate a resumption of net U.S. purchases in the final two months of 1998. Foreign net purchases of U.S. securities, which were substantial in the first half of the year, fell off markedly in the July–October period, but preliminary data suggest a significant recovery in November and December. Thus, there is some evidence that the contraction in gross capital flows seen in late summer and early fall waned somewhat in the fourth quarter.

Balance of payments data available through the first three quarters of 1998 show that total private foreign purchases of U.S. securities amounted to $194 billion, somewhat below the level in the first three quarters of 1997. Private foreign purchases of U.S. Treasury securities were only $22 billion in the first three quarters, compared with $147 billion for all of 1997. Private foreigners' purchases of other U.S. securities shifted away from equities and toward bonds, relative to 1997. U.S. purchases of foreign securities slowed markedly from their 1997 pace, totaling only $27 billion for the first three quarters of 1998 compared with $89 billion for all of the preceding year. The contraction in private portfolio capital flows, though large, was overshadowed by huge direct investment capital flows, which resulted in part from a number of very large cross-border mergers. The $72 billion in foreign direct investment into the United States in the first three quarters, together with several large mergers that occurred in the fourth quarter, are certain to bring the total for last year well above the record-high $93 billion posted in 1997. Merger activity also buoyed U.S. direct investment abroad: The pace of such investment in the first three quarters suggests that the annual total will be near the record-high $122 billion recorded in 1997.

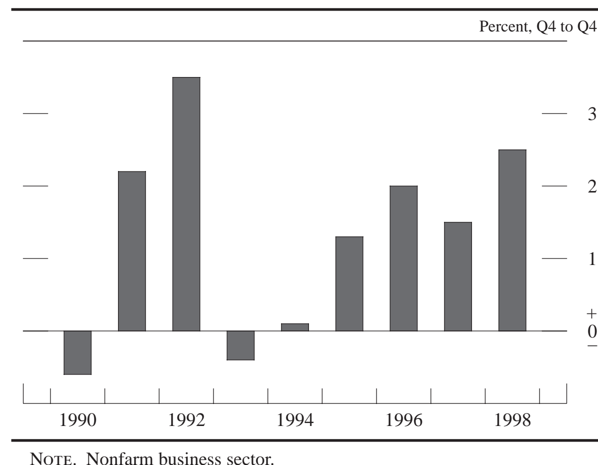
The Labor Market

The rapid growth of output in 1998 was associated with both increased hiring and continued healthy growth in labor productivity. The number of jobs on nonfarm payrolls rose about 2¼ percent from the end of 1997 to the end of 1998, a net increase of 2.8 million. Manufacturers reduced employment over the year, but in other parts of the economy the demand for labor continued to rise rapidly. The construction industry boosted employment about 6 percent over the year, and both the services industries and the finance, insurance, and real estate sector posted increases of more than 3½ percent. Stores selling building materials and home furnishings expanded employment rapidly, as did firms involved in computer services, communications, and managerial services. In the first month of 1999, nonfarm payrolls increased an additional 245,000.

Change in payroll employment



Change in output per hour



Note. Nonfarm business sector.

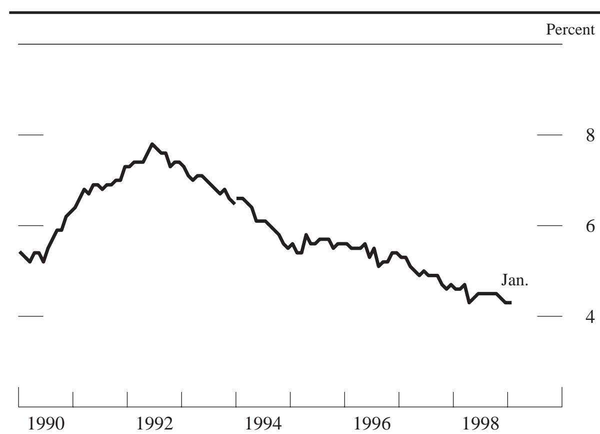
Output per hour in the nonfarm business sector rose 2½ percent in 1998 after having increased about 1¾ percent, on average, over the two previous years. By comparison, the average rate of rise during the 1980s and the first half of the 1990s was just over 1 percent per year. Because productivity often picks up to a pace above its long-run trend when economic growth accelerates, the results of the past three years might well be overstating the rate of efficiency gain that can be maintained in coming years. However, reasons for thinking that the trend might have picked up to some degree are becoming more compelling in view of the incoming data. The 1998 gain in output per hour was particularly impressive in this regard, in part because it came at a time when many businesses were diverting resources to correct the Y2K problem, a move that likely imposed a bit of drag on growth of output per hour. Higher rates of capital formation are raising the growth of capital per worker, and workers are likely becoming more skilled in employing the new technologies. Businesses not only are increasing their capital inputs but also are continuing to implement changes to their organizational structures and

operating procedures that might enhance efficiency and bolster profit margins.

The rising demand for labor continued to strain supply in 1998. The civilian labor force rose just a touch more than 1 percent from the fourth quarter of 1997 to the fourth quarter of 1998, and with the number of persons holding jobs rising somewhat faster than the labor force, the civilian unemployment rate fell still further. The unemployment rate was 4.3 percent at the end of 1998; the average for the full year—4.5 percent—was the lowest of any year in almost three decades. In January of this year, the size of the labor force rose rapidly, but so did employment, and the unemployment rate remained at 4.3 percent. The percentage of the working age population that is outside the labor force and is interested in obtaining work but not actively seeking it edged down further this past year and has been in the lowest range since the collection of these data began in 1970. With the supply of labor as tight as it is, businesses are reaching further into the pool of individuals who do not have a history of strong attachment to the labor force; persons who are attempting to move from welfare to work are among the beneficiaries.

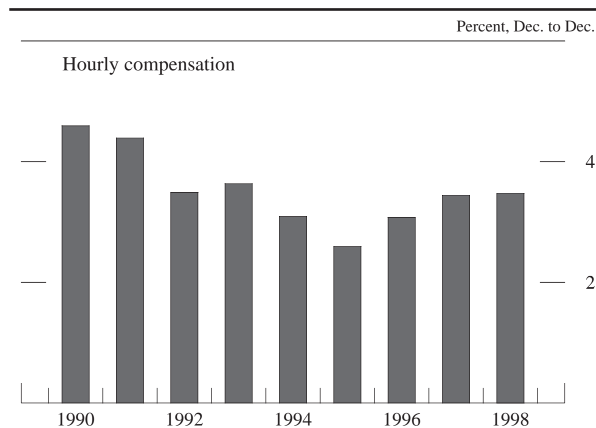
Workers have realized large increases in real wages and real hourly compensation over the past couple of years. The increases have come partly through faster gains in nominal pay than in the mid-1990s but also though reductions in the rate of price increase, which have been enhancing the real purchasing power of nominal earnings, perhaps to a greater degree than workers might have anticipated. According to the Labor Department's employment cost index, the hourly compensation of workers in private nonfarm industries rose 3½ percent in nominal terms during 1998, a touch more than in 1997 and ½ percentage point more than in 1996. Taking the consumer price index as the measure of price change, this increase in nominal hourly compensation translated into a 2 percent increase in real hourly pay, one of the largest on record in a series that goes back to the start of the 1980s; the gain was bigger still if the chain-type price index for personal consumption expenditures is used as the measure of consumer prices. Moreover, the employment cost index does not capture some of the forms of compensation that employers have been using to attract and retain workers—for example, stock options and signing bonuses.

Civilian unemployment rate



NOTE. The break in data at January 1994 marks the introduction of a redesigned survey; data from that point on are not directly comparable with those of earlier periods.

Change in employment cost index



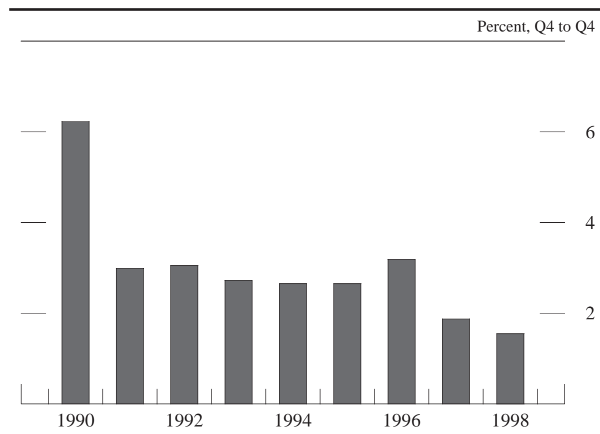
NOTE. Private industry, excluding farm and household workers.

