Sustaining a Record-Breaking Expansion



Courtesy of the Max Morath Collection

We had the largest industrial economy, the largest agricultural economy, the highest per capita income, the highest level of education. It must have been a wonderful time to be alive for most Americans, not for everybody, but for most Americans....I don't think we can understand what it was like in 1900 unless you think of optimism, of hope, of buoyancy, for the United States everything seemed to be going right.

— John Milton Cooper, Jr., in an interview for America 1900, *a documentary in The American Experience series on PBS*

The policy strategy of maintaining fiscal discipline, investing in people and technologies, and opening international markets has borne rich fruit, allowing the Nation to exploit new opportunities and reap the benefits of major scientific and technical advances. The results have been a 20-million-job increase in payroll employment since January 1993, the lowest unemployment rate since 1969, the lowest core inflation rate since 1965, the lowest poverty rate since 1979, rising productivity, significant gains all across the income distribution, and a Federal budget in surplus for 2 years in a row after nearly three decades of deficits. The current economic expansion, already the longest peacetime expansion on record, is on the threshold of becoming the longest ever. The mood of optimism that prevailed at the dawn of the 20th century prevails today as well.

AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

These successes notwithstanding, the challenges we face on the threshold of the 21st century leave no room for complacency. Change is a constant in the American economy and an essential part of its success, but that success must be earned. America's workers and businesses need to prepare for the arrival of ever-newer technologies and new ways of doing business. Economic policy must adapt as well. And even beneficial change, unfortunately, can leave some people and localities behind. Today amid the general prosperity, some groups and communities remain in poverty and lack adequate health care coverage. Some workers may be displaced and see their standards of living suffer. And many families, well off and not so well off, are facing a time crunch as the demands of work compete with the needs of their children.

Lengthening life spans reflect the improved health of Americans in general, but together with changing demographics they present a major challenge for Medicare and Social Security in the new century. Engagement in the world economy has been vital to our economic success, but we have important work ahead in opening up markets and spreading the benefits of trade and investment more widely in the world. We also face the challenge of keeping the economy growing while preserving our natural environment.

In this first *Economic Report of the President* of the 21st century,* each chapter starts with a look back at the economic history of the century just ended and contrasts where Americans stood economically at the beginning of the century with where we stand now. The report reviews those key developments that offer enlightening perspectives on the century's achievements and that will help us concentrate our energies on the challenges to come. We will celebrate the successes, try to understand their causes, and draw from them lessons for facing future challenges.

This chapter starts with a look at U.S. economic performance over the past century. That performance has been, in a word, astounding. But it has also been uneven: in the first half of the century the economy endured a series of recessions, which culminated in the Great Depression. Although less severe, the variations in the second half of the century have also been significant. In particular, the economy's momentum seemed to be lost during the 20 years after 1973. That momentum has been recovered in the 1990s. This chapter therefore also examines some of the distinctive features of the 1990s expansion and the policies that have put it on track to be the longest expansion in the Nation's history and will, we expect, sustain it well into the future.

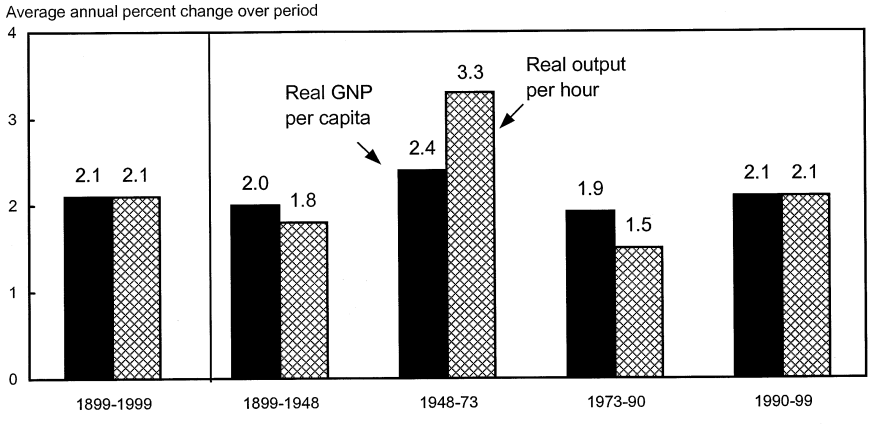
*This report follows popular convention in regarding the new century as having begun on January 1, 2000.

Growth and Inequality: A Century-Long Perspective

Over the past century the U.S. economy has recorded spectacular performance. It has found the 2 percent answer to the American dream: if living standards rise at 2 percent annually, they double every 35 years. This means that by the time they reach their mid-30s, parents can provide their children with a standard of living that is twice the level that they themselves enjoyed as children. By maintaining an annual average increase in gross national product (GNP) per capita of about 2.1 percent over the whole century, the U.S. economy exceeded this target (Chart 1-1). When incomes grow at this pace, each generation experiences a far more affluent lifestyle than the previous one, and over the course of a lifetime, Americans can expect, on average, a fourfold increase in living standards.

How much richer are Americans today than at the turn of the century? Despite the uncertainties in the data, it is clear that total growth of the economy has been remarkable. In 1999 the economy produced almost 30 times the volume of goods and services that it did in 1899, and it employed about 5 times as many workers in doing so. (That it took 5 rather than 30 times as many workers is tribute to another great accomplishment, namely, enormous increases in productivity.) Measured in 1999 dollars, average income per capita in 1899 was a little less than $4,200. With an average 1999 income of

Chart 1-1 **Growth in Income per Capita and Business Sector Output per Hour**
Over the last century, both income per capita and business sector output per hour grew about 2 percent per year on average, but that growth was not always smooth.



Note: Because of data availability, GNP per capita is used here instead of GDP per capita. Per capita figures use estimates of the resident population. Real private domestic product per hour proxies output per hour from 1899 to 1908. Figures for real GNP per capita and output per hour in 1999 are the average of the second and third quarters.
Sources: Department of Commerce (Bureau of the Census and Bureau of Economic Analysis); Department of Labor (Bureau of Labor Statistics); and Christina D. Romer, "The New Prewar Business Cycle Reconsidered: New Estimates of Gross National Product, 1869-1908," *Journal of Political Economy,* 1989.

$33,740, Americans today can acquire (and businesses can produce) more than eight times as many goods and services as could Americans living in 1899. But this simple comparison grossly understates the true improvement in living standards for three important reasons. First, it fails to fully account for the vast array of goods and services that were simply unavailable in the past: aircraft, antibiotics, air conditioners, radio and television, and computers, to name only a few. Second, it fails to account for a substantial increase in leisure, as the typical workweek has fallen to 35 hours. Third, it fails to account for the impact of the improved health of the population in raising life expectancy from 47.3 years in 1900 to about 77 years today, while also improving the quality of those added years. (However, the improvement in living standards may be overstated to the extent that workers, particularly women, have shifted from nonmarket work at home, which is not captured in the GNP measure, to market activity, which is.)

Through sustained economic growth, the United States has been able to accomplish much both at home and abroad. Although poverty rates still remain too high, growth has been the driving force lifting many of the poorest members of society out of poverty. Growth has created more opportunities and made it much easier to tackle the challenges of supporting a growing number of retirees. By maintaining solid growth, the United States moved to a position of global economic leadership sometime near the start of the century and remains in that position today. Recent World Bank data show that U.S. income per capita is 27 percent greater than income per capita in Japan, and 47 percent greater than that in Germany (based on purchasing power parities).

As Chapter 2 documents, progress over the century has not always been smooth. In the century's first half, growth was punctuated by several deep recessions and by the disaster of the Great Depression. Fewer workers were employed in 1939 than in 1929. Nonetheless, despite economic instability and two world wars, in the first 50 years of the century income per capita more than doubled, and income inequality declined.

