

**THE ANNUAL REPORT  
OF THE  
COUNCIL OF ECONOMIC ADVISERS**

LETTER OF TRANSMITTAL

COUNCIL OF ECONOMIC ADVISERS,  
*Washington, D.C., February 3, 1995.*

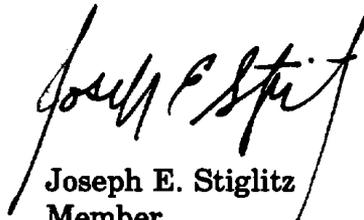
MR. PRESIDENT:

The Council of Economic Advisers herewith submits its 1994 Annual Report in accordance with the provisions of the Employment Act of 1946 as amended by the Full Employment and Balanced Growth Act of 1978.

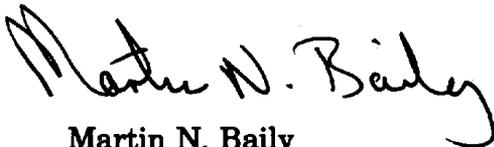
Sincerely,



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## CHAPTER 1

# Implementing a National Economic Strategy

BY MOST STANDARD MACROECONOMIC INDICATORS, the performance of the U.S. economy in 1994 was, in a word, outstanding. The economy has not enjoyed such a healthy expansion of strong growth and modest inflation in more than a generation.

Growth in 1994 was robust, fueled by strong investment spending. Nonfarm payroll employment grew by 3.5 million jobs, the largest annual increase in a decade, and the unemployment rate fell by more than a full percentage point, to 5.4 percent. Buoyed by improving job prospects and growing incomes, consumer sentiment hit a 5-year high, and retail sales expanded at their fastest pace in a decade. Yet despite growing demand both at home and abroad, inflation remained modest and stable. The core rate of consumer price inflation (which removes the effects of volatile food and energy prices) registered its smallest increase in 28 years. And the Federal deficit declined by more than \$50 billion, as the ratio of Federal discretionary spending to gross domestic product (GDP) fell to its lowest level in 30 years.

The economy's performance in 1994 is even more remarkable when viewed against the backdrop of the economic challenges confronting the Nation around the time this Administration took office. Then the economy seemed mired in a slow and erratic recovery from the 1990–91 recession, business and consumer confidence was low, and the unemployment rate was over 7 percent. Between 1989 and 1992 the Federal deficit had jumped by \$137.9 billion, to 4.9 percent of GDP, and even larger deficits were looming on the horizon. To make matters worse, the problems of anemic recovery and mounting deficits were superimposed on some disturbing long-term trends: a 20-year slowdown in productivity growth, a 20-year stagnation in real median family incomes, and a 20-year decline in real compensation levels for many American workers. For an increasing number of these workers and their families, the dream of rising incomes and prosperity appeared to be fading away under the pressures of rapid technological shifts and a changing global economy.

This Administration moved quickly and decisively to improve the economic situation, and the turnaround in macroeconomic performance has been dramatic. The deficit has declined sharply, the econ-

omy has grown at a more rapid and even pace, and more and more Americans are participating in the Nation's economic expansion. At the same time, the Administration has acted to help reverse the long-term trends that continue to depress the incomes of many Americans. That, however, will take time: problems that were 20 years in the making cannot be solved in the course of 2 years. But the Administration's economic policies have begun to move the Nation in the direction necessary to again place the American dream within the grasp of all Americans.

This chapter describes the Administration's strategy for reviving economic growth and job creation, preparing American workers for the challenges and opportunities of changing technology and a global economy, opening foreign markets, and restructuring the Federal Government for greater efficiency and effectiveness. The chapter also provides an overview of three major policy initiatives—middle-class tax relief, welfare reform, and health care reform—that the Administration plans for the coming year. The remaining chapters of this *Report* examine both the accomplishments of the past year and the outlook for the future in greater detail.

## THE ADMINISTRATION'S ECONOMIC STRATEGY: A MIDTERM REPORT

This Administration entered office at a time of sluggish economic recovery, mounting fiscal deficits, disappointing income growth, and growing income inequality and poverty. The first challenge was to get the Nation's fiscal house in order after more than a decade of fiscal profligacy. One of the most fundamental lessons of economic history is that sustained economic expansion depends on sound fiscal foundations. Therefore the linchpin of the Administration's economic strategy was and remains a deficit reduction plan that is balanced and gradual, yet large enough to be credible and to have a significant and sustained effect on the course of the deficit over time.

A second defining component of the strategy is a set of policies to help American workers and businesses realize the opportunities that flow from rapid changes in technology and an increasingly global economy. The common theme of these policies is investment, public and private: on the public side, a shift in government spending away from current consumption and toward investment in children, education and training, science and technology, and infrastructure; on the private side, tax incentives to encourage investment by businesses and individuals in physical, scientific, and human resources. A logical implication of these policies is that government must not only spend less—it must also spend better, by focusing more of its resources on the Nation's future.

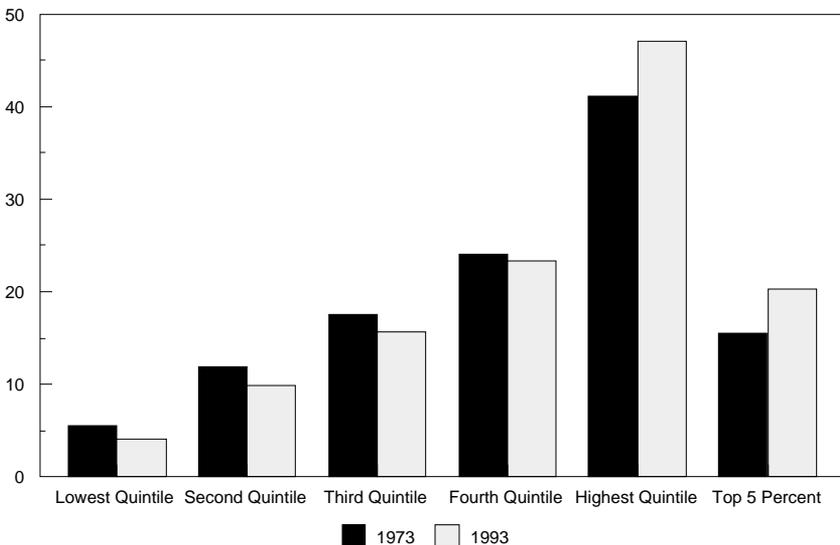
A third component of the Administration's economic strategy is tax relief for working families who have seen their incomes stagnate or decline over the past 15 to 20 years. The dimensions of the family income problem are compelling. The real median family income in 1993, the last year for which complete data are available, was virtually unchanged from what it had been in 1973, despite the fact that during the intervening 20 years real output had increased by 57 percent.

The stagnation of real median family income has been accompanied by an equally disturbing trend of increasing income inequality. In contrast to the years from 1950 to 1973, when average real family incomes increased across the entire income distribution, between 1973 and 1993 the share of total family income declined for the lower 80 percent of the income distribution (Chart 1-1). Meanwhile, at the bottom of the income distribution, the number of Americans living in poverty hit a 30-year high in 1993 of 39.3 million, 40 percent of them children.

**Chart 1-1 Share of Aggregate Family Income by Quintile**

Between 1973 and 1993, the share of money income received by the 20 percent of families with the highest incomes rose substantially. The shares for all other quintiles fell.

Percent



Source: Department of Commerce.

Although not all of the forces behind the rise in income inequality are understood, most economists agree that changes in technology that have reduced the demand for workers with relatively low levels of skill and education have played a major role. This insight lies behind the Administration's efforts to help Americans at-

tain the skills and training they need for today's high-paying jobs through changes in both government spending priorities and tax policies.

The Administration's first response to the dwindling income prospects of many working Americans took the form of a substantial expansion of the earned income tax credit (EITC). The EITC expansion, included in the Omnibus Budget Reconciliation Act of 1993 (OBRA93), increased the after-tax incomes of over 15 million American workers and their families. The EITC is a refundable tax credit that provides a bonus to eligible low-income workers—a bonus that can amount to over \$3,000 a year for a family with two children. Through the EITC these workers may realize after-tax incomes well in excess of their wages.

At the end of 1994 the President proposed a package of additional tax cuts that will extend tax relief to middle-class American families, to help them meet the costs of raising their children, acquire more education and training, and save for a variety of purposes. These proposed tax cuts reflect the much-improved outlook for the fiscal deficit, which allows the President to deliver on his campaign promise of tax relief for the middle class.

The Federal Government, too, must respond to the demands of economic change. That is why a fourth component of the Administration's economic strategy is to reinvent the Federal Government itself, so that it works better, costs less, and sheds functions that are no longer needed in today's economy or are better performed by either State and local governments or the private sector. The savings that can be realized by eliminating some existing programs and rationalizing and improving others are essential to achieving the goals of deficit reduction, tax relief to working families, and a shift in the balance of Federal spending toward more investment.

Finally, the Administration has linked its ambitious domestic economic strategy to an equally ambitious foreign economic strategy based on promoting global trade liberalization. During the last decade trade has become an increasingly important source of high-wage jobs for American workers. Recognizing this reality, the Administration has wedded policies to make Americans more productive with policies to improve their access to expanding international markets on more equitable terms.

## TOWARD FULL EMPLOYMENT WITH FISCAL RESPONSIBILITY

In early 1993, the Administration faced the challenge of ensuring that the economic recovery from the 1990–91 recession would gain strength and return the economy to full utilization of its resources. At the same time it was vital that this be accomplished in a sound

and balanced way, to avoid an acceleration of inflationary pressures. As the preceding discussion indicates and as Chapter 2 delineates in greater detail, this challenge was met in 1994.

In part as a result of the Administration's 1993 budget package, the Nation's fiscal environment today is sounder than it was during the preceding 14 years. Federal Government purchases of goods and services declined in real terms, and the Federal deficit in fiscal 1994 was more than \$50 billion lower than in fiscal 1993 and about \$100 billion lower than what had been forecast before the enactment of OBRA93. Excluding interest payments on the debt incurred by previous Administrations, the Federal budget in fiscal 1994 was essentially balanced, and the Federal debt outstanding, which had nearly quadrupled between 1981 and 1992, had begun to stabilize relative to the size of the economy. Moreover, as Charts 1-2 and 1-3 indicate, the Administration's deficit reduction measures—along with welcome slowdowns in projected medicare and medicaid spending—have significantly improved the long-run deficit and debt outlook.

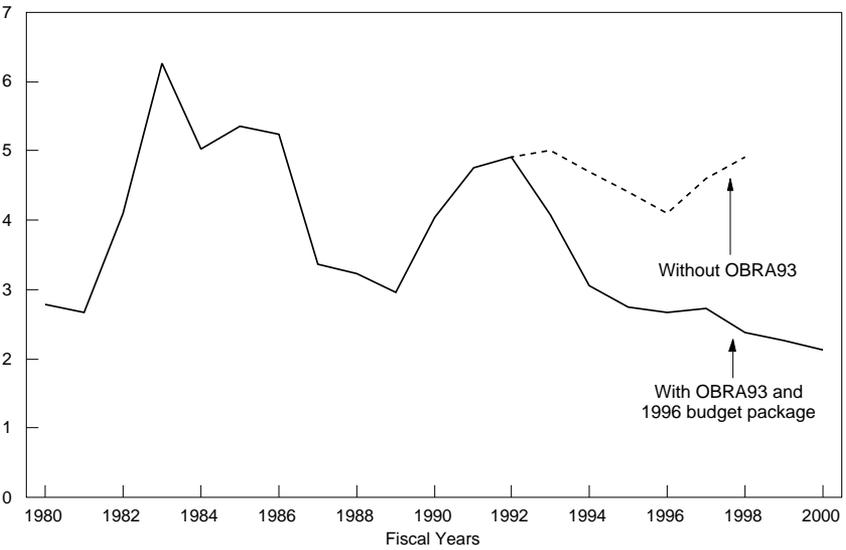
Chart 1-2 shows the Federal deficit as a percentage of GDP for fiscal 1993-98 as projected in April 1993, prior to the passage of OBRA93. The deficit was then expected to be around 5.0 percent of GDP in 1993, falling to a low of 4.1 percent in 1996 before rising again to 4.9 percent of GDP by 1998. The chart contrasts these gloomy predictions with the actual deficits for 1993 and 1994 and the projected deficits for 1995-2000 based on OBRA93, the Administration's fiscal 1996 budget proposal, and its current economic forecast. The actual deficit in 1993 was only 4.1 percent of GDP, thanks to the stronger than expected economic recovery and lower than expected interest rates. In 1994 the deficit fell to \$203.2 billion, or 3.1 percent of GDP, and in 1998 it is slated to fall to 2.4 percent of GDP, the lowest level since 1979. Over the entire 1994-2000 period the deficit is forecast to average about 2.5 percent of GDP, well below the levels that would have been reached in the absence of OBRA93 and nearly 2 percentage points less than the 1982-93 average of 4.4 percent. Chart 1-3 shows that the debt-GDP ratio is also expected to be stable through the end of the decade.

The effects of the Administration's budget plan on economic performance were in line with its predictions—and completely at odds with the gloomy prognostications of its critics. A dramatic decline in long-term interest rates in 1993, occasioned in part by market expectations of a significant long-term reduction in government borrowing needs, fostered strong growth in interest-sensitive investment and consumption spending. As business expectations improved, new job creation picked up pace, and the growth in incomes in turn reinforced consumer spending, creating the kind of virtuous

**Chart 1-2 Federal Budget Deficits With and Without Deficit Reduction**

Budget deficits would have remained quite large relative to the size of the economy without deficit reduction initiatives. Instead, deficits have fallen sharply.