Because of the rapid growth in labor productivity, unit labor costs have been rising much less rapidly than hourly compensation in recent years. The increase in unit labor costs in the nonfarm business sector was only 1½ percent in 1998. Businesses were unable to raise prices sufficiently to recoup even this small increase in costs, however. Labor gained a greater share of the income generated from production, and the profit share, though still high, fell back a little from its 1997 peak.

Prices

The broader measures of aggregate price change showed inflation continuing to slow in 1998. The consumer price index moved up 1½ percent over the four quarters of the year after having increased nearly 2 percent in 1997. A steep decline in energy prices in the CPI more than offset a small acceleration in the

Change in consumer prices



NOTE. Consumer price index for all urban consumers.

3. Alternative measures of price change

Percent

Price measure	1997	1998
Fixed-weight		
Consumer price index	1.9	1.5
Excluding food and energy	2.2	2.4
Chain-type		
Gross domestic product	1.7	.9
Gross domestic purchases	1.3	.5
Personal consumption expenditures	1.5	.8
Excluding food and energy	1.6	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 previous year.

prices of other goods and services. Only part of the deceleration in the total CPI was attributable to technical changes in data collection and aggregation.[1]

Measures of aggregate price change from the national income and product accounts, which draw heavily on data from the CPI but also use data from other sources, showed a somewhat more pronounced deceleration of prices in 1998. The chain-type price index for personal consumption expenditures, the measure of consumer prices in the national accounts, rose ¾ percent after increasing 1½ percent in 1997. The chain-type price index for gross domestic purchases—the broadest measure of prices paid by U.S. households, businesses, and governments—increased only ½ percent in 1998 after moving up 1¼ percent over the previous year. The rise in the chain-type price index for gross domestic product of slightly less than 1 percent was down from an increase of 1¾ percent in 1997.

Developments in the external sector helped to bring about the favorable inflation outcome of 1998. Consumers benefited directly from lower prices of finished goods purchased from abroad. Lower prices for imports probably also held down the prices charged by domestic producers, not only because businesses were concerned about losing market share to foreign competitors but also because declines in commodity prices in sluggish world markets helped reduce domestic production costs to some degree.

In manufacturing, one of the sectors most heavily affected by the softness in demand from abroad, the rate of plant capacity utilization fell noticeably over the year—even as the unemployment rate continued to decline. The divergence of these two key measures of resource use—the capacity utilization rate and the unemployment rate—is unusual: They typically have exhibited similar patterns of change over the course of the business cycle. Because the unemployment rate applies to the entire economy, it presumably should be a better indicator of the degree of pressure on resources in general. At present, however, slack in the goods-producing sector—a reflection of the sizable additions to capacity in this country and excess capacity abroad—seemingly has enforced a discipline of competitive price and cost control that has affected the economy more generally.

Prices this past year tended to be weakest in the sectors most closely linked to the external economy. The price of oil fell almost 40 percent from December 1997 to December 1998. This drop triggered steep declines in the prices of petroleum products purchased directly by households. The retail price of motor fuel fell about 15 percent over the four quarters of the year, and the price of home heating fuel also plunged. With the prices of natural gas and electricity also falling, the CPI for energy was down about 9 percent over the year after having slipped 1 percent in 1997.

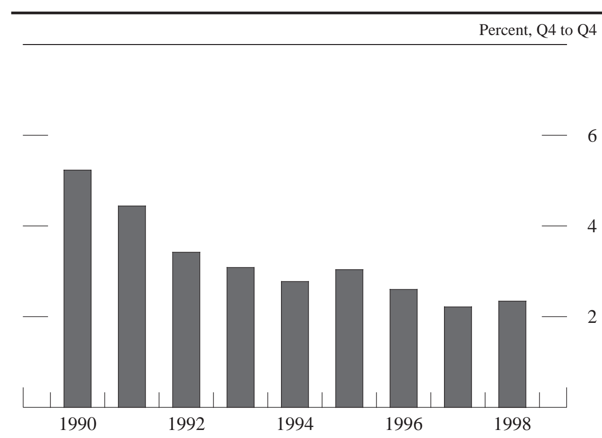
Large declines in the prices of internationally traded commodities other than oil pulled down the prices of many domestically produced primary inputs. The producer price index for crude materials other than energy, which reflects the prices charged by domestic producers of these goods, fell more than 10 percent over the year. However, because these non-oil commodities account for a small share of total production costs, the effect of their decline on inflation was much less visible further down the

1. Since the end of 1994, the Bureau of Labor Statistics has taken a number of steps to make the consumer price index a more accurate price measure. The agency also introduced new weights into the CPI at the start of 1998. In total, these changes probably reduced the 1998 rise in the CPI by slightly less than ½ percentage point, relative to the increase that would have been reported using the methodologies and weights in existence at the end of 1994. Without the changes that took effect in 1998, the deceleration in the CPI last year probably would have been about half as large as was reported.

chain of production. Intermediate materials prices excluding food and energy fell about 1½ percent over the four quarters of the year, and the prices of finished goods excluding food and energy rose about 1½ percent. The latter index was boosted, in part, by an unusually large hike in tobacco prices that followed the settlement last fall of states' litigation against the tobacco companies. In the food sector as well, the effects of declining commodity prices became less visible further down the production chain; the PPI for finished foods was about unchanged, on net, over the year, and price increases at the retail level, though small, were somewhat larger than those of the preceding year.

Consumer prices excluding those of food and energy—the core CPI—continued to rise in 1998, but not very rapidly. As measured by the CPI, these prices increased nearly 2½ percent from the final quarter of 1997 to the final quarter of 1998, a shade more than in 1997. The chain-type price index for personal consumption expenditures excluding food and energy—the core PCE price index—decelerated a bit further, rising at roughly half the pace of the core CPI. Methodological differences between the two measures are numerous; some of the technical problems that have plagued the CPI are less pronounced in the PCE price measure, but the latter also depends partly on imputations of prices for which observations are not available. Both measures, however, seemed to suggest that the underlying trend of consumer price inflation remained low. A similar message came from surveys of consumers, which showed expectations of future price increases easing a bit further in 1998—although, as in other recent years, the expected increases remained somewhat higher than actual price increases.

Change in consumer prices excluding food and energy



Note. Consumer price index for all urban consumers.

U.S. Financial Markets

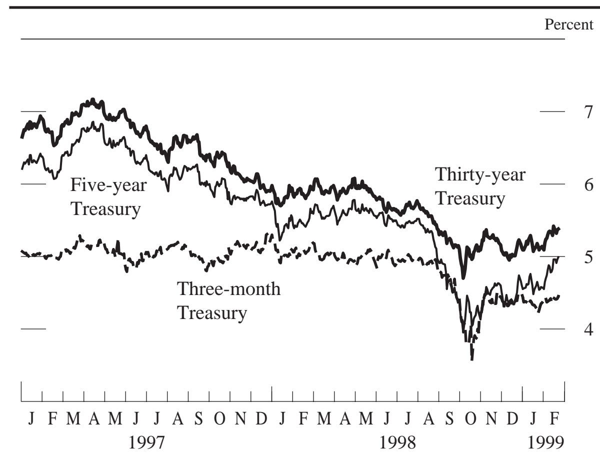
U.S. interest rates fluctuated in fairly narrow ranges over the first half of 1998, and most equity price indexes posted substantial gains. However, after the devaluation of the Russian ruble in August and subsequent difficulties in other emerging market economies, investors appeared to reassess the risks and uncertainties facing the U.S. economy and concluded that more cautious postures were in order. That sentiment was reinforced by the prospect of an unwinding of positions by some highly leveraged investors. The resulting shift toward safe, liquid investments led to a substantial widening of risk spreads on debt instruments and to volatile changes in the prices of many assets. Financial market volatility and many risk spreads returned to more normal levels later in the year and early this year, as lower interest rates and robust economic data seemed to reassure market participants that the economy would remain sound, even in the face of additional adverse shocks from abroad. However, lenders remained more cautious than they had been in the first part of last year, especially in the case of riskier credits.

Interest Rates

Over the first half of 1998, short-term Treasury rates moved in a narrow range, anchored by unchanged monetary policy, while yields on intermediate- and long-term Treasury securities varied in response to the market's shifting assessment of the likely impact of foreign economic difficulties on the U.S. economy. In late 1997 and into 1998, spreading financial crises in Asia were associated with declines in U.S. interest rates, as investors anticipated that weakness abroad would constrain U.S. economic growth and cushion the impact of tight U.S. labor markets on inflation. However, interest rates moved back up later in the first quarter of 1998, as the U.S. economy continued to expand at a healthy pace, fueled by hefty gains in domestic demand. After a couple of months of small changes, Treasury rates fell in May and June, when concerns about foreign economies, particularly in Asia, once again led some observers to expect weaker growth in the United States and may also have boosted the demand for safe Treasury securities relative to other instruments.