The Golden Years of Equitable Growth

The quarter century after World War II was a period of rapid increase in productivity growth, and the resulting rise in living standards was remarkable. From the cyclical peak of 1948 to that of 1973, business sector output per hour rose by more than 3 percent per year, as innovative technologies, strong capital investment, and a more skilled and educated work force proved mutually reinforcing (Chart 1-1). Recessions interrupted this growth, but median family income rose by 3.0 percent per year on average, and the gains were widely shared. The average income of the poorest fifth of families rose 3.4 percent annually, whereas that of the top quintile grew at a 2.8

percent annual rate. On average, living standards in 1973 were 82 percent higher than in 1948. These were years when the American dream seemed achievable for all.

Growth Undermined: Stagflation, Rising Inequality, and Deficits

The two decades after 1973 were a rude awakening. It appeared as if the early postwar vision of continuously rising incomes for all had indeed been just a dream. The economy's performance deteriorated noticeably in several dimensions. First, there was much greater economic instability than in the early postwar period. Spurred by rising oil prices, inflation jumped to 11 percent in 1974, and a deep recession followed. After a few years of recovery, inflation then soared to new heights, hitting 13.5 percent in 1980. When, in response, monetary policy made a dedicated effort to bring inflation under control, the economy entered the deepest recession of the postwar period: unemployment rose to 10.8 percent in November 1982. Between 1973 and 1983 the U.S. economy recorded average yearly inflation and unemployment rates of 8.4 and 7.2 percent, respectively—this was the period of the infamous stagflation. The economy did grow strongly in the mid-1980s, but exploding Federal deficits, caused by a lack of fiscal discipline, together with the crisis in the savings and loan industry, undermined that success. Inflation again started to rise, and the economy was already teetering on the edge of recession in 1990 when declining consumer confidence following the Iraqi invasion of Kuwait pushed it over the edge.

Second, growth in productivity lost its momentum. Between 1973 and 1990, growth in business sector output per hour rose at 1½ percent per year—about half its rate from 1948 to 1973. Slower productivity growth in turn affected wages. Between 1973 and 1993, annual growth in real compensation per hour averaged 0.8 percent. Real earnings declined at the end of the 1980s expansion and continued to decline in the 1990-91 recession. The economy did sustain a 1.9 percent annual increase in income per capita over the 1973-90 period, but this was due primarily to rapid labor force growth as more women and baby-boomers went to work.

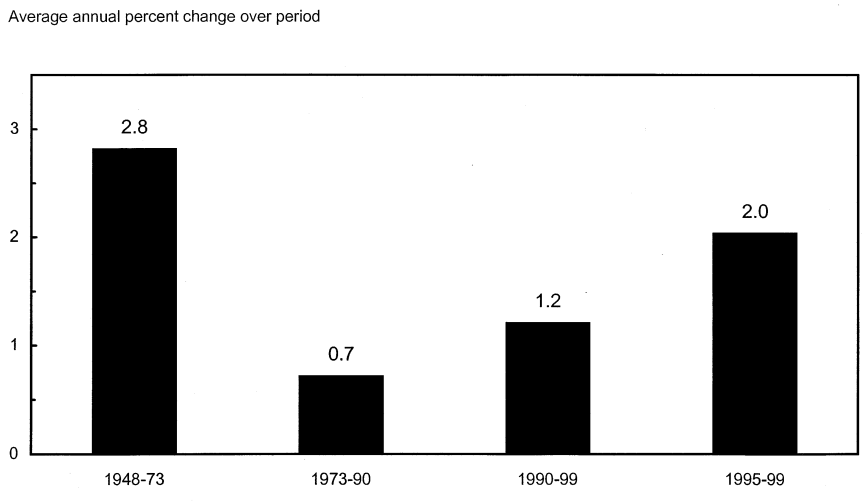
Third, the years between 1973 and 1993 also saw a marked increase in inequality: not only were real income gains meager, but they were also unevenly shared. Those at the top did far better than those at the bottom. After adjusting for consumer price inflation, income for the top quintile of families increased at a 1.3 percent annual pace, but growth was minimal for the middle class and markedly negative for the less well off. These income data were partly driven by developments in earnings: between 1979 and 1993, real earnings in the lowest decile declined by 0.6 percent, whereas

those in the highest decile rose 0.3 percent. The premium earned by college graduates over high school graduates increased from about 40 percent to 70 percent. Moreover, the dispersion of earnings increased even for workers with similar education and demographic characteristics. Finally, the poverty rate of 13.5 percent at the cyclical peak in 1990 was considerably higher than at the peak in 1973.

The Return to Broad-Based Growth in a Record-Breaking Expansion

The expansion that began hesitantly in 1991 found its stride and has been sustained. It will in all likelihood have become the longest expansion in U.S. history—107 months free of recession—in February 2000. Since the beginning of 1993, payroll employment has increased by more than 20 million jobs. Boosted by higher employment and faster productivity growth, output growth has been strong, with GNP per capita rising at an average rate of 2.7 percent per year between the first quarter of 1993 and the third quarter of 1999. Participation in the labor force has increased to a record 67 percent of the working-age population, yet the annual unemployment rate has declined to 4.2 percent—a level not seen in 30 years. After remaining sluggish in the early years of the expansion, output per hour has accelerated, to an average annual growth rate of 2.8 percent between the fourth quarter of 1995 and the third quarter of 1999. In response, solid real compensation gains have been recorded (Chart 1-2).

Chart 1-2 **Growth in Real Compensation per Hour (Nonfarm Business Sector)**
Real compensation gains have accelerated in the last few years.

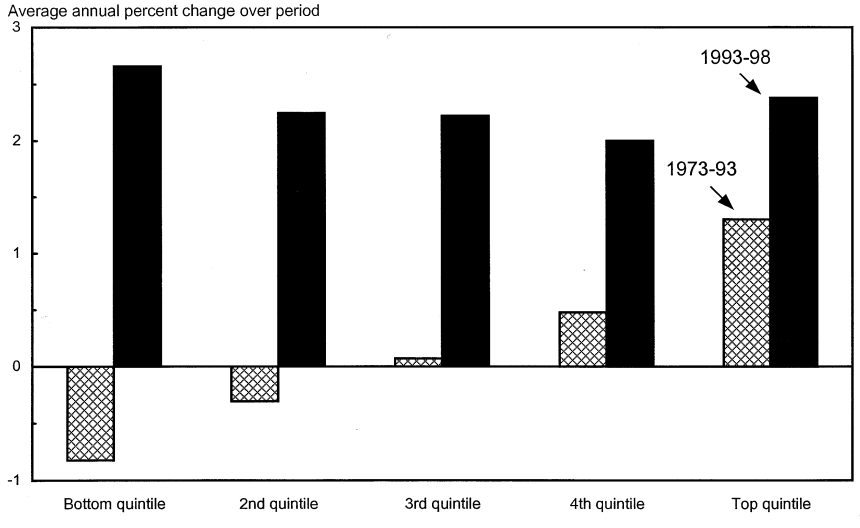


Note: Hourly compensation data are deflated by the CPI-U-RS. Data are spliced between series for 1948-58 and series for 1958-99. Figure for 1999 is the average of the second and third quarters.
Source: Department of Labor (Bureau of Labor Statistics).

The benefits of this growth have been widely shared as well. Some observers focus on changes over a decade or two and conclude that inequality is still rising, but they ignore the recent trends. Between 1993 and 1998, real average household incomes have grown by between 9.9 and 11.7 percent for every quintile of the income distribution, and the median African American household has seen a 15 percent increase in real income. Between 1993 and 1998, family incomes in the lowest quintile rose at a 2.7 percent annual rate, slightly faster than the 2.4 percent rate recorded by the top quintile (Chart 1-3). This recent experience contrasts sharply with the performance from 1973 to 1993. Similar breadth is evident in the growth of earnings. Although wage inequality continued to widen through 1994, for the past 5 years weekly earnings growth has been broad-based.