Percent of GDP

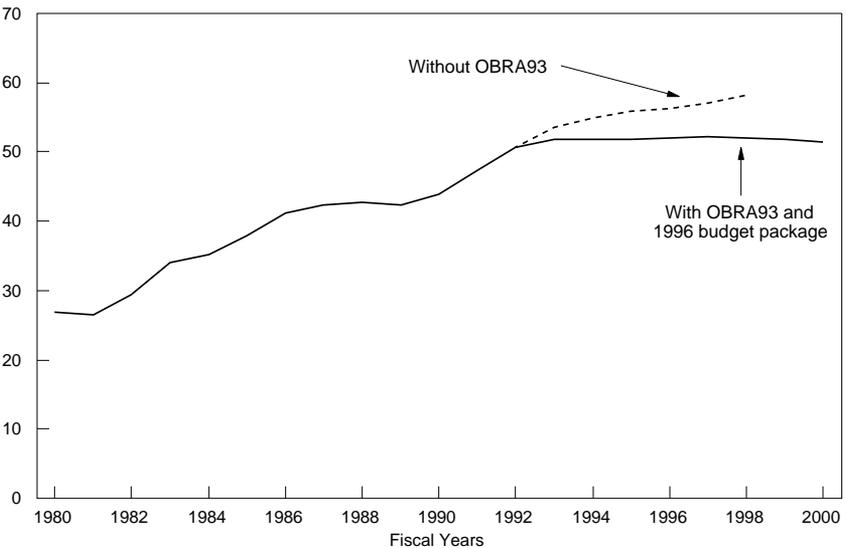


Source: Office of Management and Budget.

**Chart 1-3 Publicly Held Federal Debt With and Without Deficit Reduction**

Federal indebtedness as a percent of GDP is expected to remain approximately constant through 2000 under OBRA93 and the Administration's 1996 budget proposal.

Percent of GDP



Source: Office of Management and Budget.

cycle of employment, income, and spending growth that is the hallmark of periods of robust expansion. The acceleration of growth around the world, coupled with the Administration's strong leadership in expanding world trade, added to the momentum by encouraging American companies to invest in greater capacity to serve growing global markets.

As the economy expanded, the Federal Reserve raised interest rates several times, tightening the stance of monetary policy in an effort to prevent inflation from accelerating. The increase in short-term interest rates resulting from Federal Reserve actions was substantial. Long-term rates also increased significantly during the year, and the flattening of the yield curve (which plots rates of interest for debt of all maturities prevailing at a given time) that most economic forecasters had predicted failed to materialize. Although the causes of the rise in long-term rates continue to be debated, the analysis in Chapter 2 suggests that it was largely the result of a strong economy and reflected an increase in the demand for capital, as businesses and households increased their borrowing to invest in durable goods and structures both at home and around the world. Despite this increase, however, long-term interest rates remained lower than they would have been if the government's voracious borrowing needs had not been curbed by the enactment of the Administration's deficit reduction program.

## ENHANCING THE ECONOMY'S LONG-RUN GROWTH POTENTIAL

Chapter 3 analyzes the sources of long-term growth in the economy and confirms a simple but powerful proposition: the rate of growth of productivity is the most important determinant of how fast the economy can grow and how much living standards can rise over time. What happens when productivity growth slows? Chart 1-4 shows that growth in both real compensation per hour and real median family income slowed markedly in the early 1970s. This is precisely the period when productivity growth also slowed, from an annual average rate of 3.1 percent between 1947 and 1973 to an average of just 1.1 percent in the two decades since. This slowdown shows up not only in the economic statistics, but also in the lives of many Americans who know that they are working harder for less. (Productivity growth is measured here using fixed-weight data. An alternative measure using chain-weighted data is presented in Chapter 3. See Box 3-1 for a more detailed discussion. Although the two measures differ somewhat, both show a similar post-1972 slowdown in productivity growth.)

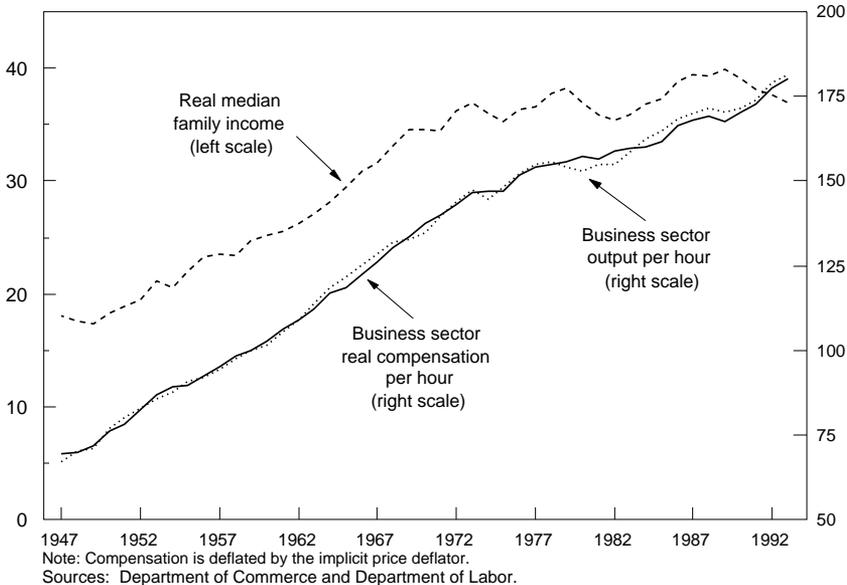
Although economists do not completely understand all the determinants of productivity growth, it is known that increases in physical, human, and technological capital play a key role. This insight

Chart 1-4 **Real Income, Productivity, and Compensation**

Productivity, real income, and real hourly compensation all slowed markedly around 1973.

Thousands of 1993 dollars

Index, 1959=100



has shaped the Administration's economic strategy from the beginning. The link between real productivity growth and the rate of investment in the Nation's capital stock is straightforward: investment in physical capital and new technology equips workers with more and better capital; workers so equipped are more productive. Investment in skills and training also adds to productivity by allowing workers to utilize physical capital more effectively. And more-productive workers tend to earn higher real wages. Few propositions in economics are as well documented as these or command as much support among professional economists, whatever their political persuasion.

## DEFICIT REDUCTION AND INVESTMENT

A primary economic reason for reducing the Federal deficit is to increase national saving, in the expectation that increased saving will in turn increase national investment in physical capital (Box 1-1). As Chart 1-5 shows, investment rates and productivity growth rates correlate highly across countries. National saving rates and national investment rates also correlate highly across countries, despite the increasing globalization of world financial markets. The implication is that increased national saving should be associated with increased productivity.

### **Box 1-1.—The Economic Rationales for Deficit Reduction**

Perhaps the most important reason for reducing the Federal budget deficit is to increase national saving. A higher rate of saving cuts the cost and increases the availability of capital for private borrowers and reduces the need for the United States to borrow from the rest of the world. The personal saving rate in the United States has been too low to cover both private investment needs and the combined borrowing needs of all levels of government. As a result, the Nation has borrowed massively from the rest of the world, running a persistent surplus in its international capital account. Since the capital and current accounts must balance under floating exchange rates, the mirror image of this capital account surplus has been an equally large current account deficit.

Demographics are likely to exacerbate the problem of insufficient national saving in the first half of the next century. As the U.S. population ages, the payment of federally sponsored retirement and health benefits will place increasing burdens on the budget. Absent an increase in private saving, larger government deficits will mean diminished resources for private investment and a further increase in borrowing from the rest of the world. However, since many countries will be facing similar demographic pressures, the United States is likely to find itself competing with them for worldwide saving to cover its borrowing needs.

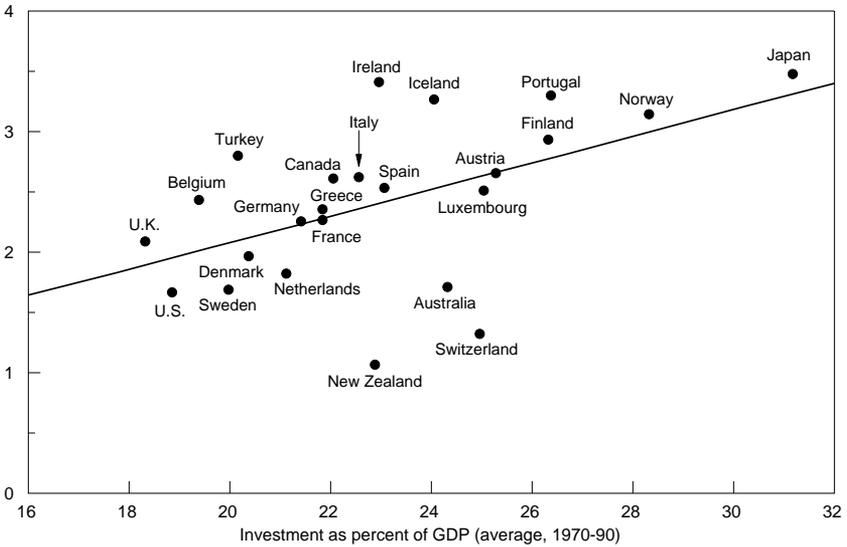
A second reason for reducing the deficit is to reduce the debt burden that the present generation will bequeath to future generations. Gross Federal debt per capita—a debt that every American is saddled with at birth—is approaching \$20,000. This legacy of debt is a real concern, yet it is important not to overstate the problem or to use it as an excuse to skimp on public investment. We also bequeath to future generations a stock of physical capital—highways, airports, and the like—as well as a stock of human capital and technological knowledge. Because these add importantly to future generations' productivity and well-being, these assets will somewhat reduce their debt burden.

A third reason is that a large deficit hamstrings discretionary fiscal policy as a tool of macroeconomic stabilization. In the presence of a looming deficit, it is difficult for the Federal Government to respond to cyclical slowdowns by cutting taxes or increasing spending. A gradual policy of reducing deficits can build a cushion in case the Federal Government needs to engage in countercyclical fiscal policy sometime in the future.

### Chart 1-5 Investment and Productivity

There is a close correlation between investment rates and productivity growth rates across industrialized countries.

Average annual per capita real GDP growth rate, 1970-90 (percent)



Source: International Monetary Fund.

According to this reasoning, deficit reduction is not an end in itself but a means to the end of greater national investment and higher living standards. This logic has three important corollaries.

First, bringing the Federal deficit down is only one step toward a more productive and prosperous future. That is why, in addition to measures to reduce the deficit, the Administration's 1993 budget package contained several new proposals to encourage private investment, including an increase in the amount of equipment that small businesses may deduct immediately in computing their income tax liability, a targeted reduction in capital gains tax rates on long-term equity investments in certain small businesses, and needed public investments. The President's 1996 budget plan builds on these priorities, holding the line on the deficit, cutting outdated government programs while investing in new and existing ones, and offering a package of new middle-class tax incentives.

Second, squeezing worthwhile public investments out of the budget is the wrong way to reduce the deficit. America needs more of both public and private investment, not a swap of one for the other. That is why the Administration seeks not only to constrain total government spending but also to reorient it more toward the future. Between fiscal 1993 and fiscal 1996, overall discretionary government spending is expected to remain nearly unchanged in nominal terms (and fall by more than 6 percent in real terms). At

the same time, discretionary spending on the Administration's public investment programs in such vital areas as education and training, technology support, public health, and infrastructure increases by over \$24 billion. Over this short time period, investment programs will increase from 11.5 percent to 15.5 percent of total discretionary spending.

Third, because deficit reduction—whether accomplished through increases in revenues or decreases in spending—has a direct contractionary effect on aggregate spending, there are limits to the amount of deficit reduction the economy can be expected to withstand within a short period without endangering economic growth. Over the long run, deficit reduction makes room for additional private investment, but in the short run it depresses aggregate demand and as a result can actually depress private investment. If long-term interest rates do not decline sufficiently fast and far to replace the aggregate demand lost through deficit reduction, economic growth will slow, and this will discourage private investment. The policy challenge is to bring the deficit down gradually and credibly, so as to increase national saving and investment, but not so rapidly as to threaten continued economic expansion. This challenge was met in 1994, and the Administration's economic forecast indicates that it will continue to be met through the remainder of this decade. The success to date in meeting this challenge is one reason why the Administration opposes a balanced budget amendment to the Constitution (Box 1-2).

## INVESTING IN SKILLS AND EDUCATION

Education and training—investments in human capital—are a wellspring of human progress, a basic foundation of the country's long-run growth potential and its long-run viability as a democracy, and the ladder of opportunity for all of its citizens (Box 1-3). As already noted and as analyzed in considerable detail in Chapter 5, today's high-paying job opportunities demand increasing levels of education and training. In part as a result of rapid changes in technology and the global economy, the real average annual earnings of male high school graduates declined by 15 percent between 1979 and 1992. In 1992 the annual average earnings of a male college graduate were 64 percent higher than the average annual earnings of a male high school graduate; in 1979 the difference had been only 43 percent (Chart 1-6).

The Administration is embarked on an ambitious agenda to improve the education and training prospects for all Americans, and with support in the Congress it has achieved considerable success on this agenda during the last 2 years. The Administration is committed to ensuring that at every stage of life—preschool, elementary school, secondary school, college, and in the work force—all

### **Box 1-2.—The Shortcomings of a Balanced Budget Amendment**

Continued progress on reducing the Federal budget deficit is sound economics; a constitutional amendment requiring annual balance of the Federal budget is not.

The fallacy in the logic of the balanced budget amendment lies in the premise that the size of the Federal deficit is purely the result of deliberate policy decisions. In reality, the pace of economic activity also plays an important role. An economic slowdown automatically depresses tax revenues and increases government spending on such cyclically sensitive programs as unemployment compensation and food stamps. As a result, the deficit automatically worsens when the economy goes into recessions, and these temporary increases in the deficit act as “automatic stabilizers,” quickly offsetting some of the reduction in the purchasing power of the private sector.

A balanced budget amendment would throw the automatic stabilizers into reverse. The Congress would be required to raise taxes or cut spending programs in the face of a recession, to counteract temporary increases in the deficit. Rather than moderate the normal ups and downs of the business cycle, fiscal policy would be forced to aggravate them.

Under a balanced budget amendment, monetary policy would become the only tool available to stabilize the economy. But there are several reasons why the Federal Reserve on its own would not be able to moderate the business cycle as well as it can in concert with the automatic fiscal stabilizers. First, monetary policy affects the economy only indirectly and with long lags, making it difficult to time the desired effects with precision. Second, the Fed could become handcuffed in the event of a major recession, its scope for action limited by the fact that it can push short-term interest rates no lower than zero, and probably not even that low in practice. Third, the more aggressive interest rate movements required to limit the cyclical variability of output and employment could actually increase the volatility of financial markets—something the Fed would probably try to avoid.

The role that fiscal policy can play in smoothing fluctuations in the business cycle is one of the great discoveries of modern economics. Unfortunately, the huge deficits inherited from the last decade have made discretionary changes in fiscal policy in response to the business cycle all but impossible. A balanced budget amendment would eliminate the automatic stabilizers as well, thus completely removing fiscal policy from the macroeconomic policy arsenal.