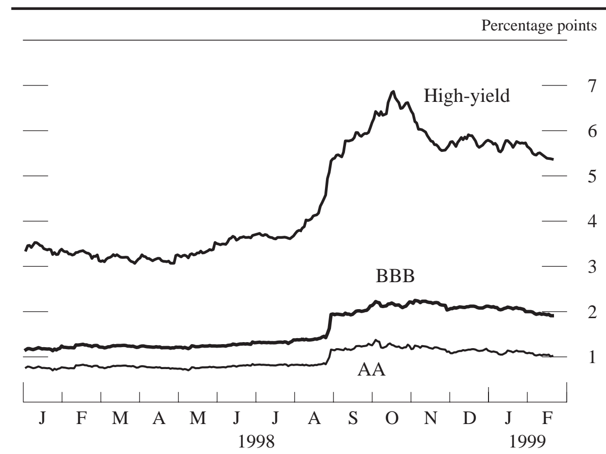
Treasury rates changed little, on net, in the early summer, but they slipped lower in August, reflecting increased concern about the Japanese economy and financial problems in Russia. The default by Russia on some government debt obligations and the devalu-

Selected Treasury rates, daily data



NOTE. Last observations are for February 19, 1999.

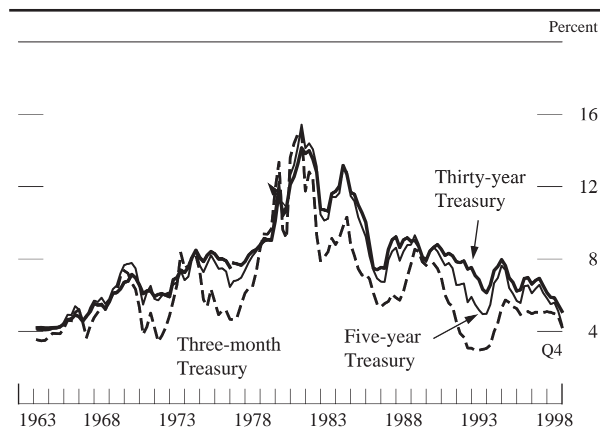
Spreads of corporate bond yields over Treasury security yields



NOTE. The data are daily. The spread of high-yield bonds compares the yield on the Merrill Lynch Master II index with that on a seven-year Treasury; the other two spreads compare yields on the appropriate Merrill Lynch indexes with that on a ten-year Treasury. Last observations are for February 19, 1999.

ation of the ruble in mid-August not only resulted in sizable losses for some investors but also undermined confidence in other emerging market economies. The currencies of many of these economies came under substantial pressure, and the market value of the international debt obligations of some countries declined sharply. U.S. investors shared in the resulting losses, and U.S. economic growth and the profits of U.S. companies were perceived to be vulnerable. In these circumstances, many investors, both here and abroad, appeared to reassess the riskiness of various counterparties and investments and to become less willing to bear risk. The resulting shift of demand toward safety and liquidity led to declines of 40 to 75 basis points in Treasury coupon yields between mid-August and mid-September. In contrast, yields on higher-quality private securities fell much less, and those on issues of lower-rated firms increased sharply. As a result, spreads of private rates over Treasury rates rose substantially, reaching levels not seen for many years, and issuance of corporate securities dropped sharply.

Selected Treasury rates, quarterly data



NOTE. The twenty-year Treasury bond rate is shown until the first issuance of the thirty-year Treasury bond in February 1977.

The desire of investors to limit risk-taking as markets became troubled in the late summer showed up clearly in mutual fund flows. High-yield bond funds, which had posted net inflows of more than $1 billion each month from May to July, saw a $3.4 billion outflow in August and inflows of less than $400 million in September and October before rebounding sharply in November. By contrast, inflows to government bond funds jumped from less than $1 billion in July to more than $2 billion a month in August and September. Equity mutual funds posted net outflows totaling nearly $12 billion in August, the first monthly outflow since 1990, and inflows over the rest of the year were well below those earlier in the year.

In part, the foreign difficulties were transmitted to U.S. markets by losses incurred by leveraged investors—including banks, brokerage houses, and hedge funds—as the prospects for distress sales of riskier assets by such investors weighed on market sentiment, depressing prices. Many of these entities did reduce the scale of their operations and trim their risk exposures, responding to pressures from more cautious counterparties. As a result, liquidity in many markets declined sharply, with bid–asked spreads widening and large transactions becoming more difficult to complete. Even in the market for Treasury securities, investors showed an increased preference for the liquidity offered by the most recent issues at each maturity, and the yields on these more actively

traded ‘‘on-the-run’’ securities fell noticeably relative to those available on ‘‘off-the-run’’ issues, the ones that had been outstanding longer.

Conditions in U.S. financial markets deteriorated further following revelations in mid-September of the magnitude of the positions and the extent of the losses of a major hedge fund, Long-Term Capital Management. LTCM indicated that it sought high rates of return primarily by identifying small discrepancies in the prices of different instruments relative to historical norms and then taking highly leveraged positions in those instruments in the expectation that market prices would revert to such norms over time. In pursuing its strategy, LTCM took very large positions, some of which were in relatively small and illiquid markets.

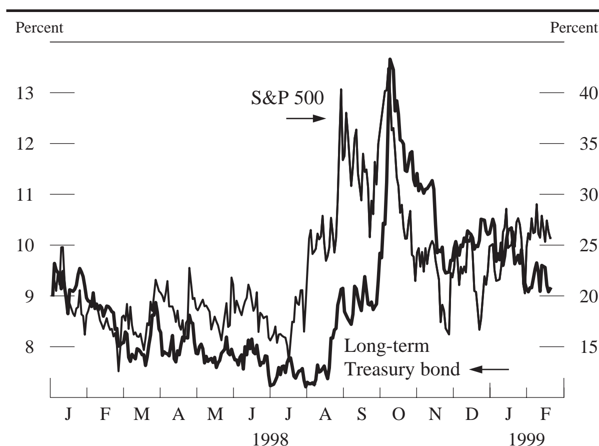
LTCM was quite successful between 1995 and 1997, but the shocks hitting world financial markets last August generated substantial losses for the firm. Losses mounted in September, and before new investors could be found, the firm encountered difficulties meeting liquidity demands arising from its collateral agreements with its creditors and counterparties. With world financial markets already suffering from heightened risk aversion and illiquidity, officials of the Federal Reserve Bank of New York judged that the precipitous unwinding of LTCM’s portfolio that would follow the firm’s default would significantly add to market problems, would distort market prices, and could impose large losses, not just on LTCM’s creditors and counterparties, but also on other market participants not directly involved with LTCM.

In an effort to avoid these difficulties, the Federal Reserve Bank of New York contacted the major creditors and counterparties of LTCM to see if an alternative to forcing LTCM into bankruptcy could be found. At the same time, Reserve Bank officials informed some of their colleagues at the Federal Reserve Board, the Treasury, and other financial regulators of their activities. Subsequent discussions among LTCM’s creditors and counterparties led to an agreement by the private-sector parties to provide an additional $3½ billion of capital to LTCM in return for a 90 percent equity stake in the firm.

Because of the potential for firms such as LTCM to have a large influence on U.S. financial markets, Treasury Secretary Robert Rubin asked the President’s Working Group on Financial Markets to study the economic and regulatory implications of the operations of firms like LTCM and their relationships with their creditors. In addition, the extraordinary degree of leverage with which LTCM was able to operate has led the federal agencies responsible for the prudential oversight of the fund’s creditors and counterparties to undertake reviews of the practices those firms employed in managing their risks. These reviews have suggested significant weaknesses in the risk-management practices of many firms in their dealings with LTCM and—albeit to a lesser degree—in their dealings with other highly leveraged entities. Few counterparties seem to have had a complete understanding of LTCM’s risk profile, and their credit decisions were heavily influenced by the firm’s reputation and strong past performance. Moreover, LTCM’s counterparties did not impose sufficiently tight limits on their exposures to LTCM, in part because they relied on collateral agreements requiring frequent marking to market to limit the risk of their exposures. While these agreements generally provided for collateral with a value sufficient to cover current credit exposures, they did not deal adequately with the potential for future increases in exposures from changes in market values. This shortcoming was especially important in dealings with a firm like LTCM, which had such large positions in illiquid markets that its liquidation would likely have moved prices sharply against its creditors. In such cases, creditors need to take further steps to limit their potential future exposures, which might include requiring additional collateral or simply scaling back their activity with such firms.