The economy is increasingly providing workers with good employment opportunities. A recent analysis by the Council of Economic Advisers and the Department of Labor found that 81 percent of new jobs created from 1993 to 1999 are located in industry and occupation categories that pay wages above the median. These good jobs have not gone only to the professional elite: even when professional occupations were excluded from the sample, the study found that 71 percent of new jobs were in categories paying above the median wage. Nor are workers with college degrees the only ones gaining ground. Among workers with only a high school education, an overwhelming proportion of job growth was found to occur in those industry and occupation categories in which these workers earn the highest wages.

Chart 1-3 **Growth in Mean Real Family Income by Quintile**
Incomes rose for the richest and fell for the poorest from 1973 to 1993, widening inequality. Since 1993, income growth has been solid across all income groups.



Source: Department of Commerce (Bureau of the Census).

Data on poverty also show progress. The proportion of Americans living in poverty fell from 15.1 percent in 1993 to 12.7 percent in 1998. The poverty rate for African Americans in 1998, although still high at 26.1 percent, was the lowest ever recorded, and that for Hispanics is the lowest it has been since 1979. Since 1993, African American unemployment has declined from 13.0 percent to 8.0 percent, and Hispanic unemployment has fallen from 10.7 percent to 6.4 percent. For both groups these represent the lowest rates on record. Meanwhile the unemployment rate for females aged 16 and over has dropped to 4.3 percent, the lowest in 46 years.

Data on the probability of job displacement, which showed a rise in the late 1980s and early 1990s, show a drop since then. The share of all workers with 3 or more years of job tenure who became displaced from their jobs was 3.9 percent in the 1991-92 period but declined to 2.9 percent in the 1995-96 period. And because the labor market has been so robust in the 1990s, the rate of reemployment following displacement has been higher in this decade, as have earnings after displacement, than at comparable levels of unemployment during the 1980s. Workers' fears of job loss have also eased in recent years: the share of workers who believe they are likely to lose their jobs declined from 12 percent in 1993 to 8 percent in 1998.

The Engines of the 1990s Expansion

The performance of the economy over this expansion has surprised most observers. Two decades of slow growth and rising inequality have ended. In their place is a record-breaking expansion that has brought strong and equitable growth. The gloomy view of long-term U.S. prospects so popular in the 1970s and 1980s has proved decidedly misguided. The record of the past 7 years suggests that it may be time to reappraise what one popular book at the turn of the last decade called the Nation's "diminished expectations." Before undertaking such a reappraisal, however, it is useful to identify the principal engines of this expansion, and to see how these have resulted in an expansion that is unusual in important respects from previous long expansions. In this section we look at the policy and private sector drivers of growth under four headings: technology; trade and competition; education and skills; and pro-investment policies.

Information and Other Technology

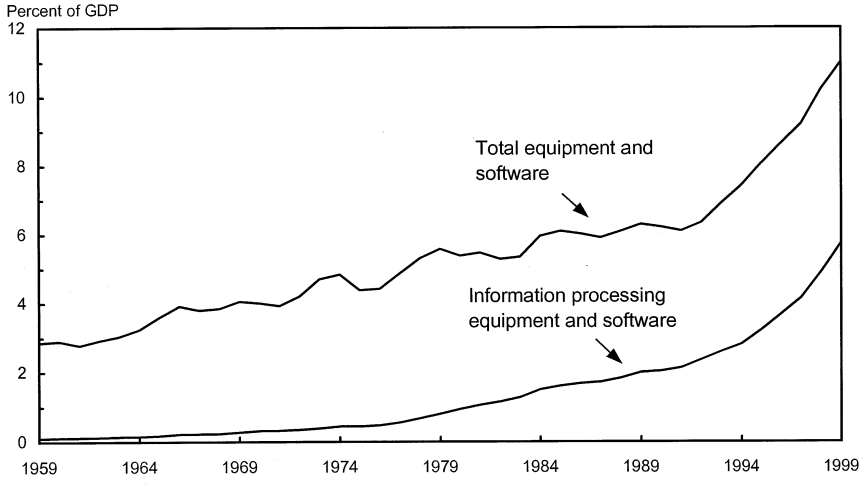
The economy is clearly in the ferment of rapid technological change (a story documented in Chapter 3). One powerful contributor to the strength of this expansion has been investment in plant and equipment, particularly

computers and information technology. Prices of computers and semiconductors, adjusted for quality improvements, have been falling particularly rapidly. Investment in information processing equipment and software took off in the 1990s, growing at a rate of 19 percent per year from 1993 to 1999 (Chart 1-4). More broadly, the share of real investment in GDP has risen dramatically, as has the share of high-technology investment in total investment. Real spending on research and development (R&D) increased at an estimated annual rate of 5 percent between 1993 and 1999.

For many years it seemed that the information technology revolution was not paying off in higher productivity, but that now seems to be changing. Companies have learned to use the new technology to operate more efficiently. New ways of producing and delivering goods and services have been developed. Venture capitalists provide both funds and expertise to new companies with bold ideas. And of course, the improvements in communications technologies have been as dramatic as those in computers. The diffusion and development of the Internet promise continued productivity payoffs still to come.

The revolution in information technology is the most visible and probably the most important technological trend, but it is far from the only one. Materials science, biotechnology, and medical technology have all advanced rapidly and are generating their own economic benefits. America hosts many of the preeminent scientific research institutions in the world, which have pioneered numerous advances and trained the people who are now leading these technological revolutions.

Chart 1-4 **Real Private Investment in Equipment as a Share of Real GDP**
Growth in equipment investment surged in the 1990s, largely because of exceptional growth in investment in information technology equipment and software.



Note: Based on chained 1996 dollars.
Source: Department of Commerce (Bureau of Economic Analysis).

Over the years, government support of scientific research and education has been a vital element in the success of U.S. technology. Going forward, the increased funding proposed in the President's science and technology initiative is important to sustaining growth in the years to come.

Competition and Trade

Industries in which companies compete vigorously tend to be more productive. Conventional economic logic argues that companies operate efficiently and innovate whenever there is the chance of a profit payoff. In practice, however, companies can become complacent and keep doing things the old way even when new, more profitable methods are available. The pressures of competition encourage change and force companies to adopt the more productive methods. And even as it keeps the pressure on businesses to improve and innovate, competition exposes them to best-practice technologies that will help them to do so.

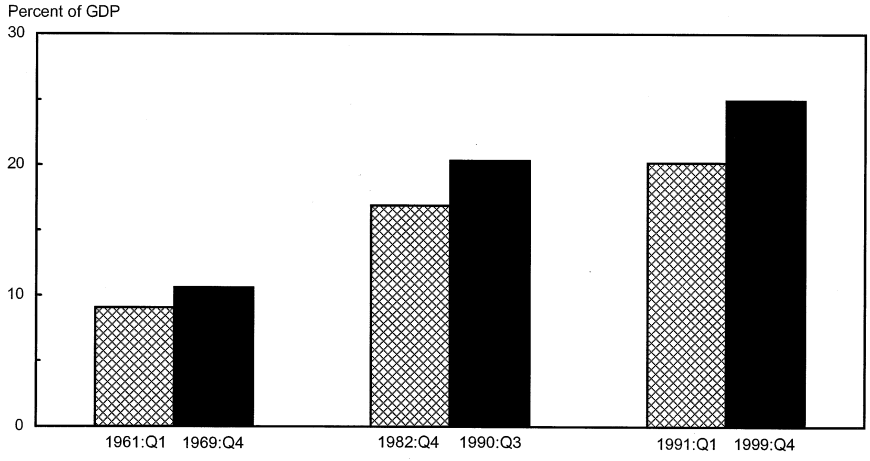
Competition in the global economy adds benefits beyond those from domestic competition. The economy benefits from trade as firms face new incentives, and resources shift to the most productive industries. In addition, companies that face global competition are exposed to best practices worldwide, challenging them to reach for the highest possible performance themselves. The U.S. economy has become increasingly open to overseas trade in the course of this expansion. Indeed, its importance in GDP has grown even more than in previous long expansions. Between 1991 and 1999, trade (measured as the sum of exports and imports) in goods and services as a share of GDP rose by 4.8 percentage points, compared with increases of 1.5 and 3.5 percentage points during the expansions of the 1960s and the 1980s, respectively (Chart 1-5).