### **Box 1-3.—The Relationship Between Poverty, Education, and Earnings**

Our core democratic values affirm that each individual should have the opportunity to reach his or her full potential, regardless of race or the income or educational attainment of his or her parents. Yet numerous studies confirm that our Nation today is far from reaching this ideal. That shortfall imposes great costs both on individual Americans and on the country as a whole.

A recent study by a group of economists chaired by a Nobel laureate and commissioned by the Children's Defense Fund examined the effects of childhood poverty on an individual's future living standards. The study concluded that childhood poverty itself, as distinct from such factors as family structure, race, and parental education, has a significant adverse effect on both the educational attainment and the future wages of the Nation's poor children. The study found that children who experience poverty between the ages of 6 and 15 years are two to three times more likely than those who are never poor to become high school dropouts. Using years of schooling as a predictor of future hourly wages, the study concluded that just 1 year of poverty for the 14.6 million children and their families in poverty in 1992 costs the economy somewhere between \$36 billion and \$177 billion in reduced future productivity and employment.

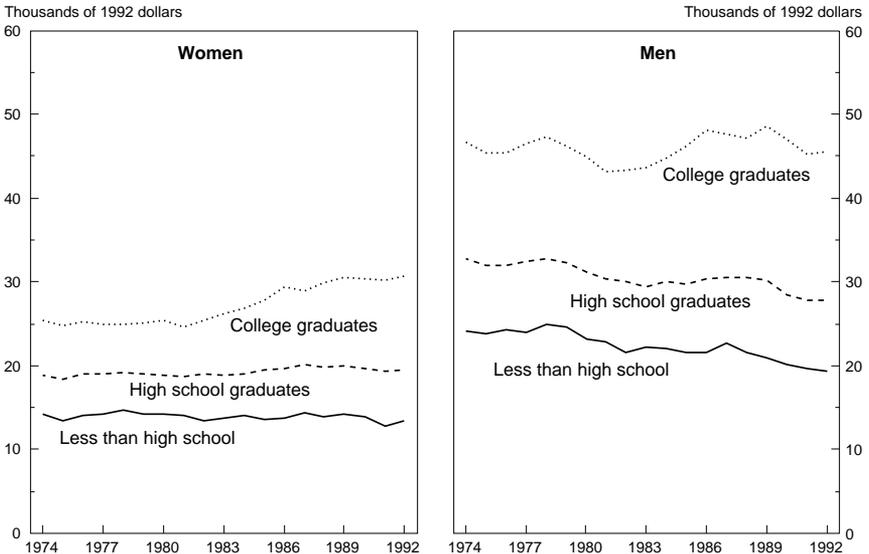
Significantly, one of the studies that the group examined concluded that each \$1 reduction in monthly assistance through the aid to families with dependent children (AFDC) program may reduce future output by between \$0.92 and \$1.51 (in present value terms) solely by reducing the educational attainment and future productivity of the children who are AFDC's beneficiaries.

Americans have the opportunity to acquire the skills they need to participate fully in today's economy. Chapter 5 of this *Report* describes the major components of the Administration's lifelong learning approach; we summarize them here.

Expanded support for Head Start—funding for which increased by 45 percent between the fiscal 1993 and fiscal 1995 budgets—has ensured that fewer disadvantaged children will have their opportunities shut off even before they reach kindergarten. Goals 2000 has put in place a national framework for school assessments to help citizens throughout the country evaluate how well their local schools are achieving basic educational goals. The School-to-Work

**Chart 1-6 Average Annual Earnings by Educational Attainment**

The gap in earnings between college graduates and workers with less education has widened among both men and women.



Note: Data are for year-round, full-time workers 18 years old and older. Observations for 1991 and 1992 are not directly comparable to those from prior years.  
Source: Department of Commerce.

transition program has provided support to States to develop partnerships between schools and businesses, to facilitate the process of moving high school graduates into promising job opportunities or further training and education.

Two innovative education programs developed by the Administration during its first 2 years are AmeriCorps (the national service program) and the income contingent student loan program. The former provides Americans with the opportunity to participate in community service projects while earning funds that can be used to pay for college or other postsecondary education. The income contingent student loan program both reduces the cost of student loans, by making them directly available from the Federal Government at more attractive rates than those offered by private sector lenders, and makes loan repayment after college less burdensome by allowing repayments to vary with the borrower's postcollege income. This program addresses one of the major capital market imperfections that discourages many Americans from attending college at a time when the returns to higher education have increased dramatically.

## INVESTING IN SCIENCE AND TECHNOLOGY

As the analysis in Chapter 3 indicates, advances in scientific and technological knowledge are another important determinant of long-run productivity growth. Moreover, as the history of this and other nations demonstrates, public investment has long played a vital role in promoting scientific discovery and technological change. At the heart of the dramatic improvements in agricultural productivity in the United States over the last century have been the research efforts conducted at federally supported land-grant colleges and the rapid dissemination of their results to millions of American farmers through the agricultural extension services supported by the Department of Agriculture. Similarly, Federal investments to promote research in public health, primarily through the National Institutes of Health, have produced many commercially successful new drugs, new treatment regimes, and innovative medical equipment, which are the foundations of America's premier position in the global biotechnology and medical equipment industries.

Federally supported research during World War II and the cold war promoted or accelerated the development of many new technologies for defense purposes—such as jet engines, computers, and advanced materials—that eventually found widespread success in commercial markets. One of the most successful computer-based innovations created by the Defense Department and adopted by the private sector is the Internet, which began life as ARPANET, a geographically distributed computer communications system designed to link researchers located at universities around the country. Today tens of millions of people around the world are communicating via the Internet for business, educational, and recreational purposes.

Most Federal investments in science and technology support the realization of a particular national mission—for example, increasing national security or enhancing public health. But economists have long recognized that there is a powerful rationale for Federal support to increase the general level of scientific investigation and technological innovation. Markets shape the behavior of private participants through incentives, but individuals and companies may invest too little in research and development (R&D), because market incentives do not reflect the full value to society of such investment. Significant economic gains from scientific discovery and technological innovation may remain unexploited because markets alone cannot guarantee that the innovator will capture all or even most of the economic returns to innovation. This is particularly

true of basic research, which increases the store of fundamental knowledge that underlies most technological innovation. But it is also true of many generic technologies, the benefits of which flow quickly and in some cases automatically beyond the laboratory or the factory floor where they were invented.

Empirical research tends to support these analytical arguments. As Chapter 3 documents, the estimated annual social rate of return to R&D spending can be as high as 50 percent, much higher than the average estimated private rate of return of 20 to 30 percent.

This Administration has built on the strong bipartisan tradition of Federal support for basic research and technological innovation. Even as overall discretionary spending has remained approximately constant in nominal terms, Federal spending on science and technology in this Administration has edged upward. Moreover, as Chapter 4 discusses in greater detail, the Administration has introduced several policy innovations to enhance the efficiency of Federal R&D support and to refocus it in ways that reflect tighter budgetary constraints, the new national security environment, and changing market conditions in high-technology industries.

## REINVENTING GOVERNMENT

Through the Vice President's National Performance Review (NPR), the Administration has, from its inception, taken on the difficult but critical task of reinventing government.

When an organization in the private sector becomes unresponsive to customers, encumbered by inflexible internal rules, saddled with ineffective management, or unwilling to buy inputs or produce goods and services at lowest cost, it will lose customers to rivals offering lower prices, superior products, or better service. If the firm's customers do not force an improvement in organizational behavior, its shareholders may replace senior management directly or do so indirectly by selling the company, or the company may simply go out of business.

Public sector organizations, on the other hand, often lack a clear and indisputable bottom line for their performance and are not subject to the same remorseless pressures that force private firms to function efficiently. The Office of Management and Budget, along with relevant congressional committees, attempts to monitor organizational performance within the Federal Government. But systematic and thoroughgoing organizational improvement of how the government functions requires strong leadership and the commitment of the most senior executive branch officials—as has been provided in this Administration through the NPR.

The NPR analyzed the characteristics of successful organizations in both the public and the private sector. Four principles emerged from this analysis as key to success: cutting red tape, putting cus-

tomers first, empowering employees to get results, and getting back to basics, which in the context of the Federal Government means producing a government that “works better and costs less.” To implement these principles throughout the Federal Government, the NPR has sought ways to decentralize decisionmaking power within agencies, to give Federal workers the tools they need to do their jobs and hold them accountable for results, to replace regulation with incentives and market solutions, to expose Federal operations to competition, to eliminate unnecessary or duplicative government functions and rules, and to establish concrete measures of success, one of which is customer satisfaction with government services.

Through the end of 1994 the Administration’s reinventing government reforms had reduced the Federal work force by about 100,000 employees, out of a total reduction of 272,000 planned by 1999, and essentially shredded the 10,000-page Federal personnel manual. Other NPR initiatives—including procurement reform, one of its notable successes, and the proposal to restructure the organization controlling the Nation’s air traffic control system—are discussed in Chapter 4.

At the end of 1994 the Administration announced a second round of NPR reforms, beginning with the restructuring of three cabinet departments and two major government agencies. The reform plan proposes to consolidate 60 existing programs in the Department of Housing and Urban Development (HUD) into three performance-based funds. This will enable HUD to focus its mission more sharply on promoting economic development for communities and facilitating transitions to economic independence for needy families. The Department of Transportation will collapse its 10 operating agencies into 3 and consolidate over 30 separate grant programs to States and cities into one flexible transportation infrastructure program, emphasizing capital investment assistance. And the Department of Energy will privatize some of its oil and gas reserves, sell its excess uranium, reduce costs in its research programs and laboratories, and substantially reorganize its nuclear waste cleanup program.

Taken together, the NPR reforms announced at the end of 1994 will cut \$26 billion from government spending over 5 years. Yet another phase of the NPR will propose additional agency restructuring in the coming months. The savings from these and other reforms will be used to finance the President’s proposed middle-class tax cuts and to continue progress on reducing the Federal deficit. With these additional cuts, discretionary government spending as a share of GDP is slated to fall below 6 percent by the year 2000, less than half the share in 1970, and the Federal work force is slated to fall to its lowest level in the decades.

## OPENING FOREIGN MARKETS

The expansion of international trade is integral to raising American incomes, and exports play an increasingly important role in providing a livelihood for American workers. Between 1986 and 1993 increased exports were responsible for 37 percent of U.S. output growth. The jobs of more than 10 million American workers now depend on exports, and export-related jobs pay wages significantly above the average. In addition, the reduction of barriers to trade raises standards of living by providing a wider variety of goods at lower prices. And foreign competition leads to greater efficiency and higher quality in U.S. production, spurring the productivity growth that is essential for real income growth.

This Administration came to office committed to opening foreign markets to U.S. exports and bringing down barriers to trade, and it has achieved remarkable success. As detailed in Chapter 6, the Uruguay Round agreement of the General Agreement on Tariffs and Trade (GATT) will bring down foreign tariffs facing U.S. exporters by about a third on average, open foreign markets in agricultural products and services for the first time, and do much to establish a single rulebook for all trading countries. The North American Free Trade Agreement (NAFTA) with Mexico and Canada is a pathbreaking accord with two of our three largest trading partners, achieving a degree of liberalization well beyond that of similar international agreements. In its bilateral negotiations, the Administration has been forceful in seeking market-opening measures in Japan, China, and other countries and in advancing the interests of U.S. exports through its National Export Strategy. Finally, during the second half of 1994 the Administration helped launch negotiations that will lead to the creation of open and free trade areas among the countries of the Western Hemisphere by 2005 and among the countries of the Asia-Pacific Economic Cooperation forum by 2020.

The Administration's efforts come at a moment of historic opportunity in the global trading system. Less developed countries and the economies in transition from central planning, having recognized the importance of international trade in fostering economic growth, are now willing to lower their barriers to imports. The Administration's efforts in NAFTA and in encouraging movement toward free trade areas in the Western Hemisphere and the Asia-Pacific region have established an environment in which countries feel they must participate in meaningful trade liberalization efforts or be left out.

In a dynamic world economy, trade means challenge and adjustment as well as opportunity. The Administration's domestic economic policy is a necessary complement to its trade policy. By encouraging investment and research and development to maintain

and increase U.S. competitiveness, and by investing in people—maximizing their ability to acquire skills and move to higher paying jobs in newly emerging occupations—the Administration seeks to ensure that Americans gain all the benefits possible from competing in world markets.

## THE ADMINISTRATION'S ECONOMIC STRATEGY: THE UNFINISHED AGENDA

For all of its remarkable accomplishments, the American economy continued to suffer from some persistent long-term difficulties in 1994. Although improvement was seen in the quality of new jobs created, the real earnings of American workers continued to stagnate. Long-term unemployment rates remained stubbornly high, especially when viewed against the backdrop of more than 3 years of economic recovery. The unemployment rates of black Americans remained more than double that for whites. More children lived in poverty in 1993 than in any year since 1965, despite the doubling of real GDP over the same period.

In light of such disturbing trends, it is not surprising that so many Americans feel increasingly cut off from the prosperity of an expanding economy. The experience of 1994 confirms that even though a strong and sustainable economic expansion is a necessary condition for improving the living standards of all Americans, it is not sufficient. Still other policies are required to help Americans obtain the skills and the education demanded by today's technologies and international markets, and to cope with the often significant dislocations that are a natural feature of today's economy.

Over the next 2 years the Administration plans several major policy initiatives, including tax relief for middle-class families, welfare reform, health care reform, and continued restructuring or reinvention of the Federal Government. In addition, the President recently announced a proposal to increase the minimum wage from its current level of \$4.25 per hour. This proposal reflects a determination to ensure that working families can lift themselves out of poverty, as well as a recognition that inflation has reduced substantially the real value of the minimum wage (see Chapter 5 for further discussion of the minimum wage). Every one of these policy initiatives is designed to keep the economic expansion and deficit reduction on track while enabling all Americans to enjoy the benefits of a healthy American economy.

### MIDDLE-CLASS TAX RELIEF

A little over 50 years ago the GI Bill of Rights, designed to help average Americans purchase homes, improve their educations, and raise their families was signed into law. The GI bill helped trans-

form a wartime economy into an extraordinarily successful peacetime economy and in the process helped build the great American middle class. At the end of 1994 the President announced a new Middle Class Bill of Rights, which like the GI Bill of Rights from which it draws its inspiration, is designed to help average Americans cope with the demands of today's economy.