The private-sector agreement to recapitalize LTCM allowed its positions to be reduced in an orderly manner over time, rather than in an abrupt fire sale. Nonetheless, the actual and anticipated unwinding of LTCM’s portfolio, as well as actual and anticipated sales by other similarly placed leveraged investors, likely contributed materially to the tremendous volatility of financial markets in early October. Market

Implied volatilities



NOTE. The data are daily. Implied volatilities are calculated from options prices. Last observations are for February 19, 1999.

expectations of asset price volatility going forward, as reflected in options prices, rose sharply, as bid–asked spreads and the premium for on-the-run securities widened. Long-term Treasury yields briefly dipped to their lowest levels in more than thirty years, in part because of large demand shifts resulting from concerns about the safety and liquidity of private and emerging market securities. Spreads of rates on corporate bonds over those on comparable Treasury securities rose considerably, and issuance of corporate bonds, especially by lower-rated firms, remained very low.

By mid-October, however, market conditions had stopped deteriorating, and they began to improve somewhat in the days and weeks following the cut in the federal funds rate on October 15, between Federal Open Market Committee meetings. Internationally coordinated efforts to help Brazil cope with its financial difficulties, culminating in the announcement of an IMF-led support package in mid-November, contributed to the easing of market strains. In the Treasury market, bid–asked spreads narrowed a bit and the premium for on-the-run issues declined. With the earlier flight to quality and liquidity unwinding, Treasury rates backed up considerably. Corporate bond spreads reversed a part of their earlier rise, and investment-grade bond issuance rebounded sharply. In the high-yield bond market, investors appeared to be more hesitant, especially for all but the best-known issuers, and the volume of junk bond issuance picked up less. In the commercial paper market, yields on higher-quality paper declined; yields on lower-quality paper remained elevated, however, and some lower-tier firms reportedly drew on their bank lines for funding, giving a further boost to bank business lending, which had begun to pick up during the summer.

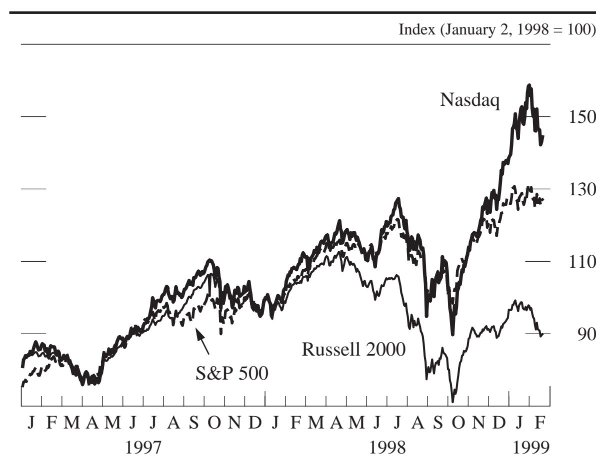
Market conditions improved a bit further immediately after the Federal Reserve's November rate cut, but some measures of market stress rose again in late November and in December. In part, this deterioration reflected widespread warnings of lower-than-expected corporate profits, a weakening economic outlook for Europe, and renewed concerns about the situation in Brazil. In addition, with risk a greater-than-usual concern, some market participants were likely less willing to hold lower-rated securities over year-end, when they would have to be reported in annual financial statements. As a result, liquidity in some markets appeared to be curtailed, and price movements were exaggerated. These effects were particularly noticeable in the commercial paper market: The spread between rates on top-tier and lower-tier thirty-day paper jumped almost 40 basis points on December 2, when that maturity crossed year-end, and then reversed the rise late in the month.

By shortly after year-end, some measures of market stress had eased considerably from their levels in the fall, although markets remained somewhat illiquid relative to historical norms, and risk spreads on corporate bonds stayed quite elevated. Nonetheless, with Treasury yields very low, corporate bond rates were apparently perceived as advantageous, and—following a lull around year-end—many corporate borrowers brought new issues to market. The devaluation and subsequent floating of the Brazilian *real* in mid-January had a relatively small effect on U.S. financial markets. More recently, intermediate- and long-term Treasury rates have increased, as incoming data have continued to show the economy expanding briskly, and investors have come to believe that no further easing of Federal Reserve policy is likely.

Equity Prices

Most equity indexes rose strongly, on balance, in 1998, with the Nasdaq Composite Index up nearly 40 percent, the S&P 500 Composite Index rising more than 25 percent, and the Dow Jones Industrial Average and the NYSE Composite Index advancing more than 15 percent. Small capitalization stocks underperformed those of larger firms, with the Russell 2000 Index off 3 percent over the year. The variation in stock prices over the course of the year was extremely wide. Prices increased substantially over the first few months of 1998, as concerns eased that Asian economic problems could lead to a slowdown in the United States and to a consequent decline

Major stock price indexes



NOTE. The data are daily. Last observations are for February 19, 1999.

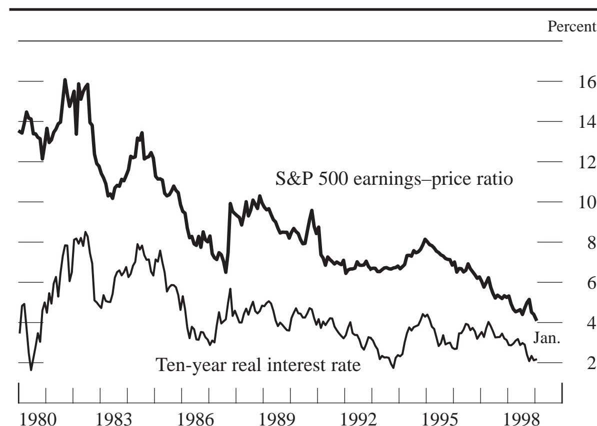
in profits. The major indexes declined, on balance, over the following couple of months before rising sharply, in some cases to new records, in late June and early July, on increasing confidence about the outlook for earnings. The main exception was the Russell 2000; small capitalization stocks fell more substantially in the spring, and their rise in July was relatively muted.

Rising concerns about the outlook for Japan and other Asian economies, as well as the deepening financial problems in Russia, caused stock prices to retrace their July gains by early August. After Russia devalued the ruble and defaulted on some debts in mid-August, prices fell further, reflecting the general turbulence in global financial markets. By the end of the month, most equity indexes had fallen back to roughly their levels at the start of the year. Commercial bank and investment bank stocks fell particularly sharply, as investors became concerned about the effect on these institutions' profits of emerging market difficulties and of substantial declines in the values of some assets. Equity prices rose for a time in September but then fell back by early October before rebounding as market dislocations eased and interest rates on many private obligations fell. By December, most major indexes were back near their July highs, although the Russell 2000 remained below its earlier peak.

In late December, and into the new year, stock prices continued to advance, with several indexes reaching new highs in January. The devaluation of the Brazilian *real* caused some firms' shares to drop as investors reevaluated prospective earnings from Latin American operations, but all the major stock indexes posted gains in January; the Nasdaq advanced nearly 15 percent over the month, driven by large advances in the stock prices of high-technology firms, especially those related to the Internet. More recently, however, stock prices fell back, as interest rates rose and some investors apparently concluded that prices had risen too far, given the outlook for earnings.

The increase in equity prices last year and early this year, coupled with the slowing of earnings growth, left many valuation measures beyond their historical ranges. After ticking higher in the late summer and early autumn, the ratio of consensus estimates of earnings over the coming twelve months to prices in the S&P 500 later fell back, dropping to a new low in January. In part, the decline in this measure over the past year likely reflected lower real long-term bond yields. For example, as measured by the difference between the ten-year nominal Treasury yield and inflation expectations reported in the

Equity valuation and long-term real interest rate



NOTE. The data are monthly. The earnings–price ratio is based on the I/B/E/S International, Inc., consensus estimate of earnings over the coming twelve months. The real interest rate is the yield on the ten-year Treasury note less the ten-year inflation expectations from the Federal Reserve Bank of Philadelphia Survey of Professional Forecasters.