The Administration's antitrust and regulatory policies have fostered competition at home. At the same time, its trade policies have worked to expand trade and open markets through major regional and multilateral agreements.

Education, Skills, and Work Incentives

Dazzling new technologies, redesigned business systems, new services—the promise of these sources of economic growth can be realized only if people have the skills and the knowledge to use them. To take advantage of the benefits of trade in expanding those industries where the United States has comparative advantage, workers must acquire the necessary skills. Workers who lose their jobs when industries contract, whether because of foreign competition or because of technological advance, must often be retrained in order to reenter the productive economy at a comparable living standard.

Chart 1-5 **Trade as a Share of GDP During Expansions**
Trade is a larger share of GDP and has grown more during the current expansion than in the two previous long expansions.



Note: Trade is the sum of nominal exports and imports of goods and services, on a national income and product accounts basis. Each pair of columns shows the beginning and ending of three long expansions, except for the current expansion, which has not yet peaked.
Source: Department of Commerce (Bureau of Economic Analysis).

Strong job growth and low unemployment have been possible in this expansion only because people have found that work has paid off. Providing work incentives is an essential element in strong economic growth. With one of the most highly educated, skilled, and motivated work forces in the world, the United States has also been able to take advantage of growth opportunities worldwide.

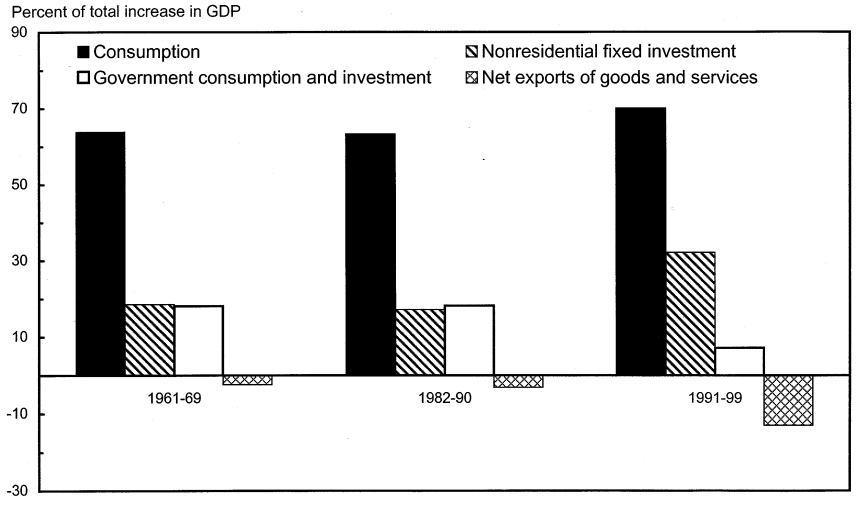
Policies to increase access to education and training and make work pay have been a central theme of economic policy in this expansion.

Pro-Investment Policies

Output growth in this expansion has gone predominantly to households and businesses rather than for government purchases. One can measure how the growth of GDP over time has been allocated among the components of GDP: consumption, investment, government purchases (Federal, State, and local), and net exports (Chart 1-6). When this is done, the current expansion stands out for the strong contribution of private investment spending. The contribution of government purchases of goods and services to growth has been only 7 percent, about a third of what it was in the two previous long expansions.

Government purchases of goods and services reflect the direct use of economic resources. But Federal spending also includes Social Security payments and other transfers to households and businesses. On this broader

Chart 1-6 **Contributions to Economic Growth During Expansions**
The current expansion has been driven more by growth in investment spending, and less by growth in government spending, than the two previous long expansions.



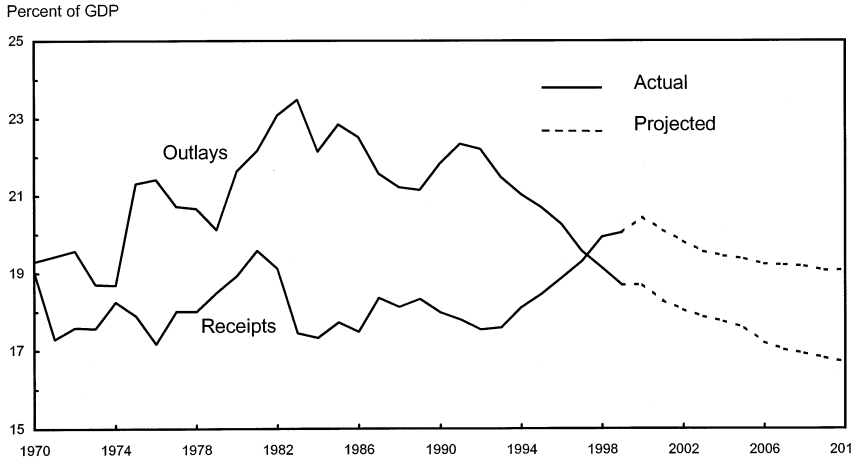
Source: Department of Commerce (Bureau of Economic Analysis) and Council of Economic Advisers.

basis, the current expansion also shows evidence of fiscal restraint. Federal outlays in 1991 were 22.3 percent of GDP. By fiscal 1999 this ratio had fallen to 18.7 percent, as efforts to restrain spending combined with strong economic growth. This decline in spending of 3.6 percentage points of GDP is much greater than the 1.3-percentage-point decline during the 1982-90 expansion. Since this measure typically declines as the economy moves out of recession—and the deeper the recession, the greater the decline—the comparison between the two expansions is striking given that the current expansion was launched from a much shallower recession. Moreover, this decline in spending occurred even as revenues were rising (Chart 1-7).

According to the Administration forecast, assuming implementation of policy as proposed by the President, Federal outlays are forecast to fall to 16.7 percent of GDP by 2010. This reduction results in part from a decline in interest costs as debt is paid off.

But perhaps the most dramatic illustration of how unusual budget policy has been in this expansion comes from estimates of the structural budget deficit by the Congressional Budget Office (CBO). The structural budget deficit adjusts the actual deficit to take out the effect of fluctuations in the business cycle. It estimates what the budget deficit would have been if GDP had been at its potential. According to the CBO's estimates, structural deficits were pervasive during the long expansion of the 1960s, except at the very beginning (Chart 1-8). And those deficits increased sharply until the tax increase of 1968. Throughout its duration, the expansion of the 1980s was

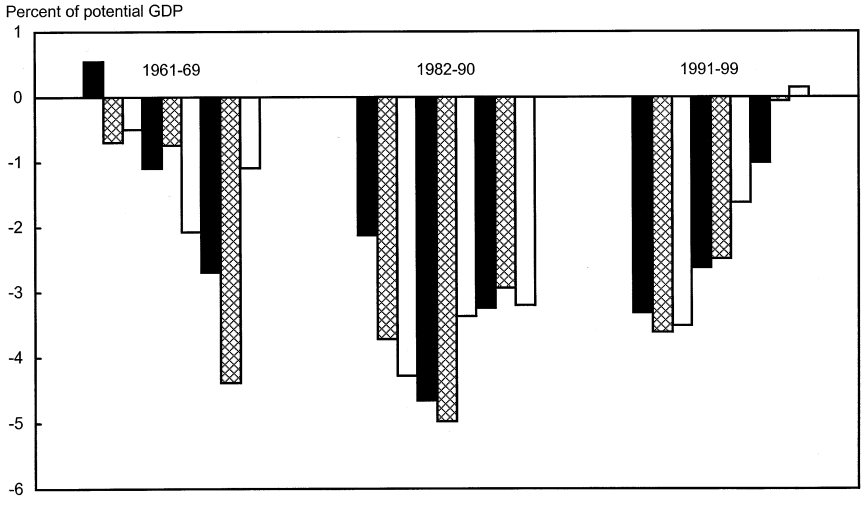
Chart 1-7 **Federal Budget Receipts and Outlays**
The fiscal surplus that emerged in 1998 reflects restraints in spending as revenues rose with the expansion.