The Middle Class Bill of Rights includes a three-part tax package: a \$500 per-child tax credit, a tax deduction for up to \$10,000 for annual expenses on postsecondary training and education, and an expansion of individual retirement accounts (IRAs) to all middle-class families. An estimated 87 percent of the benefits of the proposed tax cuts would go to families with annual incomes under \$100,000. In addition, the Middle Class Bill of Rights contains a plan to consolidate over 50 government training programs into a single training voucher system that would allow eligible workers to finance the training they need to obtain employment. What ties the package together is the belief that appropriately structured tax relief and support for training can help middle-class Americans invest in their own future earning power and that of their children.

The Administration proposes a \$500 nonrefundable tax credit for children under 13 in middle-class families. The credit would be phased out between \$60,000 and \$75,000 of annual adjusted gross income (AGI). This measure would increase the income tax threshold (below which no income tax is paid) for a married couple in the 15-percent tax bracket with two eligible children by \$6,667 (about a 30-percent increase over the current threshold). The child-based tax credit complements other parts of the Administration's profamily policy agenda, including the earned income tax credit expansion and welfare reform.

The proposed credit reflects the fact that the existing tax allowance for children—the dependent exemption—has not kept pace with inflation and income growth. In 1948 the real value of each child's personal exemption—\$3,700 as measured in 1994 dollars—was nearly half again as large as today's \$2,500 exemption. Meanwhile many of the costs of raising children—especially medical care and education—have increased far more rapidly than the overall price level. And child-rearing costs are often more burdensome for younger families, who are generally at a stage in their lives when incomes are relatively low. For all these reasons, taxpayers with children may have a substantially reduced ability to pay income taxes.

In addition to the child-based tax credit, the Administration has proposed a tax deduction for postsecondary education and training expenses (Box 1-4). Each year of postsecondary education or training has been shown to boost future earnings between 6 and 10 percent on average. Meanwhile the costs of a college education have

increased much faster than the overall consumer price index. Middle-class families have become less able to afford higher education just at the time when it is becoming an increasingly critical determinant of future earnings.

**Box 1-4.—The Proposed Tax Deduction for Postsecondary Education and Training**

The Administration's tax proposal would allow a deduction of up to \$10,000 for amounts spent by a taxpayer on postsecondary education and training expenses for the taxpayer and his or her spouse and dependents. This deduction would be used in determining the taxpayer's adjusted gross income. The maximum allowable deduction would be phased out for taxpayers filing a joint return with AGIs (before the proposed deduction) between \$100,000 and \$120,000. For a taxpayer filing as head of household or single, the maximum allowable deduction would be phased out for AGIs between \$70,000 and \$90,000. Qualifying educational expenses are those related to postsecondary education paid to institutions and programs eligible for Federal assistance. This includes most public and nonprofit universities and colleges and certain vocational schools.

Over 90 percent of families could potentially benefit from the proposed deduction.

Businesses have long been allowed to deduct the costs of providing education and training for their employees. Yet despite the high returns and the high costs of postsecondary training and education, the current tax code provides only limited preferences to individual taxpayers making such investments. The Administration's proposal will help ensure that the income tax deductibility of training and education expenses does not depend on one's employer paying for it. But more important, it will provide a financial incentive for Americans to get the education and training necessary to thrive in a changing economy. The Administration's proposed deduction recognizes that investment in human capital, like investment in physical capital, is a major determinant of growth in productivity and living standards.

The third component of the Administration's proposed tax package is an expansion of individual retirement accounts, aimed at encouraging households to save more and increase the Nation's worryingly low private saving rate. Under current law, for taxpayers with employer-provided pension coverage, eligibility for deductible IRAs is phased out for AGIs between \$40,000 and \$50,000 (for married couples filing joint returns; a lower threshold applies to taxpayers filing as single or head of household). Neither the maximum

annual deductible contribution per worker (\$2,000) nor the income thresholds are indexed for inflation. The proposal doubles the existing thresholds, making IRAs completely deductible for married couples filing joint returns with incomes below \$80,000, regardless of pension coverage, and allowing partial deductions for those with incomes up to \$100,000. In addition, the income thresholds and the \$2,000 contribution limit (both set in 1986) would be indexed for inflation. Finally, withdrawals from IRAs would be allowed without penalty to buy a first home, to pay for postsecondary education, to defray large medical expenses, or to cover long-term unemployment expenses. As already noted, faster wage and income growth is possible only by boosting investment and saving in America. The Administration's proposed IRA expansion is a way to promote greater awareness of personal responsibility for saving.

## WELFARE REFORM

The President entered office with a promise to reform the welfare system so that it would function as an effective safety net promoting work and family, rather than as a snare enmeshing poor families in long-term dependence. Under the current system some people have become long-term welfare recipients—although more than one-third of all women who ever receive AFDC do so for less than 2 years, almost one-fourth end up receiving AFDC for over 10 years during their lifetime. And, as currently structured, the welfare system in effect imposes a high marginal tax rate on paid employment, because low-income mothers lose their AFDC and food stamp benefits and eventually their medicaid health insurance for themselves and their children when they take a job. In short, for many the current system contains powerful disincentives against work and in favor of continued welfare.

The fundamental goal of all of the Administration's policies aimed at those at the lower end of the income distribution is to increase the rewards and hence the incentives to work. These policies are also designed to ensure that those willing to work will be able to live above the poverty level (see Box 1–5 for a discussion of how housing reforms relate to welfare reform).

The Administration's proposed welfare reform legislation, the Work and Responsibility Act, will help make work pay, by ensuring that welfare recipients obtain the skills they need to find employment, and by eliminating long-term welfare dependency as an option for those able to work. Under the Administration's plan, welfare recipients who are job-ready will begin a job search immediately, and anyone offered a job will be required to take it. Support for child care will be provided to help people move from dependence to independence. For those not ready for work, the Administration's proposed reforms will provide support, job training,

### **Box 1-5.—HUD Reforms and Welfare Reform**

The Administration has proposed major reforms aimed at reinventing the Federal Government's housing programs. These reforms will focus the efforts of the Department of Housing and Urban Development on two major tasks: empowering individuals and empowering communities.

The Administration's proposals for empowering individuals in the housing market bear a close connection to its proposals to reform welfare. The HUD reforms will gradually end public housing as we know it, moving from support of public housing *projects* to support of individuals who need housing. The current system impedes the job mobility of public housing recipients. In order to accept a job in another community, a recipient may have to give up the subsidized public housing he or she has and sign up at the bottom of a waiting list for housing assistance in the new location. In addition, public housing often concentrates the poor in areas where few jobs are available close at hand. Under the reinvention proposal, instead of being tied to a particular unit in a public housing project, households would be given portable rental housing certificates, which could be used to obtain housing in the private market. This reform would encourage mobility between jobs, impose market discipline on public housing authorities, help break up the dysfunctional concentration of the poor, and enable individuals to make housing choices best suited to their needs. In all these ways the HUD reform effort complements welfare reform by removing barriers to participation in the paid labor force.

and assistance in finding a job when they are ready. Each adult recipient of AFDC will be required to create an employability plan, to ensure that he or she will move into the work force as quickly as possible. Time limits on receipt of welfare benefits will require that anyone who can work, must work—in the private sector if possible, in a temporary, subsidized job if necessary.

The proposed program will strongly discourage children from bearing children. Parents under the age of 18, if they apply for welfare payments, generally will not be allowed to set up independent households; instead they will receive assistance to stay in school. The Administration's proposal also includes funding for grants to schools and communities to prevent teen pregnancy, and it toughens efforts to collect child support from all absent fathers—a provision that is expected to double Federal collections of child support payments, from \$9 billion to an estimated \$20 billion by 2000. These proposals to discourage teen pregnancy and to foster paren-

tal responsibility will help prevent the need for welfare in the first place.

In welfare as in other areas of joint Federal and State responsibility to help the poor, such as medicaid, the Administration is committed to working with the States to enhance the flexibility and efficiency of programs. For this reason the Administration has been an active proponent of granting waivers from various regulatory constraints, to allow States to experiment with new ways of designing welfare strategies and find the ones that best suit their particular needs and characteristics. During its first 2 years in office, this Administration granted waivers to enable 24 States to undertake welfare reform—more than all previous Administrations combined.

Partnerships with State and local governments take many forms. Box 1-6 describes one of the Administration's initiatives for working with State and local governments to encourage community-based solutions to economic development problems in poverty-stricken areas.

## HEALTH CARE REFORM

The President entered office with a pledge to reform the Nation's health care system, and he will continue to work with the Congress to realize this objective during the coming year. Reform is essential to address four separate but interrelated problems of the current system, which if left unsolved will result in an increasingly heavy financial burden on governments and individuals (Box 1-7).

First, millions of Americans, both insured and uninsured, do not have health security. Those who are insured face the risk of losing their coverage, at least temporarily, if they lose or change their jobs. Meanwhile the number of uninsured Americans continues to grow at an alarming rate.

Second, the current health insurance system has a number of shortcomings. One is that insurers know that a small proportion of the population incurs the bulk of medical expenditures, making it profitable to screen prospective purchasers to determine their risk characteristics; those who are sick—who have so-called pre-existing conditions—may be unable to purchase insurance altogether, or may only be able to purchase it at exorbitant prices. Another shortcoming is that people unable to obtain health insurance through their employers may be offered coverage only at prices unaffordable for many Americans. Still another is that many insurance policies do not cover a variety of large financial risks (e.g., high-cost illnesses), although these are exactly the kinds of risks for which insurance is most needed.

Third, the current health care system imposes a large and unsustainable burden on public sector budgets. Governments account for nearly half of all health care spending in the United

### **Box 1-6.—Empowerment Zones and Enterprise Communities**

OBRA93 contained a provision to create 9 empowerment zones and 95 enterprise communities in selected localities across the Nation. The designated zones and communities will receive significant tax benefits and new Federal resources totaling an estimated \$3.8 billion over the next 5 years, to support economic revitalization and community development. In December 1994 the President announced the areas selected to participate. Selections were based primarily on the strength of the applicants' proposed strategies for community-based development. Cities receiving urban empowerment zones are Atlanta, Baltimore, Chicago, Detroit, New York, and Philadelphia/Camden. Rural empowerment zones designated are the Kentucky Highlands region of Kentucky, the Mid-Delta region of Mississippi, and the Rio Grande Valley in Texas.

The empowerment zone/enterprise community program is based on the notion that development efforts can be targeted to areas that have been economically left behind. Besides receiving monetary awards totalling \$1.3 billion in financial assistance and \$2.5 billion in tax benefits over the next 5 years, the selected zones and communities (as well as nonselected applicants) may request waivers from many Federal regulations, and their requests will be processed on an expedited basis. To date over 1,200 such requests have been received. Perhaps more important, the areas selected generally are those that have effectively mobilized local private and public sector resources to leverage the potential Federal commitments. The application process encouraged localities to harness their own creative talents and financial resources to frame a comprehensive response to the problems of local economic development.

In a sense, the zones and communities selected are laboratories for experiments in local economic development. The Federal Government realizes that it does not have all the answers to the economic development conundrum; instead it has enlisted institutions at the State and the local level (including the private and nonprofit sectors) to help design possible solutions.

For the program to work, however, successful areas and the reasons for their success must be identified. Therefore a comprehensive evaluation process will follow the progress of the selected zones and communities and report periodically on them. The evaluation will largely determine whether the program should be replicated elsewhere.

### **Box 1-7.—The Cost of Doing Nothing About Health Care**

If no steps are taken to reform the Nation's health care system, existing trends will result in increased health care costs and reduced health insurance coverage. Neither of these outcomes is desirable. Without reform:

- Per capita health care costs will rise from about \$3,300 in 1993 to about \$5,200 in 2000.
- Aggregate health care costs, currently running at around 14 percent of GDP, will increase to an estimated 18 percent of GDP by 2005.
- Health care expenditures by the Federal Government will increase from 21 percent of total expenditures in 1994 to 26 percent by 2000.
- Medicare and medicaid expenditures will grow at 9.1 percent and 9.2 percent per year, respectively, over the foreseeable future, nearly three times as fast as overall consumer prices.
- More Americans will lose health insurance coverage, adding to the nearly 40 million without health insurance in 1993.
- Wages will continue to be held down, as an ever-greater proportion of total compensation is paid in the form of health benefits. In the past 5 years, health care benefit costs per employee rose at about twice the overall rate of inflation.

States, primarily in the form of payments for medicaid and medicare. Since 1980 the share of health care spending in the Federal budget has doubled; the budgets of State and local governments also saw larger shares going toward health expenditures.

Fourth, the current health care system suffers from numerous structural features that may keep costs high. For instance, fee-for-service providers may have an incentive to overprovide care, and provide some care that is inappropriate or of equivocal value, because they are generally reimbursed for each additional test or procedure they perform. For their part, consumers often do not have the information they need to evaluate the differences among providers or to determine whether or not the care prescribed for them is necessary. Moreover, in a system dominated by third-party payers (insurers), consumers seldom have a strong reason to be directly concerned about the cost-effectiveness of their care. Third-party payers have responded by establishing programs to review diagnoses and suggested treatments. Competition among insurers may help offset some of the effects of informational asymmetries.

Over the past few years, under the pressure of rapidly escalating costs, the private health care system has begun a process of dramatic structural change. In 1988, for example, only about 29 percent of health insurance enrollees were in some form of managed care plan, in most cases either a health maintenance organization (HMO) or a preferred provider organization (PPO). By 1993 this figure had increased to 51 percent. Much of this migration toward managed care has occurred in larger firms, where nearly 60 percent of covered employees are now in managed care plans. Many analysts credit managed care with keeping health care costs down. In the Far West, where HMO penetration is higher than elsewhere in the country, real spending on health care grew more slowly over the 1980–91 period than in any other region in the country (3.4 percent per year versus a national average of more than 4.5 percent). In part as a result of these changes, there is some promising evidence that growth in health care costs in the private sector may be slowing somewhat. For instance, medical price inflation slowed to a 5.4 percent annual rate in 1993 and slowed still further to 4.9 percent in 1994. Even the 1994 rate, however, was still well above the overall rate of inflation.