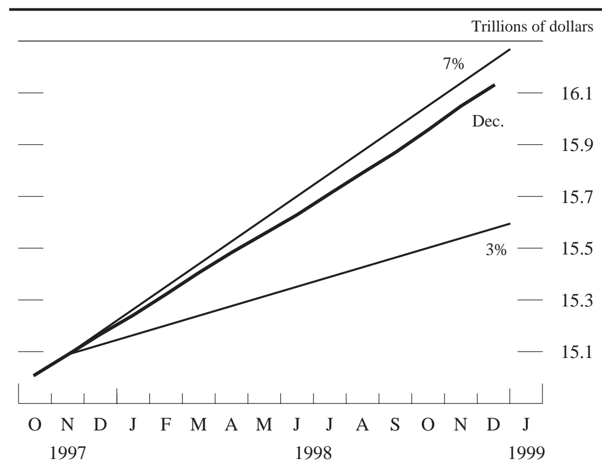
Philadelphia Federal Reserve Bank's survey of professional forecasters, real yields fell appreciably between late 1997 and early 1999. (The yield on ten-year inflation-indexed Treasury securities actually rose somewhat last year. However, the increase may have reflected the securities' lack of liquidity and the substantial rise in the premium investors were willing to pay for liquidity.) Since mid-1998, the real interest rate has declined somewhat more than the forward earnings yield on stocks, and the spread between the two consequently increased a bit, perhaps reflecting the greater sense of risk in financial markets. Nonetheless, the spread has remained quite small relative to historical norms: Investors may be anticipating rapid long-term earnings growth—consistent with the expectations of securities analysts—and they may still be satisfied with a lower risk premium for holding stocks than they have demanded historically.

Debt and the Monetary Aggregates

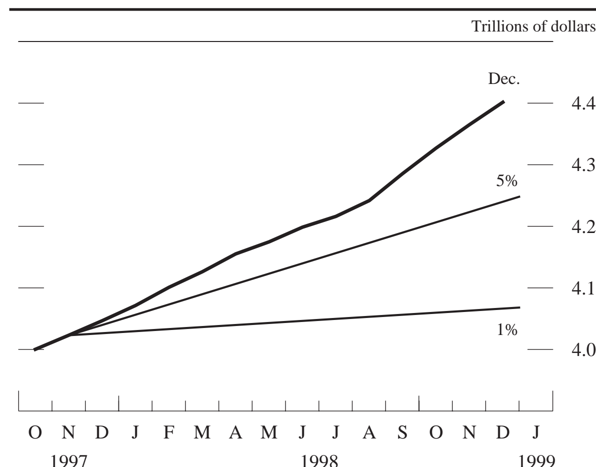
Debt and Depository Intermediation

From the fourth quarter of 1997 to the fourth quarter of 1998, the total debt of the U.S. household, government, and nonfinancial business sectors increased about 6¼ percent, in the top half of its 3 percent to 7 percent range and considerably faster than nominal GDP. Buoyed by strong spending on durable goods, housing, and business investment, as well as by merger and acquisition activity that substituted debt for equity, nonfederal debt expanded about 9 percent

Domestic nonfinancial debt: Annual range and actual level



M2: Annual range and actual level



last year, more than 2 percentage points faster than in 1997. By contrast, federal debt declined 1¼ percent, following a rise of ¾ percent the previous year.

Credit market instruments on the books of depository institutions rose at a somewhat slower pace than did the debt aggregate, posting a 5¾ percent rise in 1998, about half a percentage point less than in 1997. Growth in depository credit picked up in the second half of the year, as the turbulence in financial markets apparently led many firms to substitute bank loans for funds raised in the markets. Banks also added considerably to their holdings of securities in the third and fourth quarters, in part reflecting the attractive spreads available on non-Treasury debt instruments.

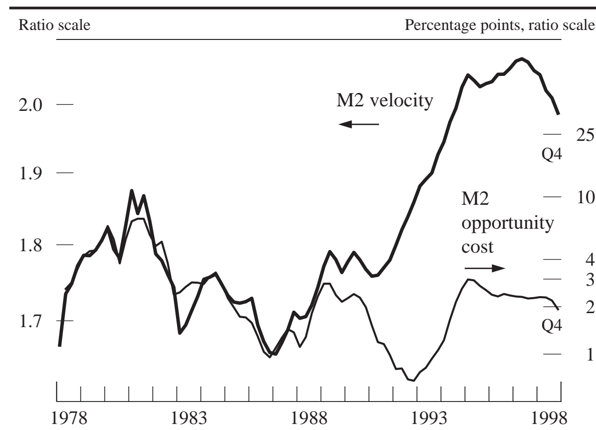
Financial firms also appeared to turn to banks for funding when the financial markets were volatile, and U.S. banks substantially expanded their lending to financial firms through repurchase agreements and loans to purchase and carry securities. As a result, growth of total bank credit, adjusted to remove the effects of mark-to-market accounting rules, accelerated to 10½ percent on a fourth-quarter to fourth-quarter basis, the largest annual increase in more than a decade.

The Monetary Aggregates

The broad monetary aggregates expanded very rapidly last year. From the fourth quarter of 1997 to the fourth quarter of 1998, M2 increased 8½ percent, placing it well above the upper bound of its 1 percent to 5 percent range. However, as the FOMC noted last February, this range was intended as a benchmark for money growth under conditions of stable prices, real economic growth near trend, and historical velocity relationships. Part of the excess of M2 above its range was the result of faster growth in nominal spending than would likely be consistent with sustained price stability. In addition, the velocity of M2 (defined as the ratio of nominal GDP to M2) fell 3 percent. Some of the decline resulted from the decrease in short-term market interest rates last year—as usual, rates on deposits fell more slowly than market rates, reducing the opportunity cost of holding M2 (defined as the difference between the rate on Treasury bills and the average return on M2 assets).

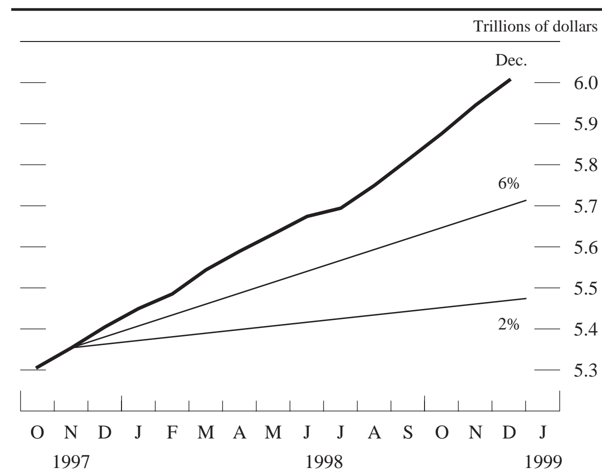
However, the bulk of the decline cannot be explained on the basis of the historical relationship between the velocity of M2 and this measure of its opportunity cost. Three factors not captured in that relationship likely contributed to the drop in velocity. First, households seem to have allocated an increased

M2 velocity and the opportunity cost of holding M2



NOTE. The data are quarterly. M2 opportunity cost is the two-quarter moving average of the three-month Treasury bill rate less the weighted-average rate paid on M2 components.

M3: Annual range and actual level



share of savings flows to monetary assets rather than equities following several years of outsized gains in stock market wealth. Second, some evidence suggests that in the 1990s the demand for M2 assets has become more sensitive to longer-term interest rates and to the slope of the yield curve, and so the decline in long-term Treasury yields last year, and the consequent flattening of the yield curve, may have increased the relative attractiveness of M2 assets. Finally, a critical source of the especially rapid M2 expansion in the fourth quarter likely was an increased demand for safe, liquid assets as investors responded to the heightened volatility in financial markets. With some of these safe-haven flows likely being reversed, growth in the broad monetary aggregates, while still brisk, has slowed appreciably early this year.

M3 expanded even faster than M2 in 1998, posting an 11 percent rise on a fourth-quarter to fourth-quarter basis. Last year's growth was the fastest since 1981 and left the aggregate well above the top end of its 2 percent to 6 percent growth range. As with M2, however, the FOMC established the M3 range as a benchmark for growth under conditions of stable prices, sustainable output growth, and the historical behavior of velocity. The rapid growth of M3 in part simply reflected the rise in M2. In addition, the non-M2 components of M3 increased 18½ percent over the year, following an even larger advance in 1997. The substantial rise in these components last year was partly the result of the funding of the robust growth in bank credit with managed liabilities, many of which are in M3. However, M3 growth was boosted to an even greater extent by flows into institution-only money funds, which have been expanding rapidly in recent years as they have increased their share of the corporate cash management business. Because investments in these funds substitute for business holdings of short-term assets that are not in M3, their rise has generated an increase in M3 growth. In addition, institution-only funds pay rates that tend to lag movements in market rates, and so their relative attractiveness was temporarily enhanced—and their growth rate boosted—by declines in short-term market interest rates late last year.