Note: Outlays and receipts are on a unified basis for fiscal years.
Sources: Department of Commerce, Department of the Treasury, and Office of Management and Budget.

also associated with large structural deficits—and large actual deficits as well. This expansionary fiscal policy was accompanied by a tight monetary policy, and this combination of policies contributed to relatively high real interest rates and declining net national saving and domestic investment.

Chart 1-8 **Structural Federal Budget Balances During Expansions**
In contrast to previous long expansions, structural budget deficits have steadily declined since 1992 and eventually moved to surplus.



Note: Years are fiscal years.
Source: Congressional Budget Office, Standardized-Employment Budget.

The current expansion, by contrast, started with a large structural deficit and turned it around, to the point that there is now a structural surplus, as Federal spending has been kept in check while revenues have risen. Monetary policy, meanwhile, has been given the freedom to encourage real growth while keeping inflation low. Interest rates, as a result, have been lower than they would have been. Indeed, real interest rates in this expansion have been considerably lower than in the 1980s expansion. Using survey data to measure inflation expectations suggests that real short-term interest rates have been about half what they were in the 1980s expansion, and real long-term rates are about a third lower. Lower interest rates have stimulated investment spending, and this investment has, in turn, boosted capacity growth and raised productivity—two key factors that have helped keep inflation in check.

Although the current account (the balance of trade in goods and services plus net factor income and net transfers) moved into deficit in both the 1980s and the 1990s, the forces behind these shifts were different. In the 1980s both net national saving and net domestic investment declined as a percentage of GDP, so that foreign borrowing was used, directly or indirectly, to finance consumption and Federal budget deficits rather than investment. In the 1990s, by contrast, net national saving increased, and the capital inflow has helped finance an investment boom.

Key Features of the Expansion

Driven by technological advance, more open markets, and investment in physical capital and human skills—all with the ongoing support of Federal policy—this expansion is on track to become the longest ever. In 1999, the ninth year of the expansion, GDP grew by 4.0 percent, and 2.7 million payroll jobs were created. The expansion remained youthful-looking and vigorous despite its chronological age. How did the engines of this expansion, just described, translate their energy into such a sustained performance?

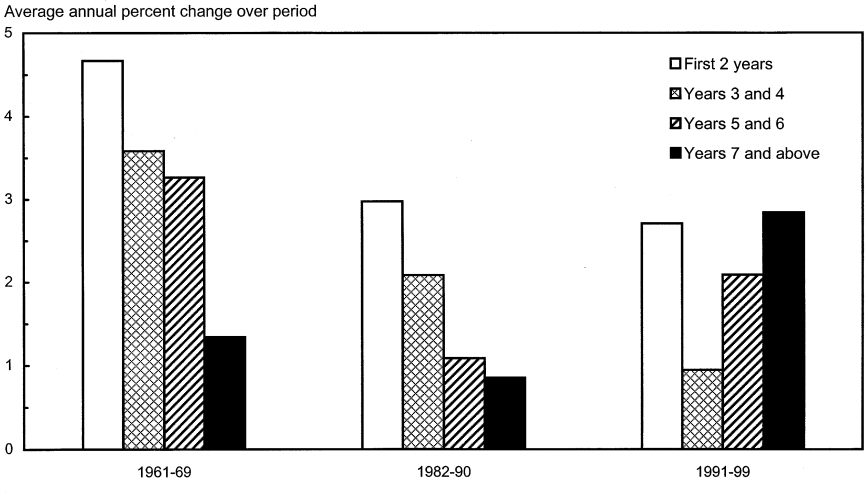
Productivity Growth

The start of an expansion is usually a period of rapid productivity growth. Companies set up factories and offices that are designed to produce a certain target level of output. In a recession, output falls below this target, plants operate less efficiently, and productivity falls. Companies may also retain valued workers that are not needed today but will be needed when the upturn comes, and this, too, lowers average productivity. The surge of productivity growth at the start of an expansion occurs as businesses are again able to make better use of their workers and their physical capital.

The magnitude of this surge varies from expansion to expansion and tends to be greater, the deeper the recession that preceded it. After a deep recession, there is more ground that can be made up before the economy returns to its long-term potential. After a while, however, this productivity surge ends, and the economy moves closer to its normal or trend rate of productivity growth, which is determined by the rates of capital accumulation, technological change, and enhancement of skills. Finally, in the last year or so of an expansion, productivity growth often slows again in what has been called an end-of-expansion effect. This likely results from diminishing returns, as capacity becomes strained and a shortage of experienced and skilled workers develops.

Chart 1-9 shows that the expansions of the 1960s and the 1980s very much followed this pattern. Productivity growth was rapid in the first 2-year period of the expansion but then started to fall off. It had dropped off sharply by the seventh year of expansion in both cases. But the pattern for the current expansion looks very different. After the initial productivity surge, growth fell for a couple of years, but since then it has actually been accelerating. Instead of looking like an old expansion suffering from diminishing returns, this one has been getting stronger. This pattern of strong productivity growth at a mature stage of the cycle is a key reason why this expansion is set to become the longest on record. And that is exactly the result one would expect from policies that have stimulated investment, technology development, and skill enhancement.

Chart 1-9 **Growth in Nonfarm Business Sector Output per Hour During Expansions**
Productivity growth has fallen over time during previous long expansions but has risen during the current one.



Note: The final column shows growth from 1997 through the third quarter of 1999.
Source: Department of Labor (Bureau of Labor Statistics).

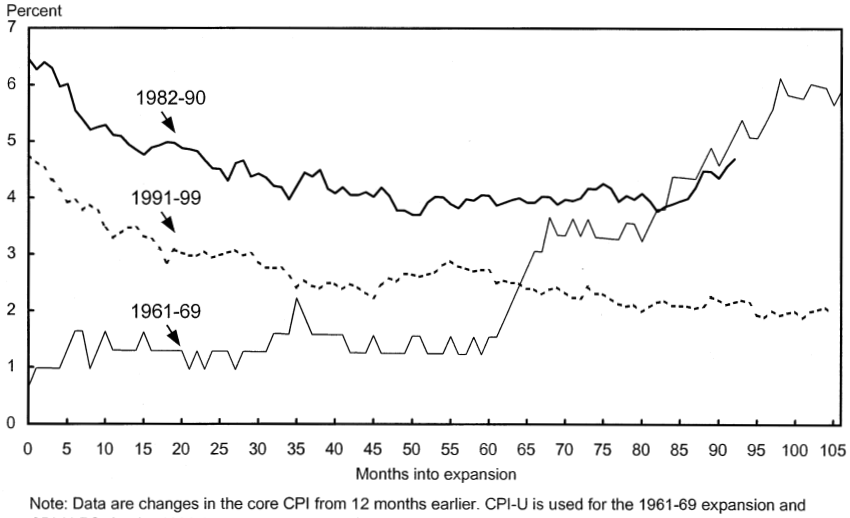
Inflation

Accelerating inflation poses a threat to expansions and, unless kept under control, eventually brings them to a halt. Chart 1-10 shows the pattern of core inflation, as measured by the consumer price index excluding food and energy, in the three long expansions since 1960. The 1960s expansion was marked by 5 years of strong economic growth with low inflation. Administration policies in those years restored prosperity and full employment after bouts with recession between 1957 and 1961. But during the mid-1960s, the pressures of expenditure at the time of the Vietnam War stretched industrial capacity too much, causing inflation to accelerate rapidly, until rising interest rates and monetary restraint brought the expansion to an end.