For a variety of reasons discussed in Chapter 2, the increases in medicare and medicaid spending projected for the coming years have been revised downward significantly. For instance, in January 1993 medicaid expenditures were projected to increase at an annual rate of nearly 15 percent through 1997. Yet actual medicaid expenditures grew by only 11.8 percent in fiscal 1993 and 8.2 percent in fiscal 1994. Accordingly, the 1996 budget projects slower growth in medicaid than did prior budgets, averaging slightly over 9 percent for 1996–2000. The situation for medicare is similar. Even with these changes, however, health care spending is slated to remain the most rapidly growing component of the Federal budget during the rest of this century, and to escalate during the first decade of the next century, partly in response to the aging of the American population.

This Administration remains firmly committed to reforming the current health care system in order to expand coverage, contain costs, and curb public sector deficits. Last year's debate on health care reform produced a consensus on several key points. Many of the alternative proposals included insurance market reforms, such as provisions to prevent insurers from denying coverage to those who have been ill. A number of bills recognized the importance of providing health care coverage to low- and middle-income Americans, especially children. It is possible to build on this consensus and achieve real reform.

The Administration believes that any successful reform must ultimately be comprehensive in scope, even if it proceeds step by

step. This belief rests on the reality that none of the four major problems of the current health care system identified above can be solved in isolation. For example, any attempt to impose arbitrary caps on Federal health care spending without more-fundamental reforms would simply shift more government program costs onto either State and local governments or the private sector. According to one recent estimate, uncompensated care and government programs that reimbursed hospitals below market prices shifted about \$26 billion in costs onto the private sector in 1991. Similarly, any attempt to provide universal coverage without complementary measures to improve competition and sharpen the incentives for more cost-conscious decisions by both providers and consumers would mean even more dramatic increases in systemwide costs. Limited reforms designed to eliminate the most glaring shortcomings of private insurance markets, although desirable, would not solve either the problem of providing health security for all Americans or the problem of escalating public health care bills. Finally, efforts by the private sector to control costs might well increase the number of Americans without health insurance, especially children and those most in need of medical attention.

Ultimately, meaningful reform of the Nation's health care system will do more than just unburden public sector budgets and provide health security. It will also improve living standards. For years, the rising cost of health care has forced a shift in the composition of the typical compensation package away from take-home wages and salaries and toward fringe benefits, especially health insurance. Between 1966 and 1994 the share of health benefits in total labor compensation increased from 2.0 percent to 7.2 percent, while the share of cash compensation correspondingly fell. In absolute terms average real take-home pay barely increased: most of the gains in total compensation were realized as fringe benefits. In short, working men and women, for the most part, paid for escalating health costs by taking home lower pay than they would have otherwise. On the assumption that the future will look much like the past, the Administration expects that any benefits of a reduction in health care costs resulting from meaningful reforms will show up in higher take-home pay for working Americans.

## CONCLUSION

Nineteen ninety-four was a very good year for the American economy. Indeed, robust growth, a dramatic decline in the unemployment rate, low inflation, and a much improved outlook for the Federal budget combined to yield the best overall economic performance in at least a generation. In addition, last year's economic

performance ranks as the best among the advanced industrial countries with which the United States is usually compared.

But the economic successes of the past year must not obscure the long-term economic challenges facing the Nation. Some of these, like the dramatic growth in entitlement spending projected for the first few decades of the next century, or the disturbing increase in the number of Americans without health insurance, result in large part from the interaction of national economic policy choices with the changing demographics of the American population. Others, such as the persistent decline in real compensation for many groups and overall increasing income inequality, may in large part result from worldwide changes in technology and other areas. These changes are creating a new world economy and a new American economy, which hold both the promise of a more prosperous future and the threat of more dislocation and adjustment for many American workers and their families.

As the Nation enters the last half-decade of this century, this Administration has already put in place some important foundations for greater prosperity. Over the coming year we look forward to working with the Congress, with the States, and, most important, with the American people, to address the Nation's long-term economic challenges and to make the most of the Nation's long-term economic opportunities.

## CHAPTER 2

# The Macroeconomy in 1994 and Beyond

IN 1994 THE AMERICAN ECONOMY enjoyed a balanced and broad-based expansion, marked by rising real output, declining unemployment, and modest and stable inflation. Over the year, real gross domestic product (GDP) advanced 4.0 percent and real disposable income rose 4.3 percent. Between January and December 1994 the unemployment rate declined 1.3 percentage points, and 3.5 million more payroll jobs existed in December 1994 than in December 1993. The consumer price index (CPI) rose by 2.7 percent, essentially the same rate recorded over the past 3 years. The economy's performance in 1994 was a dramatic improvement over its performance at the beginning of the recovery from the 1990–91 recession, when output growth was fitful and anemic, and over its performance in 1992, when despite a strong gain in output, employment growth remained lackluster. Indeed, the combination of rapid job growth and low inflation gives 1994 one of the best macroeconomic performances on record (Chart 2–1).

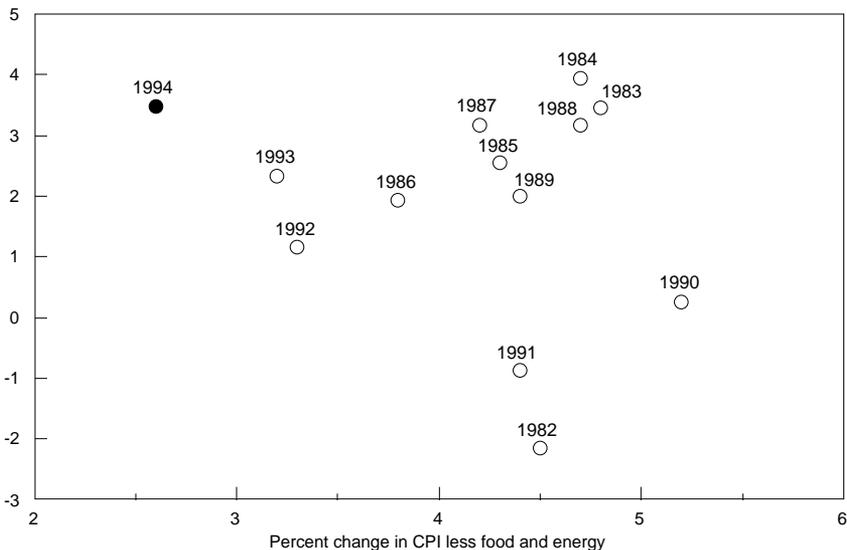
Initially, recovery from the 1990–91 recession was hampered by several special factors including large household and business debt burdens, high vacancy rates in commercial real estate, tight credit practices by many lenders, stagnant growth in much of the rest of the world, and declining Federal purchases, especially of military goods and services. As the recovery progressed, all but the last of these impediments diminished in importance, providing a more favorable environment for a pickup in economic growth and job creation. As described in last year's *Report*, the pace of expansion also improved as a result of a substantial decline in long-term interest rates in 1993 that accompanied first the anticipation and then the passage of the Administration's deficit reduction package in August of that year. Lower interest rates strengthened the interest-sensitive components of private spending, which in turn bolstered the rest of the economy.

The expansion of output and jobs that characterized the second half of 1993 persisted and strengthened in 1994, despite a shift toward tighter monetary and fiscal policies. In February 1994 the Federal Reserve began reducing the degree of monetary accommodation, and by the end of the year the resulting increase in interest

### Chart 2-1 Job Creation and Inflation

Compared with the experience of the 1980s and early 1990s, the economy in 1994 produced a large number of jobs with low inflation.

Millions of payroll jobs created



Note: Data represent changes from December to December.

Source: Department of Labor.

rates was substantial. Continued fiscal restraint was also significant, as evidenced by a decline of \$20 billion in the structural budget deficit (\$40 billion excluding special factors like deposit insurance) during fiscal 1994. Nevertheless, investment and consumption spending remained strong. High rates of inventory accumulation through most of the year signaled business confidence about future demand for output, as did business investment in equipment and structures, which rose 12.9 percent over the year. Households, too, showed substantial optimism about their income and employment prospects, as purchases of motor vehicles and existing homes as well as residential construction were at high levels despite rising interest rates. Overall, the economy grew at a faster rate than virtually all forecasters had projected at the start of 1994, and it did so despite interest rates that were much higher than forecast at that time.

The performance of inflation in 1994 was equally impressive, with most price measures near forecasts made at the beginning of the year, despite much stronger than expected levels of output and employment. These price developments reflected continued growth above trend in labor productivity and a surprisingly modest increase in hourly compensation. As discussed below, compensation increased less than would have been expected based on historical

experience, indicating possible changes in the dynamics of the labor market.

## CLOSING IN ON POTENTIAL OUTPUT

Over the last 2 years the economy has grown at an average annual rate of 3.6 percent, as aggregate demand rebounded from the 1990–91 recession and the sluggish growth that initially followed it. In part the economy's expansion was accomplished through an increase in the quantity and quality of the labor force and through net additions to the capital stock, the latter financed by both domestic saving and foreign borrowing. In part average labor productivity increased as a result of efficiency-enhancing technologies embedded in the capital stock. But to a significant extent, output was able to satisfy the strong growth of aggregate demand in 1994, because workers who had been unemployed were reemployed, and because capital that had been idle or underutilized was brought back on line or utilized more intensively. By the end of 1994, however, both labor and capital utilization rates were in ranges that suggested little remaining slack.

As the margin of underutilized capital and labor reserves diminishes, the economy's growth rate becomes increasingly constrained by the rates of growth of new entrants into the labor force, net additions to the capital stock, and the productivity of labor and capital owing to technological progress and to improvements in the quality of the labor force. Over the long run these factors determine the economy's growth rate of *potential output*. If, in the absence of slack in labor or product markets, growth in aggregate demand outstrips growth of the economy's potential output, pressures to increase wages and prices are likely to mount, increasing the probability of a rise in inflation. In turn, the buildup of wage and price pressures is likely to cause interest rates to rise, dampening aggregate demand growth and bringing it back in line with the growth of potential output.

The preponderance of the available empirical evidence suggests that the growth rate of potential output is currently around 2.5 percent. But the economy's strong performance in 1994 has caused some observers to speculate that the growth rate of potential output is now, or soon will be, higher. This hypothesis is examined in Chapter 3, which analyzes the major factors behind the economy's long-run growth potential. The remainder of this chapter analyzes the economy's macroeconomic performance in 1994, a year during which the margins of slack were sharply reduced. This chapter also examines the course of fiscal and monetary policy in 1994, looks at the surprising rise in long-term interest rates, and presents the Administration's economic forecast for the 1995–2000 period.

## OVERVIEW OF THE ECONOMY IN 1994

A sector-by-sector look at economic performance provides a clearer picture of the factors contributing to the continued strong expansion in 1994.

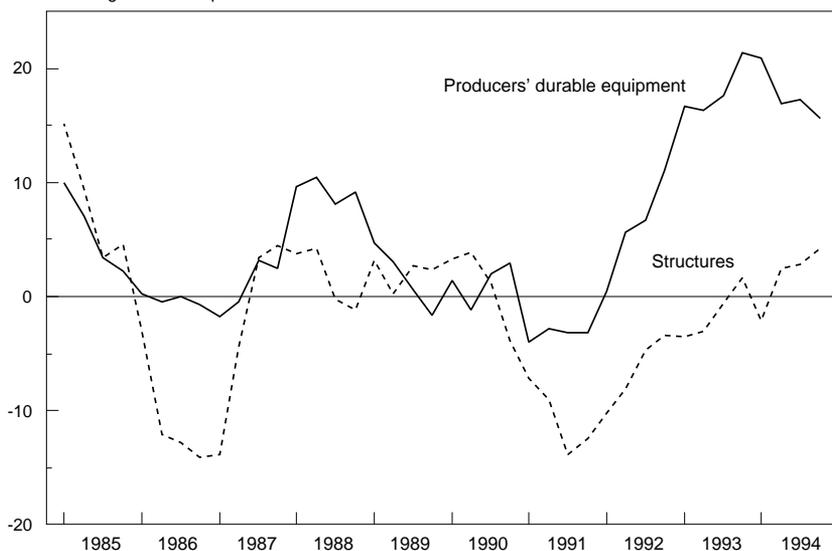
### BUSINESS FIXED INVESTMENT

A key factor driving the current expansion has been the rapid growth of business fixed investment, particularly spending on capital equipment (Chart 2-2). Between the trough of the 1990-91 recession and the end of 1994, investment in producers' durable equipment (PDE) increased at an average annual rate of 12.8 percent, while real GDP rose at an annual rate of 3.1 percent. (Table 2-1 summarizes the growth of GDP by component.)

Chart 2-2 **Growth in Real Nonresidential Investment**

Investment in business equipment has surged during the current expansion, but investment in nonresidential structures has just begun to increase.

Percent change from four quarters earlier



Source: Department of Commerce.

The extraordinary growth in PDE reflects the strong growth posted by spending on both computers and noncomputer equipment. Since the current expansion began, real investment in computers and peripheral equipment has increased at an average annual rate of 33.9 percent, while real spending on equipment other than computers has increased at an annual rate of about 8 percent. As a share of real GDP, noncomputer investment during 1994 was higher than at any time since separate records were first kept for computer and noncomputer investment spending. Over 1994, PDE

TABLE 2-1.— *GDP Scorecard for 1994*

[Real growth fourth quarter to fourth quarter]

Component	Percent change, except as noted	Comments
Consumer expenditures .....	3.4	Strong gains in employment as well as in households' willingness to increase levels of indebtedness accounted for broad-based increases in consumer spending.
Producers' durable equipment .....	15.6	The real success story underlying the strength of the current expansion.
Housing .....	1.9	Residential investment showed remarkable resilience in the face of rising interest rates throughout 1994, partly due to adjustable-rate mortgages.
Nonresidential structures .....	4.2	This sector rebounded after a surplus of commercial and industrial real estate led to no growth during the early part of the expansion.
Change in inventory investment <sup>1</sup> (billions of 1987 dollars) .....	\$37.1	A key to maintaining momentum in the economy during 1994.
Federal Government purchases .....	-6.2	Corporations were not the only organizations downsizing in the current expansion. Federal spending was a net drag on economic growth in 1994.
Exports of goods and services .....	10.2	A marked increase in exports reflected the pace of economic recoveries abroad.
Imports of goods and services .....	14.9	Strong consumption and investment demand showed up in imports during 1994. Computers and computer components accounted for much of the runup.