4. Growth of money and debt
Percent

Period	M1	M2	M3	Domestic nonfinancial debt
Annual[1]				
1988	4.2	5.6	6.4	9.1
1989	.6	5.2	4.1	7.5
1990	4.2	4.2	1.9	6.7
1991	8.0	3.1	1.2	4.5
1992	14.3	1.8	.6	4.5
1993	10.6	1.3	1.0	4.9
1994	2.5	.6	1.7	4.9
1995	−1.6	3.9	6.1	5.4
1996	−4.5	4.6	6.8	5.3
1997	−1.2	5.8	8.8	5.0
1998	1.8	8.5	11.0	6.3
Quarterly (annual rate)[2]				
1998:1	3.2	7.6	10.3	6.2
2	1.0	7.5	10.1	6.1
3	−2.0	6.9	8.6	6.0
4	5.0	11.0	13.2	6.4

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

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

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

M1 increased 1¾ percent over the four quarters of 1998, its first annual increase since 1994. Currency expanded at an 8¼ percent pace, its largest rise since 1994. The increase apparently reflected continued strong foreign shipments, though at a slower pace than in 1997, and a sharp acceleration in domestic demand. Deposits in M1 declined further in 1998, reflecting the continued introduction of retail "sweep" programs. Growth of M1 deposits has been depressed for a number of years by these programs, which shift—or "sweep"—balances from household transactions accounts, which are subject to reserve requirements, into savings accounts, which are not. Because the funds are shifted back to transactions accounts when needed, depositors' access to their funds is not affected by these programs. However, banks benefit from the reduction in holdings of required reserves, which do not pay interest. Over 1998, sweep programs for demand deposit accounts became more popular, contributing to a 4¼ percent decline in such balances. By contrast, new sweep programs for other checkable deposits, which had driven double-digit declines in such deposits over the previous three years, were less important in 1998, and, with nominal spending strong and interest rates lower, other checkable deposits were about unchanged on the year.

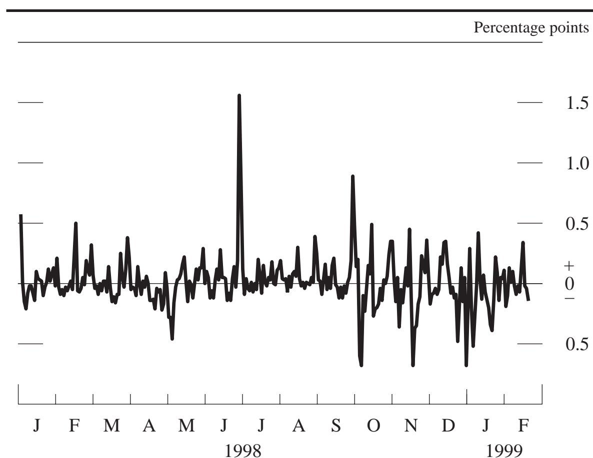
As a result of the introduction of retail sweep accounts, the average level of required reserve balances (balances that must be held at Reserve Banks to meet reserve requirements) has trended lower over the past few years. The decline has been associated with an increase in banks' required clearing balances, which are balances that banks agree in advance to hold at their Federal Reserve Bank in order to facilitate the clearing of their payments. Unlike required reserve balances, banks earn credits on their required clearing balances that can be applied to the use of Federal Reserve priced services. Despite the increase in required clearing balances, required operating balances, which are the sum of required reserve balances and required clearing balances, have declined over the past few years and in late 1998 reached their lowest level in several decades.

The decline in required operating balances has generated concerns about a possible increase in the volatility of the federal funds rate. Because a bank's required level of operating balances must be met only on average over a two-week maintenance period, banks are free to allocate their reserve holdings across the days of a maintenance period in order to minimize their reserve costs. However, banks must also manage their reserves in order to avoid overdrafts, which the Federal Reserve discourages through administrative measures and financial penalties. Thus, as required operating balances decline toward the minimum level needed to clear banks' transactions, banks are less and less able to respond to fluctuations in the federal funds rate by lending funds when the rate is high and borrowing when the rate is low. As a result, when required operating balances are low, the federal funds rate is likely to rise further than it otherwise would when demands for reserves are unexpectedly strong or supplies weak; conversely, the federal funds rate is likely to fall more in the event of weaker-than-expected demand or stronger-than-expected supply. One way to ease this difficulty would be to pay interest on required reserve balances, which would reduce banks' incentives to expend resources on sweeps and other efforts to minimize these balances.

Despite the low level of required operating balances, the federal funds rate did not become noticeably more volatile over the spring and summer of 1998. In part, this result reflected more frequent overnight open market operations by the Federal Reserve to better match the daily demand for and supply of reserves. Also, banks likely improved the management of their accounts at the Federal Reserve Banks. Moreover, large banks apparently increased their willingness to borrow at the discount window. The Federal Reserve's decision to return to lagged reserve accounting at the end of July also likely contributed to reduced volatility in the federal funds market by enhancing somewhat the ability of both banks and the Federal Reserve to forecast reserve demand.

In the latter part of 1998 and into 1999, however, the federal funds rate was more volatile. The increase may have owed partly to further reductions in

Effective federal funds rate less target rate



NOTE. Data are daily. Last observation is for February 19, 1999.

required operating balances resulting from new sweep programs, but other factors were probably more important, at least for a time. Market participants were scrutinizing borrowing banks more closely, and in some cases lenders pared or more tightly administered their counterparty credit limits, or shifted more of their placements from term to overnight maturities. The heightened attention to credit quality also made banks less willing to borrow at the discount window, because they were concerned that other market participants might detect their borrowing and interpret it as a sign of financial weakness. As a result, many banks that were net takers of funds in short-term markets attempted to lock in their funding earlier in the morning. On net, these forces boosted the demand for reserves and put upward pressure on the federal funds rate early in the day. To buffer the effect of these changes on volatility in the federal funds market, the Federal Reserve increased the supply of reserves and, at times, responded to the level of the federal funds rate early in the day when deciding on the need for market operations. Because demand had shifted to earlier in the day, however, the federal funds rate often fell appreciably below its target level by the end of the day.

At its November meeting, the FOMC amended the Authorization for Domestic Open Market Operations to extend the permitted maturity of System repurchase agreements from fifteen to sixty days. Over the remainder of 1998, the Domestic Trading Desk made use of this new authority on three occasions, arranging System repurchase agreements with maturities of thirty to forty-five days to meet anticipated seasonal reserve demands over year-end. While the Desk had in the past purchased inflation-indexed securities when rolling over holdings of maturing nominal securities, it undertook its first outright open market purchase devoted solely to inflation-indexed Treasury securities in 1998, thereby according those securities the same status in open market operations as other Treasury securities.

International Developments

In 1998, developments in international financial markets continued to be dominated by the unfolding crises in emerging markets that had begun in Thailand in 1997. Financial market turbulence spread to other emerging markets around the globe, spilling over from Korea, Indonesia, Malaysia, Singapore, the Philippines, and Hong Kong in late 1997 and in the first part of 1998 to Russia in the summer, and to Latin America, particularly Brazil, shortly thereafter. The Asian crisis contributed to a deepening recession in Japan last year, and as the year progressed, growth in several other major foreign industrial economies slowed as well.

At the beginning of 1998, many Asian currencies were declining or were under pressure. The Indonesian rupiah dropped sharply in January, amid widespread rioting and talk of a coup, and fell again in May and June, as the deepening recession prompted more social unrest and ultimately the ouster of President Suharto. Some of the rupiah's losses were reversed in the second half of the year, following the relatively orderly transition of power to President Habibie. Tighter Indonesian monetary policy, which pushed short-term interest rates as high as 70 percent by July, contributed to the rupiah's recovery. On balance, between December 1997 and December 1998, the rupiah depreciated more than 35 percent against the dollar.

In contrast, the Thai baht and Korean won, which had declined sharply in 1997, gained more than 20 percent against the dollar over the course of 1998. Policy reforms and stable political environments helped boost these currencies. Between these extremes, the currencies of the Philippines, Malaysia, Singapore, and Taiwan fluctuated in a narrower range and ended the period little changed against the dollar. In September, Malaysia imposed capital and exchange controls, fixing the ringgit's exchange rate against the dollar. The Hong Kong dollar came under pressure at times during the year, but its peg to the U.S. dollar remained intact, although at the cost of interest rates that were at times considerably elevated. Short-term interest rates in Asian economies other than Indonesia declined in 1998, and as some stability returned to Indonesian markets near the end of the year, short-term rates in that nation began to retreat from their highs.

As the year progressed, the financial storm moved from Asia to Russia. At first the Russian central bank was able to defend the ruble's peg to the dollar with interest rate increases and sporadic intervention. By midyear, however, the government's failure to reach a new assistance agreement with the International Monetary Fund, reported shortfalls in tax revenues, and the disruption of rail travel by striking coal miners protesting late wage payments brought to the fore the deep structural and political problems faced by Russia. In addition, declining oil prices were lowering government revenues and worsening the current account. As a result of these difficulties, the ruble came under renewed pressure, forcing Russian interest rates sharply higher, and Russian equity prices fell abruptly. A disbursement of $4.8 billion

from the IMF in July was quickly spent to keep the currency near its level of 6.2 rubles per dollar, but the lack of progress on fiscal reform put the next IMF tranche in doubt.