The 1980s expansion started with very high unemployment and slack resources, which helped restrain inflation in the early years of the expansion, as did the collapse of oil prices and a strong dollar. But eventually the inflation path flattened out and started to turn up as the economy reached lower levels of unemployment.

The pattern of inflation over the current expansion is surprising: core inflation has been low and stable, when not actually declining, even as unemployment has approached 4 percent. Chapter 2 describes several factors that have contributed to this combination of low inflation and low unemployment. Certainly the pattern of productivity described earlier and the rapid expansion of capacity have been important. The importance of investment for productivity growth was noted above, but rapid investment growth

Chart 1-10 **Core Inflation Rates During Expansions**
Unlike in prior long expansions, the core inflation rate, which excludes food and energy price changes, has declined throughout most of the current expansion.



Note: Data are changes in the core CPI from 12 months earlier. CPI-U is used for the 1961-69 expansion and CPI-U-RS for the 1982-90 and 1991- expansions.
Source: Department of Labor (Bureau of Labor Statistics).

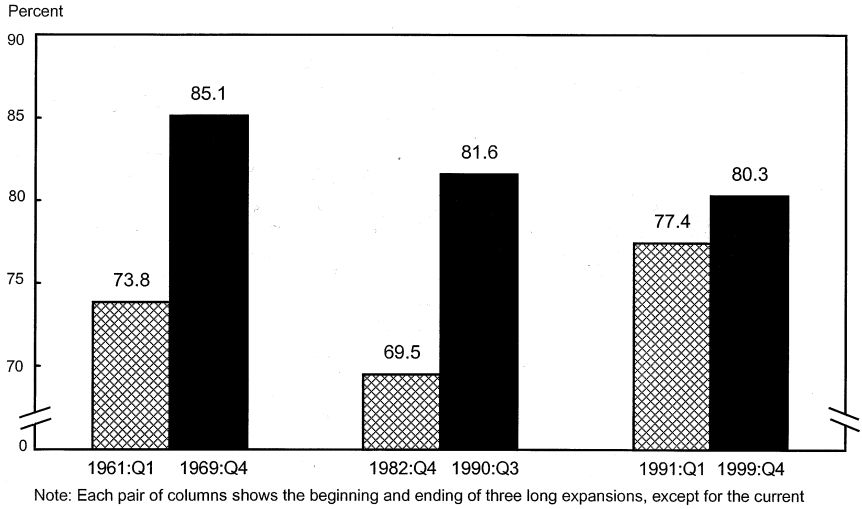
has also been the driver of capacity expansion. Chart 1-11 shows that capacity utilization has remained at a moderate level and has grown more slowly than in previous long expansions.

Questioning the Causes of Inequality

Three of the major driving forces behind the economy's recent success—rapid technological change, increased trade, and tight fiscal policy—have all in the past been viewed by some as sources of greater inequality of income. It is remarkable, therefore, that even though these forces have been particularly powerful in the current expansion, the trend toward greater inequality that began in the 1970s has been arrested, and income gains are now being shared equally across income groups.

Economists are sometimes said to agree on very little, but there is a broad consensus among them that the most important cause of rising earnings inequality in the 1970s and 1980s was technological change. It was simply a matter of supply and demand. The supply of highly skilled and well-educated workers was growing relatively rapidly during these years. Between 1973 and 1992, for example, the share of the civilian labor force with some college education increased from 29.4 percent to 51.6 percent—or 3 percent a year on average. But the relative earnings of these workers were rising even as their supply was expanding, because demand was growing even faster. Something,

Chart 1-11 **Capacity Utilization in Manufacturing During Long Expansions**
The capacity utilization rate is lower and has grown more slowly in this expansion than at comparable junctures in past long expansions.



Note: Each pair of columns shows the beginning and ending of three long expansions, except for the current expansion, which has not yet peaked.
Source: Board of Governors of the Federal Reserve System.

it was argued, must be shifting the relative demand for skilled and unskilled workers, raising demand for the former and lowering it for the latter. Some attributed this skill bias to the impact of new capital investment in general and computers in particular; others saw changes in management approaches and the adoption of new, more flexible production methods as the cause. In either case, technological change was seen as at the root of the wage disparity.

A second cause of inequality has been said to be international trade, although most economists believed its contribution was far smaller than that of technological change. Expanded trade benefits all countries that take part, but within each country some people and industries may be hurt. Those who maintain that trade had increased inequality made the following argument. As developing countries with many low-skilled workers increasingly participate in trade, they put downward pressure on world prices of products intensive in low-skilled labor. If the United States then opens up to trade with these countries, low-skilled workers here become less scarce in the world market, and their relative wages fall. Some claimed that globalization imposes painful consequences on relatively underskilled workers: accept lower wages, as in the United States, or suffer higher unemployment, as in many European countries. In addition, the threat of foreign outsourcing by firms and of increased international competition was said to have reduced labor's bargaining power—a factor also sometimes held responsible for the slow rise in real wages.

Still other institutional and structural changes in the economy have been implicated in increasing inequality. The decline in union membership, for example, is seen as a factor reducing the bargaining power of U.S. workers. A second source has been changes in the mix of industries, in particular the relative decline in manufacturing employment for reasons other than international trade. A third element was the decline in the real minimum wage.

To be sure, some of these proposed explanations are not mutually exclusive. Indeed, they may be interrelated. International competition may have stimulated technological change. It has also been invoked to help explain the declining share of manufacturing employment. Some also blame technology and trade for higher structural unemployment: both may bring about structural change in the economy, as employment rises in some industries but falls in others. Workers who have developed skills in one field are forced to make a difficult transition into another.

Finally, there is a view that the rise in inequality could be attributed to cuts in government social expenditure. The reductions in poverty in the 1960s, in this view, were not simply the result of faster economic growth. The expansion of social programs, particularly Social Security for the elderly, played an important role. By contrast, cutbacks in social spending were seen as hurting the poor in the 1980s.

In light of these explanations, the recent direction of trends in inequality is surprising. As reflected in the data on investment and productivity growth, technological change appears to have accelerated over the past 5 years. Trade and international investment have expanded at rapid rates, the price pressures from this increased trade have been considerable, and the trade deficit has grown. Yet over this same period, real average hourly earnings have increased, and income gains have been widely shared, in contrast to the 1980s. Moreover, research shows that the hourly wages of lower wage groups have increased about as much as or more than the wages of upper wage groups.

This remarkable turnaround shows that *rapid growth in an open economy can occur without worsening inequality.* There always was a nagging doubt associated with blaming technological change for rising inequality. Why, during the 1980s, was technological change apparently contributing little or nothing to productivity growth, yet at the same time causing major shifts in relative wages? Likewise, the explanation that ascribes a role to trade was always controversial, because the evidence in support of these claims either was weak or suggested that any impacts were small. This is not surprising, because most U.S. workers are in domestic industries where there is little or no international trade. Moreover, a large proportion of U.S. trade is with countries such as Canada, Germany, and Japan, where wages are not very different from those in the United States. Only a small fraction of U.S. workers compete directly against very low wage workers overseas. To be sure, in some economic models, international competition in even a few industries is the sole determinant of relative wages across the economy, but the evidence is that many domestic factors have an important influence on relative wages.