<sup>1</sup> Change between 1993 and 1994 in annual inventory investment.

Note.—Data are preliminary.

Source: Department of Commerce.

spending reflected especially robust investment in cars and trucks, total sales of which to business and households rose to 15 million units.

Whereas *gross* investment in PDE has been on a fairly steady upward trend for most of the postwar period, the trend in *net* investment (that is, net of depreciation) is less pronounced. Because the composition of PDE investment has shifted toward short-lived equipment, such as computers, a growing proportion of gross investment each year represents replacement of existing capital stock rather than a net increase in its overall level. The growing wedge between gross and net real PDE investment is illustrated by the fact that depreciation of PDE, relative to GDP, rose to roughly 6.5 percent in 1994 from about 5.8 percent a decade earlier. Gross investment has beneficial effects on the economy, contributing to income growth and facilitating the introduction of new technologies into the production process. But net investment is even more important to the Nation's economic well-being, because by adding to the amount of capital per worker, it raises labor productivity and the long-run earning potential of workers.

The other major component of business investment is spending on nonresidential structures, including office buildings, shopping malls, and retail stores. During 1994 the shadow cast over this sec-

tor of the economy by overbuilding during the 1980s began to fade, and nonresidential investment in structures increased 4.2 percent. The supply of bank credit for new construction appeared to be plentiful, and increased demand for office and industrial space was reflected in a fall in vacancy rates in some parts of the country. Contract awards for commercial and industrial construction increased during the second half of 1994, and sales prices for office, industrial, and other commercial structures posted solid increases during the year.

## CONSUMER SPENDING

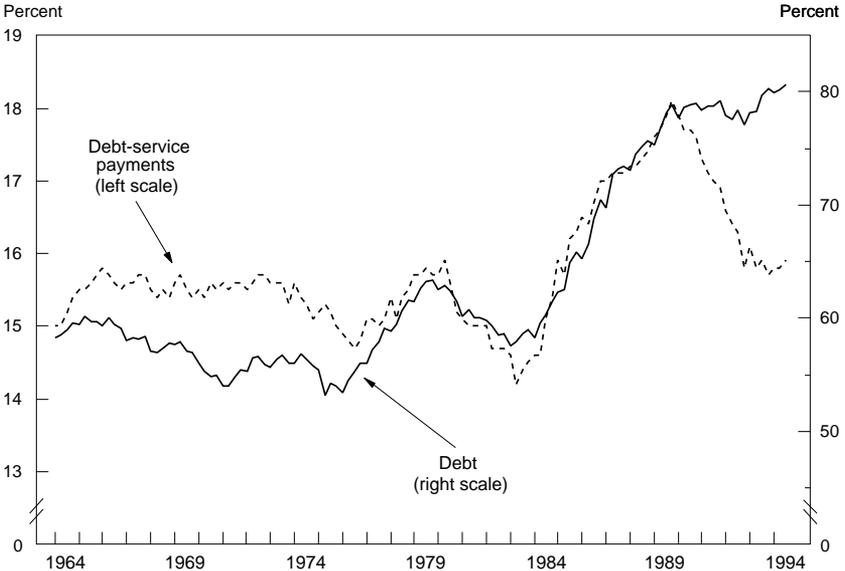
A favorable environment for consumer credit and strong gains in employment contributed to healthy increases in consumer spending and sentiment during 1994. Personal consumption spending advanced at a 3.4-percent pace during the year, led by an 8.1-percent rise in purchases of consumer durables. In turn, durable goods purchases were buoyed by double-digit growth in consumer expenditure on furniture and household equipment, especially video, audio, and computer equipment. Consumer sentiment returned to pre-recession levels early in the year and surged to a 5-year high at the end.

Households increased their indebtedness in 1994, as the ratio of debt to disposable personal income reached a record 81 percent (Chart 2-3). Undoubtedly, households were reacting in part to the fact that the cost of borrowing had declined dramatically during 1993 and remained low throughout much of 1994. Growth of consumer credit may also have been spurred by the proliferation of credit card programs that offer rewards to cardholders—such as direct rebates on purchases or frequent-flyer miles—based on amounts charged. Nonetheless, as in 1993, Americans devoted the smallest fraction of their disposable income to scheduled payments on principal and interest since 1984. The decline represented a substantial windfall for debtor households: had the debt-service burden remained at its 1989 peak, the average American household would have paid about \$965 more in principal and interest during 1994. The reduction in the debt-service burden, which primarily reflected lower financing costs on mortgages, freed up income, fueling part of the increase in household discretionary spending.

An increase in the personal saving rate occurred toward the end of the year, with the rate rising to 4.6 percent in the fourth quarter from 3.6 percent in the first quarter. In part this rise reflected a likely worsening in the ratio of net worth to income, as household debt burdens rose relative to income, while household assets—such as corporate equity—declined slightly relative to income.

Chart 2-3 **Consumer Debt and Debt-Service Payments**

Despite an increase in the ratio of debt to disposable income, debt-service payments declined relative to income.



Sources: Department of Commerce and Board of Governors of the Federal Reserve System.

## INVENTORIES

The sustained pace of inventory accumulation during 1994 was in marked contrast to the early stages of the recovery, when businesses refrained from rebuilding inventories out of concern that the recovery might lose steam. A hefty accumulation of inventory stocks occurred in the second, third, and fourth quarters, particularly in the wholesale and retail trade sectors. Although it is impossible to know with certainty to what extent the accumulation was intended, sales and shipments were also robust, so that there was little evidence of an inventory overhang that would warrant significant production cutbacks over the near term. Instead, the pace of inventory accumulation in the trade sector suggests that business expected continued growth in demand for its production. Inventory accumulation was modest in the manufacturing sector, and movement in the manufacturing inventory-to-sales ratio was dominated by the strong downward trend seen the past several years.

## RESIDENTIAL INVESTMENT

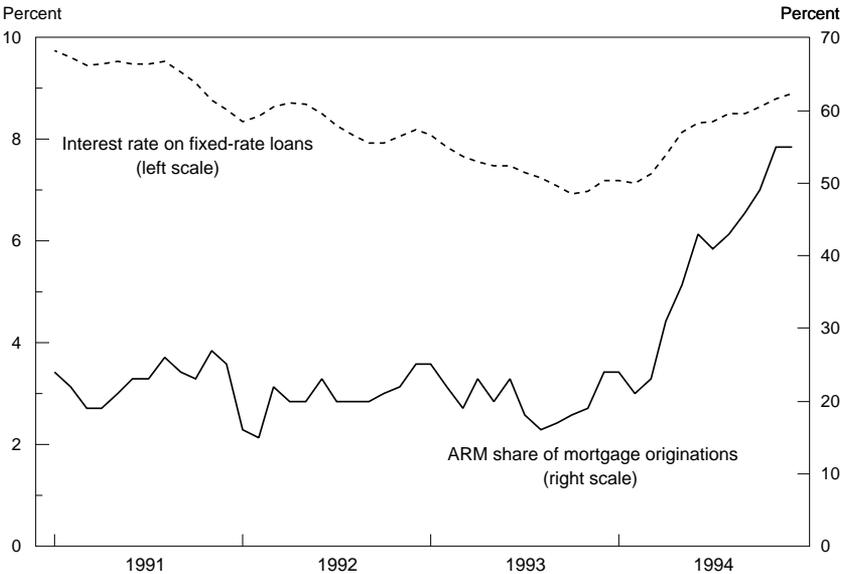
Residential fixed investment was buoyed throughout 1994 by growth in incomes and employment. This traditionally interest-sensitive sector of the economy showed remarkable resilience in the face of rising interest rates. Housing starts totaled 1.5 million

units, their highest level since 1988, with single-family home starts posting their highest annual total since 1978. Although a slowdown in residential investment took hold during the second half of the year as real investment dropped at an annual rate of 4.3 percent, average 1994 residential investment was still over 8 percent greater than the average for 1993. Sales of existing single-family homes, at just under 4 million, posted the highest resale total since 1978.

One factor that sustained the strength in housing in 1994 was the increased reliance on adjustable-rate mortgages (ARMs) in financing home purchases. During the summer of 1993 the ARM share of mortgage originations was only about 17 percent—near the historic low for this series. By November 1994, however, more than half of all mortgage originations were ARMs—the highest proportion in more than 5 years. Not only were many ARMs priced with a first-year discount, but they also allowed borrowers to structure their payments in a variety of ways; for example, some ARMs offered fixed rates for the first 7 or 10 years. The pricing of ARMs mitigated the initial cash crunch facing many home buyers and meant that fewer families were priced out of the market as interest rates rose (Chart 2-4).

**Chart 2-4 Fixed-Rate Mortgage Interest Rates and the Share of ARMs**

Over the past year, more home buyers turned to adjustable-rate mortgages (ARMs) as rates on fixed-rate mortgages rose.



Source: Federal Housing Finance Board.

Construction of multifamily units gradually picked up following the overbuilding of the 1980s. The willingness to build new units

was boosted by the increased availability of credit for such construction over the course of the year. During 1994, multifamily housing starts rose by 59 percent relative to 1993.

## EMPLOYMENT AND PRODUCTIVITY

The strength of the expansion in 1994 was accompanied by a rapid pace of job creation. According to current estimates the economy generated an average of 290,000 new payroll jobs per month, for a total of 3.5 million jobs, more than 90 percent of which were in the private sector. An early analysis of forthcoming revisions to estimates of payroll employment indicates that the job gains in 1993 and 1994 may prove to have been even stronger. For the 12 months ending in March 1994, the Bureau of Labor Statistics (BLS) estimates that as many as 760,000 additional jobs may have been created. When the revised data are released next summer, it is expected that the job gains since the Administration took office will have exceeded 6 million.

The employment gains of 1994 were spread widely throughout the economy (Table 2-2). Among goods-producing industries, construction employment posted its largest annual gain in a decade, while manufacturing employment recorded its largest increase since 1987. However, almost 85 percent of the advance in payroll employment was concentrated in the services sector, with 20.3 percent originating in the business services category (temporary agencies, building maintenance, and the like) and another 7.3 percent in the health services industry. Employment of Federal workers declined by 46,000.

TABLE 2-2.— *Growth in Nonagricultural Payroll Employment*

Sector	Employment in December 1994 <sup>1</sup> (thousands of persons)	Change since December 1993 <sup>1</sup>	
		Thousands of persons	As percent of total change
Total nonagricultural employment .....	115,864	3,490	100.0
Goods-producing industries <sup>2</sup> .....	23,779	553	15.8
Construction .....	4,956	298	8.5
Manufacturing .....	18,226	277	7.9
Durable goods .....	10,419	250	7.2
Services-producing industries <sup>2</sup> .....	92,085	2,937	84.2
Retail trade .....	21,297	811	23.2
Business services .....	6,817	710	20.3
Health services .....	9,153	256	7.3
Government .....	19,491	252	7.2
Federal .....	2,872	-46	-1.3
State and local .....	16,619	298	8.5

<sup>1</sup> Preliminary.

<sup>2</sup> Includes industries not shown separately.

Note.—Data are not seasonally adjusted.

Source: Department of Labor.

Although job creation has been exceedingly strong during the past 2 years, some analysts have expressed concern about the qual-

ity of the jobs created. In particular, it has been noted that, during the late 1980s and the early part of this decade, job growth in the traditionally high-wage manufacturing sector lagged increasingly behind gains in the relatively low-paying services sector. Less frequently cited, however, is the fact that recent gains in employment, although concentrated in relatively low-wage industries, have at the same time favored high-wage occupations.

For example, according to BLS, managerial and professional occupations represented 26.5 percent of total employment in 1992. In 1993 this share rose to 27.1 percent. Although the data for 1994 are not directly comparable because of the introduction of a new survey of household unemployment, the share of total employment accounted for by managerial and professional occupations last year rose to 27.5 percent. Managerial and professional jobs paid a median wage for full-time employees of \$680 per week—some 47 percent above the median wage of all full-time workers.

One characteristic of recent job growth that warrants concern has been the increase in the share of new jobs accounted for by temporary jobs. Employment at so-called help supply services (the best available measure of temporary employment) has accounted for 13.8 percent of all new jobs created during the current expansion. By comparison, over the 1982–90 period, only 4.4 percent of total growth in employment was in the help supply services category.

With the sharp job gains in 1994, the civilian unemployment rate fell by more than 1 percentage point, from 6.7 percent in January to 5.4 percent in December. Despite the fact that the new survey method is likely to have raised the measured unemployment rate, December's rate was the lowest since 1990 (Box 2–1). Nevertheless, over the current expansion, the average duration of unemployment has increased, and the share of unemployed workers reporting permanent job losses has risen.

Not only were more people working in 1994, but they were working longer hours. In the manufacturing sector, employment posted its first annual increase since 1988, and both the factory workweek and manufacturing overtime hours increased to postwar records. Labor productivity in the nonfarm business sector has also been strong: since the trough of the recession in 1991, output per hour in the nonfarm business sector has risen at an annual rate of 2.1 percent, well above most estimates of its long-run trend. Because productivity generally grows at above-trend rates during a cyclical rebound, it would be premature to conclude that there has been an increase in the long-run trend in productivity growth. Chapter 3 provides a more detailed discussion of the factors affecting long-run productivity growth.

### **Box 2-1.—The Redesign of the Current Population Survey**

The Bureau of Labor Statistics' Current Population Survey, a monthly survey of households, is a major source of information about the U.S. labor market. The monthly unemployment rate statistics are based on this survey. In January 1994 a major redesign of the survey was implemented to give a more accurate picture of the work force, taking into account changes in the patterns of employment by industry and changes in the labor force participation of women. BLS currently estimates that the effect of the new survey is to raise the measured aggregate unemployment rate by 0.2 percentage point relative to the old survey.

## **INCOMES AND PROFITS**

The gains in employment during 1994 were reflected in strong aggregate income growth. Real disposable income increased 4.3 percent over the year. Nonetheless, the gain in real compensation per hour remained modest. Hourly compensation, as measured by the employment cost index, increased 3.0 percent, barely outpacing the 2.7-percent increase in CPI inflation.

Based on a statistical relationship between the unemployment rate and the growth rate of hourly compensation, actual growth in compensation (with the compensation measure taken from the national income and product accounts, or NIPA) was lower than would have been expected. The same was true in 1993. Statistical relationships are meant to explain only average historical experience, and their predictions can err substantially on a year-by-year basis. Nevertheless, the shortfall in actual relative to predicted growth in hourly compensation averaged 1.4 percent in the 2 years—a shortfall that by its size and persistence could suggest some substantial changes in the dynamic behavior of the labor market.