On August 17, Russia announced a devaluation of the ruble and a moratorium on servicing official short-term debt. Subsequently, the ruble depreciated more than 70 percent against the dollar, the government imposed conditions on most of its foreign and domestic debt that implied substantial losses for creditors, and many Russian financial institutions became insolvent. The events in Russia precipitated a global increase in financial market turbulence, including a pullback of credit to highly leveraged investors and a widening of credit spreads in emerging market economies and in many industrial countries, which did not abate until after central banks in a number of industrial countries eased policy in the fall.

Latin American financial markets were only moderately disrupted by the Asian and Russian problems during the first half of 1998. The reaction to the Russian default, however, was swift and strong, and the prices of Latin American assets fell precipitously. The spreads between yields on Latin American Brady bonds and comparable U.S. Treasuries widened considerably (with increases ranging from 900 basis points in Argentina to 1500 basis points in Brazil) and peaked in early September before retracing part of the rise. Latin American equity prices plunged, ending the year down 25 percent or more. Several currencies came under pressure, despite sharp increases in short-term interest rates. The Mexican peso, which was also weakened by the effects of falling oil prices, depreciated 18 percent against the dollar over the year. The Colombian peso and the Ecuadorian sucre were devalued, but Argentina's currency board arrangement survived.

Brazil's central bank defended the *real*'s crawling peg until mid-January 1999 but is estimated to have used more than half of the $75 billion in foreign exchange reserves it had amassed as of last April. Anticipation of the IMF-led financial assistance package for Brazil helped spur a partial recovery in Latin American asset markets in late September and October. The details of the $41.5 billion loan package were announced in November, but after the package was approved by the IMF in early December, Brazil's Congress rejected a part of the government's fiscal austerity plan, sparking renewed financial turmoil. In mid-December, $9.3 billion of the loan package was disbursed, but as the year ended, the continuing pressure from investors seeking to take funds out of Brazil put the long-run viability of the crawling exchange rate peg in doubt. The *real* came under pressure again in early January after the state of Minas Gerais threatened not to pay its debt to the federal government. On January 13, the *real* was devalued 8 percent, and two days later it was allowed to float. Since the end of 1998, the *real* has depreciated nearly 38 percent against the dollar, and capital flight from Brazil has likely persisted. The collapse of the *real* exerted some downward pressure on the currencies of other Latin American countries. Thus far, however, contagion has been more limited than it was after the Russian devaluation; unlike Russia, Brazil has continued to meet debt service obligations, and investors apparently had an opportunity to adjust positions in advance of the devaluation and have drawn a distinction between Brazil's problems and those of other economies.

The fallout from the financial crises that hit several Asian emerging market economies in late 1997 triggered a further decline in output in the region in early 1998. In the countries most heavily affected—Thailand, Korea, Malaysia, and Indonesia—output dropped at double-digit annual rates in the first half of the year, as credit disruptions, widespread failures in the financial and corporate sectors, and a resulting high degree of economic uncertainty depressed activity severely. Output in Hong Kong also dropped in early 1998, as interest rates rose sharply amid pressure on its currency peg. Later in the year, with financial conditions in most of the Asian crisis countries stabilizing somewhat, output started to bottom out.

The Asian crisis had a relatively moderate effect on China, although it may have encouraged authorities in that country to move ahead more quickly with various financial sector reforms. Financial tensions mounted early this year as foreign investors have reacted with concern to the failure of the Guangdong International Trust and Investment Corporation. Chinese growth remained fairly strong throughout 1998, despite a dramatic slowdown in the growth of exports.

Inflation in the Asian developing economies rose only moderately on average in 1998, as the inflationary effects of currency depreciations in the region were largely offset by the deflationary influence of very weak domestic activity. The current account balances of the Asian crisis countries swung into substantial surplus last year, reflecting a sharp drop in imports resulting from the falloff in domestic demand as well as improvement in the countries' competitive positions associated with the substantial depreciations of their currencies in late 1997 and early 1998.

In Russia, economic activity declined last year as interest rates were pushed up in an attempt to fend off

pressure on the ruble. After the August debt moratorium and ruble devaluation, output dropped sharply, ending the year down about 10 percent from its year-earlier level. The ruble collapse triggered a surge in inflation to a triple-digit annual rate during the latter part of the year.

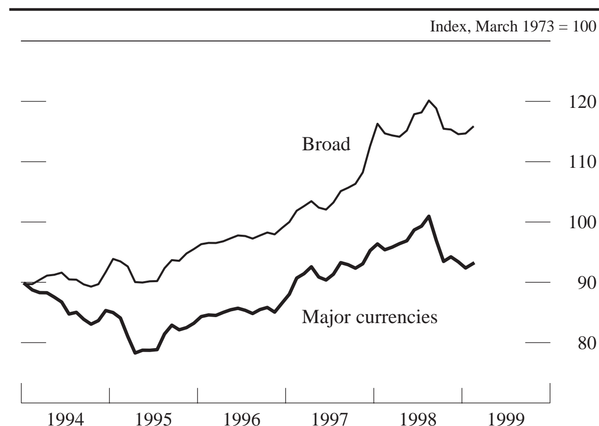
In Latin America, the pace of economic activity slowed only moderately in the first half of 1998, as the spillover from the Asian financial turbulence was limited. The Russian financial crisis in August, in contrast, had a strong impact on real activity in Latin America, particularly Brazil and Argentina, where interest rates moved sharply higher in response to exchange rate pressures. Output in both countries is estimated to have declined in the second half of the year at annual rates of about 5 percent. Activity in Mexico and Venezuela was also depressed by lower oil export revenues. Inflation rates in Latin American countries were little changed in 1998 and ranged from 1 percent in Argentina and 3 percent in Brazil to 31 percent in Venezuela.

The dollar's value, measured on a trade-weighted basis against the currencies of a broad group of important U.S. trading partners, rose almost 7 percent during the first eight months of 1998, but it then fell, by December reaching a level about 2 percent above its year-earlier level. (When adjusted for changes in U.S. and foreign consumer price levels, the real value of the dollar in December 1998 was about 1 percent below its level in December 1997.) Before the Russian default, the dollar was supported by the robust pace of U.S. economic activity, which at times generated expectations that monetary policy would be tightened and which contrasted with weakening economic activity abroad, especially in Japan. Occasionally, however, the positive influence of the strong economy was countered by worries about growing U.S. external deficits. From August through October, in the aftermath of the Russian financial meltdown, concerns that increased difficulties in Latin America might affect the U.S. economy disproportionately, as well as expectations of lower U.S. interest rates, weighed on the value of the dollar, and it fell sharply. The broad index of the dollar's exchange value eased a bit further during the fourth quarter of the year. So far in 1999, the dollar has gained nearly 3 percent in terms of the broad index.

Against the currencies of the major foreign industrial countries, the dollar declined 2 percent in nominal terms over 1998, on balance, reversing some of its 10 percent appreciation the preceding year. Among these currencies, the dollar's value fluctuated most widely against the Japanese yen. The dollar rose against the yen during the first half of the year as a result of concerns about the effects of the Asian crisis on the already-weak Japanese economy and further signs of deepening recession and persistent banking system problems in that country. It reached a level of almost 147 yen per dollar in mid-June, prompting coordinated intervention by U.S. and Japanese authorities in foreign exchange markets that helped to contain further downward pressure on the yen. The dollar resumed its appreciation against the yen, albeit at a slower pace, in July and early August.

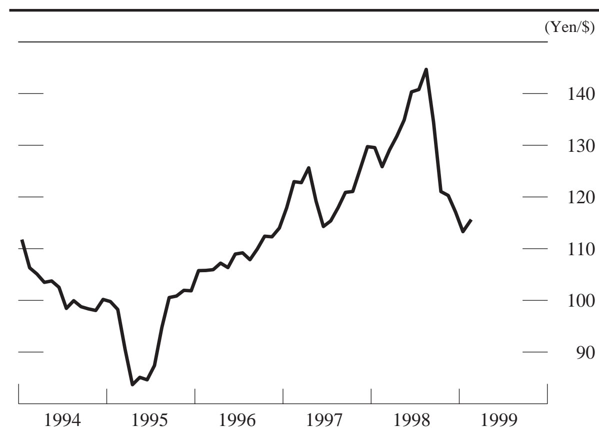
The turning point in the dollar–yen rate came after the Russian collapse, amid the global flight from risk that caused liquidity to dry up in the markets for many assets. During the first week of October, the dollar dropped nearly 14 percent against the yen in extremely illiquid trading conditions. Although fun-

Nominal dollar exchange rate indexes



NOTE. The data are monthly. Indexes are trade-weighted averages of the exchange value of the dollar against major currencies and against the currencies of a broad group of important U.S. trading partners. Last observations are for the first three weeks of February 1999.