Whatever the explanation for the growth in inequality during the 1980s, the recent experience suggests that it is time to reappraise the inevitability of the allegedly adverse impacts of technology and trade. It is time to look at the ways in which they may actually help foster growth with equity, and to recognize that a flexible economy can adjust to these changes.

Rapid productivity growth and openness to trade—and the policies that have supported them—have allowed the U.S. economy to operate *and sustain* a high-employment economy. And in this high-employment economy, employers have been recruiting workers at all skill levels and training many who lack the necessary skills. Moreover, faster productivity growth may allow firms to pay higher wages without raising prices, thus dampening the inflationary impact of higher levels of employment. Similarly, falling import prices will increase purchasing power, enabling real wages to rise without accelerating inflation; surplus global capacity can also help reduce inflationary pressures.

It is also quite possible that the shocks due to technology and trade have been dissipated over time by responses in the economy itself. One possibility

is that the direction of technological change responds to economic incentives. As the relative cost of workers who are less well educated falls, firms have an increased incentive to employ them. Similarly, as international competitive pressures increase, firms either figure out new strategies (improved technology, new products, or higher quality of existing products) that allow them to compete, or they exit. Those firms that survive can compete successfully with low-wage countries and thus are less affected by pressures to reduce wages. The result is a far more resilient economy.

Finally, the connection between aggregate government spending and poverty reduction is too simplistic. Determined deficit reduction in the 1990s has not hurt efforts to reduce poverty, because spending has been more carefully targeted. Increased funding for the Earned Income Tax Credit and for education and training programs has played an important role. Also important have been increases in the minimum wage. Certainly a higher minimum wage has raised wages at the bottom of the income distribution, and it has not had a noticeably negative impact on employment of the lowest paid workers.

Taken as a whole, the evidence on inequality suggests that policy has been doing the right things. In addition, it provides an optimistic message. We remain masters of our fate. We are not, as some suggest, condemned to be buffeted by hostile global or technological forces, in the face of which we are helpless. To be sure, two qualifications to this proposition are in order. First, the final verdict on the impact of these forces is not yet in. The strongest test will be whether these more recent trends are sustained if there is slower growth at home and a global economic environment with less excess capacity. And second, we must not become complacent. Although the trend of rising inequality has been stopped, it has not been reversed. Similarly, although progress has been made in reducing poverty, poverty rates remain far too high. There remains much for policy to do, but the turnaround so far is heartening.

Is the Dream Restored?

Chapter 2 discusses reasons to believe that the level of unemployment at which the economy will experience strong inflationary pressures has declined. But far more important over the long run is the question of whether productivity growth has increased. Certainly a great deal of anecdotal evidence suggests that technological change has been particularly rapid and widespread, but until recently the official data offered scant proof that these changes had boosted productivity. Over the past few years, as this chapter has noted, productivity growth has clearly increased, but the full

implications of the economy's recent performance remain difficult to interpret because we have not seen the end of the current expansion.

One favorable interpretation of the unusual behavior of productivity growth in this cycle is that is not part of a typical cycle at all, but rather reflects a shift to a new wave of innovation. Typically, when a technology is first introduced, inexperience prevents users from extracting its full potential. Over time, however, users learn by doing and productivity accelerates. Similarly, it is possible that the innovations in the current technological wave are interrelated, so that breakthroughs in some areas yield benefits in many others. But we cannot be certain how long the current growth spurt can be sustained.

A conservative approach is to measure the change in productivity not from 1995 but from the previous cyclical peak in 1990, so that the last recession, the initial sluggish recovery, and the subsequent acceleration are all included. On that basis, it is striking that growth in GNP per capita at 2.1 percent per year, and that of GNP per worker at 1.8 percent per year, have matched the pace recorded for the century as a whole (Table 1-1). One cannot say for certain, therefore, that the past decade has witnessed the emergence of a new economy that will generate historically unprecedented growth. But we can be more confident that we have at least returned to the pace of growth sustained over most of the 20th century, which gave us the 2 percent answer to the American dream and the more than eightfold increase in output per worker over the 20th century. This, moreover, is a conservative view. There is certainly support, if not yet overwhelming evidence, for the view that the future could be even more prosperous.

TABLE 1-1.—*Growth in GNP, Business Sector Output per Hour, and Number of Employees for Selected Periods*

[Average annual percent change over period]

Year	Real GNP (1999 dollars)	Real GNP per capita (1999 dollars)	Real GNP per employee (1999 dollars)	Business sector output per hour (1996 dollars)	Employees
1899-1999	3.4	2.1	1.8	2.1	1.6
1990-99	3.1	2.1	1.8	2.1	1.3
1995-99	4.0	3.0	2.2	2.7	1.7

Note.—Because of data availability, GNP per capita is used here instead of GDP per capita. Per capita figures use estimates of the resident population. Real private domestic product per hour proxies output per hour for 1899-1908. Employment data are for 1900-99 and are for civilians aged 14 and over for 1900-47 and 16 and over for 1948-99. Real GNP and output per hour in 1999 are the average of the second and third quarters.

Sources: Department of Commerce (Bureau of the Census and Bureau of Economic Analysis); Department of Labor (Bureau of Labor Statistics); Stanley Lebergott, *Manpower in Economic Growth*, 1964; and Christina D. Romer, "The New Prewar Business Cycle Reconsidered: New Estimates of Gross National Product, 1869-1908," *Journal of Political Economy*, 1989.

Challenges for the Future

This chapter concludes with a brief summary of each of the remaining chapters and the principal challenges that they identify for policy. Sustaining the outstanding performance of the past several years means meeting the challenges that still confront us as well as the new ones that lie ahead.

Stabilizing the Macroeconomy

Chapter 2 recounts in greater depth the story summarized in this chapter of a strong expansion that shows no signs of losing its vitality. Following a long tradition of the *Economic Report of the President*, the chapter focuses on the performance of the past year. For stabilization policy the key future challenge is to sustain this performance: to maintain high levels of employment while keeping inflation low and stable—a goal the Administration shares with the independent Federal Reserve.

Given the current strength of the economy, prudence indicates that fiscal policy should be directed at paying down the Nation's debt and preparing for predictable needs such as those of Social Security and Medicare as well as unexpected ones. Fiscal discipline also frees capital for productive investments in education, businesses, and technology. Tax cuts should be modest and targeted. Discipline over spending should continue. Policies should stay directed toward such critical areas as saving, work incentives, education and training, families and children, the environment, health care, and research and development.

The chapter also examines the recent acceleration of labor productivity and the role that computers have played in it. We find that from 1990 to 1999 the acceleration in productivity is associated strongly with the production and use of computers. But over the shorter period from 1995 to 1999, there was a substantial increase in total factor productivity growth outside the computer-producing industry.

Enhancing Productivity

Chapter 3 looks at the microeconomic, or industry-level, side of the technological change that has driven growth in this expansion and in this century. Technological change has created new industries and altered the competitive landscape of the American economy. The chapter describes the dynamic process by which innovative products and services allow competitors to enter and compete with established firms, lowering prices and improving service for consumers. Two examples of these trends are evident in the telecommunications and information technology industries; here many firms are exploring

the economic opportunities made possible by innovations in computers, communications technology, and the Internet and e-commerce.

In telecommunications, technological and regulatory changes have led to a surge in demand for communications equipment and services. Many of these new products, in turn, are critical inputs into the information technology industry. Firms are adopting information technology to lower costs, create new products, and improve their productivity. By improving information flows within the firm and between the firm and its customers, information technology has the potential to revolutionize how businesses conduct business in this century. E-commerce could fundamentally reshape the nature of relationships between businesses and their customers, and between businesses and businesses.