The increase in corporate profits in 1994 was impressive. Although the January 1994 earthquake in Northridge, California, depressed profits (so that first-quarter profits fell by 18 percent at an annual rate), they rebounded quickly. Despite the earthquake-related drop, corporate profits increased at an annual rate of 5.6 percent over the first three quarters of 1994.

## **INFLATION**

Some observers expressed concerns during 1994 that the strong gains in employment would translate into upward pressure on labor costs and prices by the end of the year. Indeed, the prices of some highly visible commodities, including coffee, cotton, and basic

metals, did rise by significant amounts during the year. In addition, surveys of industrial prices by the National Association of Purchasing Managers and the Federal Reserve Bank of Philadelphia indicated that prices in the industrial sector were accelerating. Although increases in commodity prices, particularly among industrial goods, made for some disturbing headlines, rising commodity prices are a normal phenomenon during a cyclical rebound in the economy and do not typically lead to a noticeable increase in broader measures of inflation. However, with capacity tight in many industries, there was concern that commodity price increases would spill over into increases in other goods. Moreover, for the first time in 4 years, import prices began edging up more rapidly than overall inflation.

Despite the episodes of price acceleration for some commodities, and despite real GDP growth that sharply reduced slack in labor and capital markets, broad measures of inflation remained stable throughout the year (Table 2-3). Inflation ended the year about in line with the consensus forecast made at the beginning of the year. Core CPI and PPI inflation rates (measures that exclude volatile food and energy components) were lower during the second half of 1994 than during the first half of the year. Core CPI inflation was just 2.6 percent last year—the lowest rate since 1965 (Chart 2-5). (Box 2-2 Contains a discussion of problems in the CPI as a measure of changes in the cost of living.) A major source of the restraint in inflation was modest growth in employee compensation accompanied by strong growth in labor productivity.

## REGIONAL DEVELOPMENTS

The ongoing effects of the national economic expansion were felt in all major regions of the country during 1994. Although the pace of the expansion was uneven across the country, all major regions (that is, all nine Census divisions) enjoyed stable employment or outright employment growth, steady or declining unemployment rates, and real growth in income and retail sales.

In 1994 the Midwest and South continued along the moderate-to-strong growth path established over the preceding 2 years, with payroll employment rising 2 to 3 percent, unemployment rates falling steadily, and income rising more than 6 percent. In the Northern Plains States the unemployment rate fell below 4 percent—its lowest level in 15 years. Parts of the Northeast also grew strongly. In New England, employment rose nearly 2 percent in 1994, and the unemployment rate dropped to below the national average. The Middle Atlantic region displayed somewhat weaker growth but nevertheless generated increased employment, with the region's unemployment rate falling to 5.4 percent in December (Chart 2-6).

TABLE 2-3.— Measures of Inflation

Measure	1993	1994	1994 IV (annual rate)
	Percent change		
GDP fixed-weight price index .....	2.8	<sup>1</sup> 2.9	<sup>1</sup> 2.6
Non-oil import prices .....	1.5	3.9	4.6
CPI-U:			
All items .....	2.7	2.7	2.2
All items less food and energy .....	3.2	2.6	2.0
Medical care .....	5.4	4.9	6.1
PPI:			
Finished goods .....	.2	1.7	1.0
Finished goods less food and energy .....	.4	1.6	-.6
Intermediate materials less food and energy .....	1.6	5.1	9.0
Crude materials .....	.1	-1.1	2.8
Employment cost index: <sup>2</sup>			
Total compensation .....	3.5	3.0	2.6
Wages and salaries .....	3.1	2.8	2.4
Benefits .....	4.6	3.4	2.8

<sup>1</sup> Preliminary.

<sup>2</sup> For civilian workers.

Note.—Inflation as measured by the GDP price index is computed from fourth-quarter to fourth-quarter for 1993 and 1994, and from 1994 III to 1994 IV. All other measures are calculated from December to December for 1993 and 1994, and from September to December for 1994 IV.

Sources: Department of Commerce and Department of Labor.

**Chart 2-5 Consumer Prices Less Food and Energy**

In 1994 consumer prices less food and energy increased at the lowest annual rate since 1965.

Percent change, December to December



Source: Department of Labor.

### **Box 2-2.—Problems in Measuring Cost-of-Living Increases**

It is impossible in practice to calculate an index number that accurately reflects changes in the cost of living for American families, because no two families are alike and because the quality and the availability of goods and services change. Private companies and public policymakers, needing an objective measure of consumer inflation but aware of the limitations to which all are subject, have used what is widely regarded as the best available index, the consumer price index (CPI).

Researchers at the Bureau of Labor Statistics, which prepares the CPI, have identified several problems with the index, and the agency has moved, where possible, to address them. The most important technical problems remaining are *substitution bias* and the treatment of *quality changes and new products*. The net effect of these and other problems is probably to make the CPI overstate actual cost-of-living increases, but this is controversial and estimates vary widely.

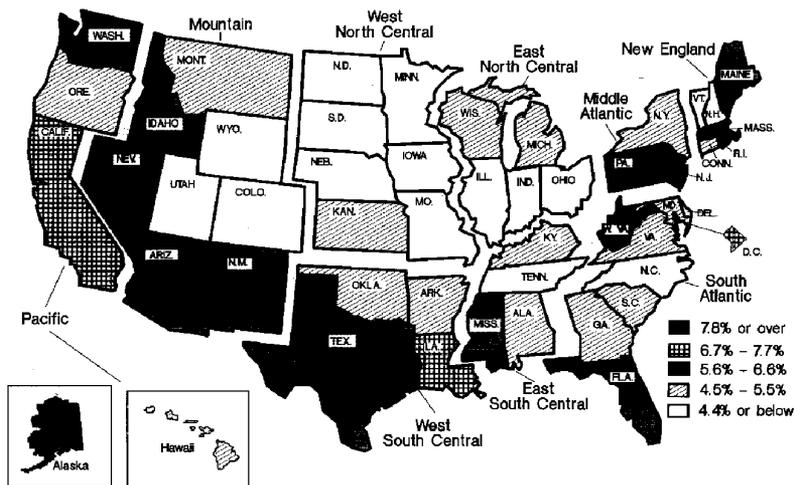
Substitution bias arises because consumers regularly shift the composition of their purchases, substituting goods that have become relatively cheaper for goods that have become relatively more expensive. The CPI, which measures the price changes of a mostly fixed basket of goods, fails to capture such shifts. This is inherent in the nature of the CPI, which was designed originally to measure the average price increase for a fixed basket of goods and services, not to capture changing consumption patterns. Whenever the market basket used to calculate the CPI is updated (usually every 10 years), substitution bias is mitigated, only to worsen again over time as consumer choices diverge from the new market basket. More frequent changes in the market basket would reduce the bias but would require additional resources as well as research to determine how frequently the updates should occur.

The quality of the goods and services purchased by consumers also changes over time. In principle, a change in price that reflects a change in quality is not a change in the cost of living. The CPI cannot, however, adjust the prices of all the products in its market basket for changes in their quality: it is simply impossible to measure the extent of ongoing quality changes in the myriad products consumers purchase. Experts disagree about how well the CPI in practice has accounted for quality changes and how this accounting might best be improved.

**Chart 2-6 Unemployment Rates by State, December 1994**

Though gains in employment were spread widely across the Nation during 1994, state unemployment rates still vary greatly.

(U.S. average = 5.4 percent)



Source: Department of Labor.

The West was a region of sharp contrasts. The Middle Rocky Mountain region was the star performer of 1994. Payroll employment rose more than 4 percent and personal income jumped more than 8 percent. Similarly, the Mountain region led the Nation in retail sales growth. Although the unemployment rate fell less sharply there than in other regions in 1994, by September the rate was less than 5 percent.

In contrast, the Pacific region's performance continued to lag well behind its strong growth of the 1980s, largely reflecting the subpar performance of California. Payroll employment growth in the Pacific region, although positive, trailed that of other regions; even by the end of the year the level of employment had not yet regained its prerecession peak. California's unemployment rate remained far above the national average throughout the year, and the pace of job creation there was much slower than in the rest of the country.

Much of the softness of the California economy reflected weakness in the southern part of the State. The loss of jobs associated with defense downsizing and the collapse of the Los Angeles area real estate market over the past few years has been well documented. Although the number of jobs in the aerospace industry continued to decline, there is now evidence that other sectors of Southern California's economy are picking up and that the real es-

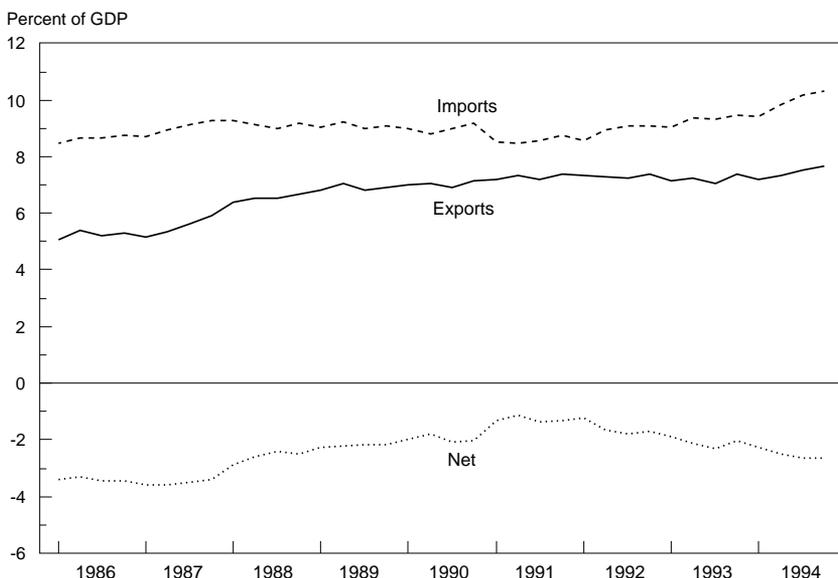
tate market has finally stabilized. Moreover, California should benefit from the growth in incomes elsewhere in the Nation as it translates into increasing orders for California producers who “export” their goods and services to the rest of the country.

## INTERNATIONAL DEVELOPMENTS

During 1994, America’s merchandise trade deficit (the excess of merchandise imports over exports) increased to 2.7 percent of GDP, reaching a total deficit of \$169 billion (Chart 2-7). More rapid growth at home than in the rest of the world was a major factor responsible for the deterioration in the Nation’s external position.

Chart 2-7 **Merchandise Exports and Imports**

Since 1991 the deficit on merchandise trade has been widening.



Note: Trade data are on a balance-of-payments basis.

Sources: Council of Economic Advisers and Department of Commerce.

Real exports of goods and services expanded briskly, rising 10.2 percent in 1994, and the United States maintained its position as the world’s largest exporter. The strengthening recovery in foreign industrial countries, continued robust growth in developing countries, the decline in the dollar’s exchange value, the implementation of the North American Free Trade Agreement, and the ongoing improvement in America’s underlying competitiveness all helped to boost export sales to record highs. But the rise in exports was outstripped by the increase in imports that accompanied strong domestic investment and consumption demand. The performance of the trade deficit in 1994 was consistent with estimates indicating

that, for the United States, the response of imports to a change in domestic income is generally greater than the response of exports to a similar change in foreign income.

### *America as an International Debtor*

The United States remains critically dependent on foreign capital inflows to finance its sizable external deficit. Since the early 1980s, when America's claims on foreigners exceeded foreigners' claims on the United States, persistent current account deficits and the counterpart foreign acquisition of U.S. assets have led to a buildup of U.S. international indebtedness. By the late 1980s the value of U.S. assets owned by foreigners was larger than the value of foreign assets owned by American residents, and the gap has continued to grow since then (Table 2-4). Total net U.S. international debt exceeded \$500 billion in 1993; the figure is \$556 billion if direct investment holdings are valued at current cost, and \$508 billion if those holdings are evaluated at market value. As a share of nominal income, the burden of net international debt has risen to between 8 and 9 percent of GDP. Regardless of whether it is measured in billions of dollars or as a share of income, however, the debt owed to foreigners remains high.

TABLE 2-4.— *U.S. Net International Investment Position*

End of year	Billions of dollars		Percent of GDP	
	At current cost	At market value	At current cost	At market value
1982 .....	379	265	11.9	8.3
1987 .....	-23	58	-5	1.2
1990 .....	-251	-224	-4.5	-4.0
1993 .....	-556	-508	-8.6	-7.8

Source: Department of Commerce.

Yet despite its position as an international debtor, the United States until very recently registered a positive balance on net investment income. Higher rates of return on U.S. holdings abroad than on foreign holdings of U.S. assets reflected in part low rates of return on foreign holdings, most notably on investments in real estate. During 1993, however, the balance on investment income switched from positive to negative. Net investment payments now add to our current account deficit, increasing our financing needs and our dependence on foreign capital. Without a sizable reduction in the net debt owed to foreigners, either through an increase in U.S. holdings of foreign assets or through a reduction in U.S. liabilities to foreigners, net investment income payments are likely to remain in deficit through the end of the decade and beyond. Over time, net investment income payments to foreigners will constitute a larger and larger share of our current account position.

## Exchange Rates

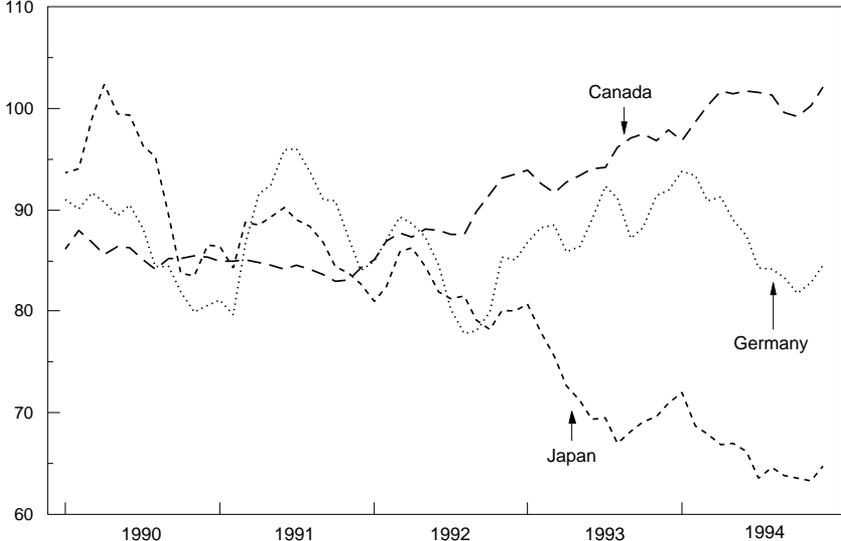
The value of the dollar declined about 8 percent last year when measured on a trade-weighted basis against the currencies of the nine major foreign industrial countries. However, the nominal value of the trade-weighted dollar has been broadly trendless since early 1987, following the Louvre Accord among the six major industrialized countries to stabilize exchange rates.