U.S. exchange rate with Japan



NOTE. The data are monthly. Last observation is for the first three weeks of February 1999.

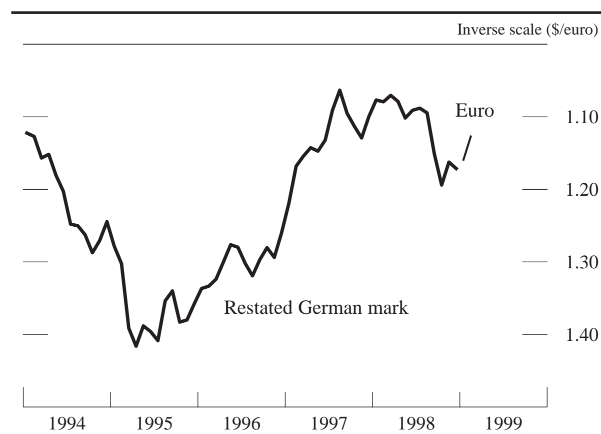
damental factors in Japan, such as progress on bank reform, fiscal stimulus, and the widening trade surplus may have helped boost the yen against the dollar, market commentary at the time focused on reports that some international investors were buying large amounts of yen. These large purchases reportedly were needed to unwind positions in which investors had used yen loans to finance a variety of speculative investments. On balance, the dollar depreciated almost 10 percent against the yen in 1998, reversing most of its net gain during 1997. It depreciated further against the yen in early 1999, hitting a two-year low on January 11, but it then rebounded somewhat amid reports of intervention purchases of dollars by the Bank of Japan. More recently, the Bank of Japan has eased monetary policy further, and the dollar has strengthened against the yen. So far this year, the dollar has gained about 7 percent against the yen.

Japanese economic activity contracted in 1998, as the country remained in its most protracted recession of the postwar era. Business and residential investment plunged, and private consumption stagnated, more than offsetting positive contributions from government spending and net exports. Core consumer prices declined slightly, while wholesale prices fell almost 4½ percent. In April, the Japanese government announced a large fiscal stimulus package. During the final two months of the year, the government announced another set of fiscal measures slated for implementation during 1999, which included permanent personal and corporate income tax cuts, various incentives for investment, and further increases in public expenditures.

Against the German mark, the dollar depreciated about 6 percent, on net, during 1998. Late in the year the dollar moved up against the mark, as evidence of a European growth slowdown raised expectations of easier monetary conditions in Europe. In the event, monetary policy was eased sooner than market participants had expected, with a coordinated European interest rate cut coming in early December.

A major event at the turn of the year was the birth of the euro, which marked the beginning of Stage Three of European Economic and Monetary Union (EMU). On December 31, the rates locking the euro with the eleven legacy currencies were determined; based on these rates, the value of the euro at the moment of its creation was $1.16675. Trading in the euro opened on January 4, with the first trades reflecting a significant premium for the euro over its initial value. As the first week of trading progressed, however, the initial euphoria wore off, and so far this year the dollar has strengthened more than 5 percent against the euro, partly reflecting better-than-expected economic data in the United States, contrasted with weaker-than-expected data in the euro area.

U.S. dollar exchange rate against the restated German mark and the euro

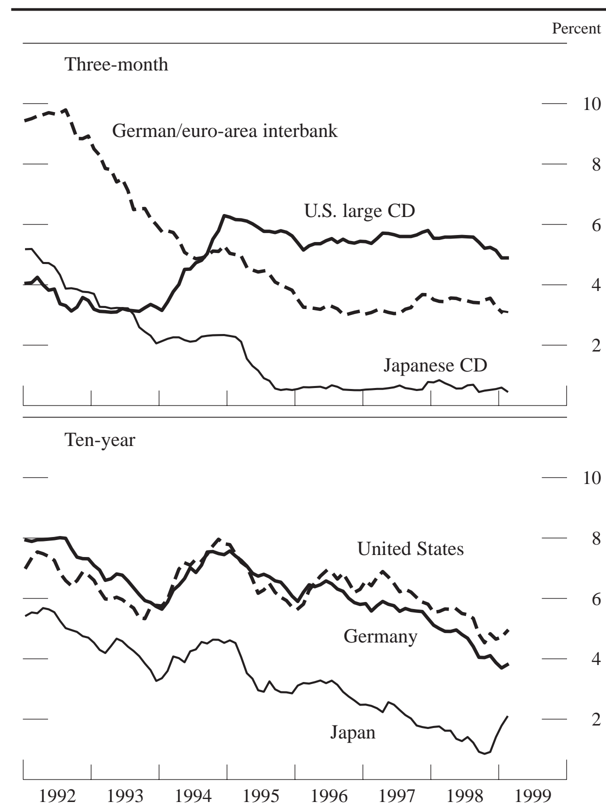


NOTE. The data are monthly. Restated German mark is the dollar/mark exchange rate rescaled by the official conversion factor between the mark and the euro, 1.95583, through December 1998. Euro exchange rate as of January 1999. Last observation is for the first three weeks of February 1999.

In the eleven European countries whose currencies are now fixed against the euro, output growth slowed moderately over the course of 1998, as net exports weakened and business sentiment worsened. Unemployment rates came down slightly, but the average of these rates remained in the double-digit range. Consumer price inflation continued to slow, helped by lower oil prices. In December, the harmonized CPI for the eleven countries stood ¾ percent above its year-earlier level, meeting the European Central Bank’s primary objective of inflation below 2 percent.

Between December 1997 and December 1998, the average value of the dollar changed little against the British pound but rose 8 percent against the Canadian dollar. Weakness in primary commodity prices, including oil, likely depressed the value of the Canadian dollar. The Bank of Canada raised official rates in January 1998 and again in August, in response to currency market pressures. The Bank of England raised official rates in June 1998 to counter inflation pressures. Tighter monetary conditions in both countries, as well as a decline in net exports associated with global difficulties, contributed to a slowing of output growth in the second half of the year. The deceleration was sharper in the United Kingdom than in Canada. U.K. inflation eased slightly to near its target rate, while Canadian inflation remained near the bottom of its target range. In response to weaker economic activity as well as to the expected effects of the global financial turmoil, both the Bank of Canada

U.S. and foreign interest rates



NOTE. The data are monthly. Last observations are for the first three weeks of February 1999.

and the Bank of England have lowered official interest rates since September.

The general trend toward easier monetary conditions was reflected in declines in short-term interest rates in almost all the G-10 countries during the year. Interest rates in the euro area converged to relatively low German levels in anticipation of the launch of the third stage of EMU. Yields on ten-year government bonds in the major foreign industrial countries declined significantly over the course of the year, as economic activity slowed, inflation continued to moderate, and investors sought safer assets. Between December 1997 and December 1998, ten-year interest rates fell 180 basis points in the United Kingdom and 150 basis points in Germany. The ten-year rate fell only 30 basis points in Japan, on balance, declining about 90 basis points over the first ten months of the year but backing up in November and December. Market participants attributed the increase to concerns that the demand for bonds would be insufficient to meet the surge in debt issuance associated with the latest fiscal stimulus package.

Share prices on European stock exchanges posted another round of strong advances last year, with price indexes rising 8 percent in the United Kingdom, about 15 percent in Germany, nearly 29 percent in France, and 41 percent in Italy. In contrast, Japanese equity prices fell more than 9 percent in 1998, and Canadian share prices decreased 4 percent. After a considerable run-up earlier in the year, share prices around the globe fell sharply in August and September, but they rebounded in subsequent months as the Federal Reserve and central banks in many other industrial countries eased monetary policy.

On November 17, the FOMC voted unanimously to reauthorize Federal Reserve participation in the North American Framework Agreement (NAFA), established in 1994, and in the associated bilateral reciprocal currency swap arrangements with the Bank of Canada and the Bank of Mexico. On December 7, the Secretary of the Treasury authorized renewal of the Treasury's participation in the NAFA and of the associated Exchange Stabilization Agreement with Mexico. Other bilateral swap arrangements with the Federal Reserve—those with the Bank for International Settlements, the Bank of Japan, and many European central banks—were allowed to lapse in light of their disuse over the past fifteen years and in the presence of other well-established arrangements for international monetary cooperation. The swap arrangement between the Treasury's Exchange Stabilization Fund and the German Bundesbank was also allowed to lapse.