The Administration has acted as a catalyst for this growth by supporting the basic and applied research necessary for creating new technologies. It has also supported regulatory reforms, like the 1996 Telecommunications Act, that encourage competition and entry from new providers and new technologies. The future challenge is to sustain and increase this stimulus by increasing investment in R&D and encouraging competition and innovation.

Promoting Skills, Education, and Development

Chapter 4 examines the implications for the labor market of an increasingly technology-driven economy. The chapter focuses on two key transformations of the labor market: the increasing value of education and the improved opportunities for women, minorities, and persons with disabilities. The last several decades have seen a substantial gap emerge between the earnings of those with a college education and of those with less education, even though the average level of educational attainment has risen over the century. The economy has clearly put a high premium on a new set of skills, and despite the progress that has been made, there remains for some workers a mismatch between the skills they possess and the skills that firms demand.

Chapter 4 also examines the role of government and the policies put forth by this Administration to help workers adjust to the rapidly changing economy. The chapter includes a discussion of education policies from preschool to postsecondary, and of private and government training programs. The chapter presents evidence on the effectiveness of these training programs in improving the achievement levels of students as well as the labor market outcomes of various groups of workers. The evidence suggests which types of programs might be most successful and cost-effective at improving the skills of workers in the future.

The challenge in this area is to develop a comprehensive set of education and training policies that create a framework of lifetime learning within which workers can acquire and maintain the skills they need to be successful

in the new labor market. The chapter discusses a number of recent initiatives. These include efforts to reduce class size and improve teacher quality, policies that have been shown to be effective at the elementary and the secondary level; initiatives, such as the Technology Literacy Challenge and the E-rate, that are attempting to provide students access to the technologies they will need to master in order to succeed in today's labor market; the HOPE Scholarship program, a tax credit that will ideally make the first 2 years of college as universal as high school; and the Workforce Investment Act, a new training initiative being phased in during 2000, which will help workers acquire the skills they need in the 21st-century economy.

Supporting the Diverse American Family

The importance of skills and the shift from backwork to brainwork have changed the employment prospects for women and, together with other changes, have altered the character of the American family. Chapter 5 discusses how the decline in the importance of the traditional one-breadwinner, one-homemaker family and the increase in the prevalence of two-earner and single-parent families have changed the opportunities and challenges that American families face at the beginning of the new century. In particular, the chapter looks at the balance between the rewards of work and the needs and rewards of family time. It notes three key trends that have shaped the American family. One is the rise in female labor force participation over the century, as more opportunities have opened up for women to work and more women have taken advantage of those opportunities. Another is the changing patterns of family formation and dissolution, which have contributed to the growing prevalence of single-parent families. A third is the improvements in health and life expectancy that have added new responsibilities to those that most families can expect to face, namely, care of elderly parents in addition to preparation for their own retirement.

The chapter then considers differences among family types with respect to income and time available outside of work. It looks at Administration policies that address the "money crunch" faced by families who feel their resources are stretched to the limit. These policies include expansion of the Earned Income Tax Credit, increases in the minimum wage, welfare reform, the $500-per-child tax credit, and policies to help families invest in skills, such as the HOPE Scholarship program, already mentioned. The Administration has also pursued policies like those embodied in the Family and Medical Leave Act to help families deal with the "time crunch" they face while trying to balance work and family time.

Policies like the child tax credit and the Family and Medical Leave Act have addressed important challenges facing the American family. But the Administration recognizes that it will be a continuing challenge to ensure

that the economy provides workers both the opportunity to work and the ability to spend quality time with their families.

Exploiting the Potential of Globalization

Chapter 6 analyzes the effects of globalization on the U.S. economy. Trade and, to a much lesser extent, investment links were well established a century ago, but both deteriorated during the interwar period. Over the past 50 years, however, international trade and investment have risen sharply. Today, global ties—through goods and services trade, through capital flows, and through integrated production relationships among firms and their affiliates—are generally broader and deeper than ever before.

The forces driving globalization include technology and policy. Technological improvements—in transportation, communications, information management, and elsewhere—have reduced the costs of doing business internationally, thus lowering significant barriers to trade and capital flows. These improvements have also increased the range of possible commercial transactions, particularly in financial markets, and have created venues for new kinds of transactions, such as electronic commerce. Policy has also played an active role in reducing barriers to trade and investment. For example, in the latter half of the 20th century, policy measures have sought to reduce tariff and nontariff trade barriers. More recently, and especially since the 1970s, many countries have decided to remove restrictions on capital flows.

Our openness to the world makes us more prosperous. The freedom of consumers and businesses to choose from a wider range of products and services improves efficiency, promotes innovation, encourages the transfer of technology, and otherwise enhances productivity growth. Trade allows us to specialize in what we do best. All these benefits, in turn, lead to higher real incomes and wages.

The United States has long sought to extend the benefits of international trade and investment as widely as possible, but significant challenges remain. Although trade liberalization lies at the heart of the World Trade Organization (WTO) and continues as a central objective of U.S. policy, a number of institutional issues have come to the fore. The United States is seeking greater consideration of labor and environmental concerns in the WTO and more openness in its proceedings. Moreover, despite the substantial benefits of trade, the transition to more open markets may be difficult for some U.S. industries and their workers. Those who are dislocated suffer real costs, and therefore the Administration supports domestic policies that help ease the transition for those affected. The recent financial crises in Asia have been particularly disruptive. Such crises in emerging markets draw attention to yet another challenge: the risk that sudden reversals in capital flows can be

disruptive in some cases. Finally, the growing U.S. trade deficit raises the challenge of ensuring not only that the United States remains an attractive location for investment, but also that Americans are saving enough for the future.

Maintaining the Environment Efficiently

Chapter 7 notes that although economic growth and structural and technological change have altered the U.S. economy substantially for the better over the past century, they have brought in their wake an array of environmental problems, including air, water, and soil pollution. However, economic growth has also provided the innovation and the resources to address these environmental problems.

The chapter describes how traditional regulatory approaches designed to address environmental problems have delivered substantial benefits but have carried significant economic costs. It then discusses how experiences with market-based approaches to pollution abatement, such as permit trading and emissions charges, have shown ways to achieve environmental goals at lower cost while providing the proper incentives for innovation. It suggests that applying these lessons about the design of environmental markets to future environmental problems is critical if environmental goals are to be achieved most efficiently.

The most significant environmental problem of the 21st century is probably global climate change. Chapter 7 argues that this problem is best addressed through market-based approaches. The challenge is to design policies appropriate to the problem. Emissions trading could serve as a powerful tool to reduce greenhouse gases, because these come from a very large number of sources with a wide range of abatement costs and have the same environmental effect regardless of the source location.

In negotiations of the Kyoto Protocol to the Framework Convention on Climate Change, the Administration has advocated international emissions trading and project-oriented mechanisms that effectively allow for flexibility across sources and countries in meeting climate goals. A broad international trading system can significantly lower the costs of achieving emissions targets set in the Kyoto Protocol while also delivering substantial revenue to low-cost-abating countries, which would be sellers in an international emissions market. Future international climate negotiations can resolve many of the implementation issues regarding these market-based approaches. Appropriate design of these approaches can ensure that the first steps taken to address climate change will deliver environmental benefits at the lowest possible cost.

Conclusion

As we enter the 21st century, the principal challenges we face are to sustain the extraordinary progress that America has made in this record-breaking expansion, and to make sure that all Americans share in the strong economy. The goal should be to make the accomplishments of this new century even better than those of the last. New policy issues will surely emerge, but the policy framework that has worked so well—maintaining fiscal discipline, investing in people, and opening international markets—is the right one to take us forward.