The dollar moved more substantially against some individual currencies than is reflected in the weighted-average rate (Chart 2-8). Between the end of 1993 and July 1994, the dollar declined some 12 percent against the Japanese yen, bringing the cumulative decline vis-a-vis the yen since the end of 1992 to 21 percent. After midsummer the dollar's value in terms of the yen was more stable, and the dollar ended the year trading at 99.6 yen. Movements in the dollar-yen rate reflected to some extent trade tensions between Japan and the United States (see Chapter 6). In addition, the rising current account deficit in the United States and surplus in Japan may have increased downward pressure on the dollar and upward pressure on the yen. Although both the American and the Japanese current account imbalances have been rising in recent years, external imbalance is not new for either country; thus it remains a question how much this factor influenced the behavior of financial markets in 1994.

Chart 2-8 **Measures of the Dollar's Value**

The dollar fell against the currencies of Japan and Germany in 1994 but appreciated against the Canadian dollar.

Index, January 1987=100



Note: Data represent units of foreign currency per U.S. dollar.  
Source: Board of Governors of the Federal Reserve System.

The dollar also weakened significantly against some European currencies, most notably vis-a-vis the German mark and the currencies that are closely tied to it through the European Exchange Rate Mechanism, such as the French franc, the Belgian franc, and the Dutch guilder. Over the course of the year the dollar fell 11 percent against the mark. At the beginning of 1994 market participants expected some rise in the dollar's value relative to the mark, as monetary policy in the United States was widely expected to grow tighter and that in Germany to become easier over the year. The strength of the German recovery relative to expectations may have accounted for some of the appreciation of the mark against the dollar.

Against the currency of our largest export market—the Canadian dollar—the U.S. dollar appreciated 5 percent last year. Since mid-1991 the Canadian dollar has lost 19 percent of its value relative to the U.S. dollar. Major contributors to the slide in the Canadian dollar have been rising government debt and political uncertainty: the ratio of Canadian Government debt to GDP hit 95 percent in 1994 (up from less than 70 percent in 1989), and the increasing strength of the Quebec separatist movement has gained widespread attention.

At the end of 1994 the Mexican peso declined sharply—by some 31 percent—vis-a-vis the U.S. dollar. Details of the peso's fall and efforts by the Administration to address Mexico's resulting liquidity crisis are discussed in Chapter 6.

Other factors are likely to have influenced the overall depreciation of the dollar as well. First, the perception by at least some market participants that the Federal Reserve was slow to tighten the stance of monetary policy may have led investors to sell dollar assets. In addition, the widely discussed move by institutional investors out of dollar assets and into emerging-market funds in order to diversify portfolios no doubt contributed to the dollar's weakness.

## FISCAL POLICY IN 1994 AND BEYOND

As noted in Chapter 1, the Administration's 1994–98 budget package, embodied in the Omnibus Budget Reconciliation Act of 1993 (OBRA93), resulted in a dramatic reduction in the Federal deficit in 1994 and markedly improved the deficit outlook for the remainder of this decade. The fiscal 1994 deficit was \$52 billion lower than the fiscal 1993 deficit, and \$72 billion lower if special factors, such as net receipts from sales of assets acquired from failed savings and loans, are excluded. Over the entire 1994–98 period, the Administration estimates that accumulated deficits will fall by some \$616 billion relative to the pre-OBRA93 baseline—

roughly \$500 billion from OBRA93's spending cuts and revenue increases, and the remainder from technical revisions as well as improved economic conditions, the latter in part due to the budget package. The Administration's 1996 budget package preserves OBRA93's deficit reduction measures and adds another \$81 billion in budgetary savings through 2000, even as it provides full funding for the Administration's proposed middle-class tax cuts, which will total \$63 billion between 1996 and 2000.

As a result of the Administration's deficit reduction measures, along with projected slowdowns in medicare and medicaid spending, the Federal deficit will continue to decline as a share of GDP, averaging about 2.5 percent during the 1994-2000 period, nearly 2 percentage points less than the 4.4-percent average for the 1982-93 period.

Because the size of the budget deficit depends not just on policy decisions but also on the state of the economy, economists prefer to use the so-called structural or cyclically corrected deficit to assess the stance and direction of fiscal policy. The structural deficit, defined as the deficit that would result if the economy were operating at or near its potential output level, is designed to capture the effects of policy and exclude the effects of the business cycle on the size of the deficit.

Chart 2-9 shows the Administration's estimates of the structural deficit relative to the economy's potential output. The chart reveals that this ratio rose dramatically during the 1980s, reaching a peak of 5 percent in 1986 and averaging 3.9 percent between 1982 and 1993. Between 1993 and 1994 the stance of fiscal policy became contractionary in response to OBRA93's implementation, and this ratio fell from 3.3 percent to 2.8 percent. The decline in the ratio of the structural deficit to potential GDP is even more impressive when special factors such as deposit insurance are excluded: from 3.7 percent in 1993 to 2.9 percent in 1994. Moreover, based on the Administration's current economic forecast, projected slowdowns in the growth of medicare and medicaid spending, and the Administration's deficit reduction policies, the structural deficit is projected to decline throughout the remainder of the decade as a share of potential GDP and to average 2.5 percent for the entire 1994-2000 period.

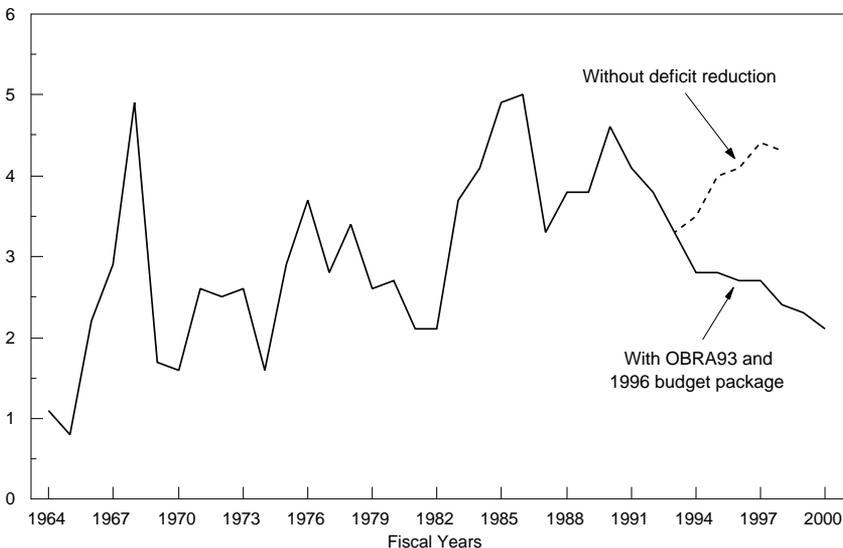
## THE BUDGET OUTLOOK OVER THE LONGER RUN

Current long-run projections suggest that if the Administration's current policy proposals are enacted and the anticipated slowdowns in medicare and medicaid spending persist, the improvement in the deficit should be preserved for at least the next 10 years. Beyond 2000 the deficit is anticipated to remain roughly constant. Relative to GDP, however, the deficit is likely to continue its gradual de-

### Chart 2-9 Structural Budget Deficits

Policy changes enacted in 1993 arrested the upward trend of the deficit, and the President's proposed budget for fiscal 1996 will achieve even more deficit reduction.

Percent of potential GDP



Note: Structural deficit excludes cyclical revenues and outlays.

Sources: Council of Economic Advisers and Office of Management and Budget.

cline, falling below 2 percent early in the next century. Over the longer run, changing demographics will put upward pressure on the deficit as the baby-boom generation, born during the first two decades after World War II, begins to retire. The aging of the population will contribute to rising expenditures for both Social Security and Federal medical programs, because medicare is primarily a program for those over the age of 65, and medicaid is increasingly a program for elderly people needing nursing home care.

During the 1996–2000 period, spending for both medicare and medicaid is projected to increase at a slower rate than in recent years. This projected slowdown is the result of several factors including lower projected medical cost inflation, slower projected growth of the medicaid beneficiary population, and increased scrutiny of State claims for certain Federal medicaid matching payments. Despite these changes, however, the projected growth rates for both medicare and medicaid remain very high. Medicare benefits are projected to grow at an average annual rate of 9.1 percent, and medicaid benefits at an average annual rate of 9.3 percent. Both of these growth rates are nearly three times the projected general inflation rate of 3.2 percent, and at these rates both medicare and medicaid spending will double every 8 years. As a result, by 2000 spending on these programs will account for one-fifth of total Federal outlays, rising from 3.4 percent of GDP in fiscal 1994

to 4.1 percent by 2000. By 2005 these health care programs will amount to 4.9 percent of GDP.

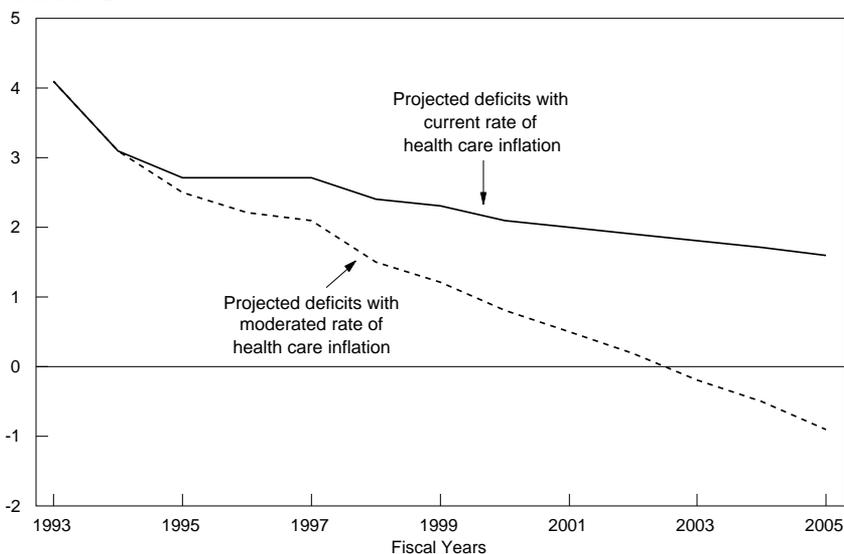
The number of people participating in the Federal health programs is expected to increase as the medicaid population grows at an anticipated 3.8-percent annual rate on average between now and 2000. However, this expansion makes up a relatively small part of the increase in total Federal spending for medicare and medicaid—it could be accommodated without undue pressure on the deficit. The main reason why the fiscal impact of these programs is such a problem is that health care spending per beneficiary keeps rising faster than inflation—indeed faster than inflation plus the general increase in real per capita GDP.

Chart 2-10 illustrates the impact of rising medicaid and medicare spending on the deficit. If spending on these programs grew at the rate of increase of the beneficiary population, but spending per beneficiary rose in line with per capita nominal GDP, the Federal budget would be balanced by the year 2003. Obviously it is unrealistic to anticipate such a sharp change in health care spending trends given the long history of rapid growth, but this fact helps pinpoint the real problem behind the continuing large Federal deficit and confirms the need for genuine health care reform.

Chart 2-10 **Health Care Inflation and the Federal Deficit**

If per beneficiary costs of medicare and medicaid rose only at the rate of growth of nominal per capita output, the Federal deficit would vanish by the year 2003.

Percent of GDP



Source: Office of Management and Budget.

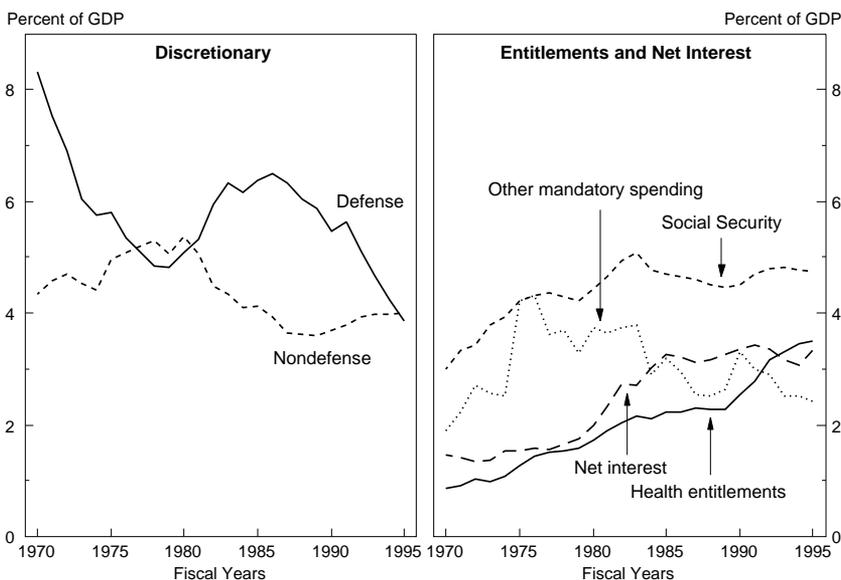
As noted in Chapter 1, the Administration remains committed to such reform, to provide health security to all Americans and contain health care costs for families, businesses, and Federal, State, and local governments. Because of the linkages and interactions between public health care programs and the private health care market, attempts to stem the growth of Federal programs by such mechanisms as spending caps will not solve the underlying problem of costs. Instead, the imposition of caps will shift costs to the private sector and threaten the availability and quality of services for the medicare and medicaid populations.

## THE CHANGING COMPOSITION OF FEDERAL SPENDING

One of the underappreciated aspects of fiscal policy is the change in fiscal spending priorities that has emerged during the last three decades. Chart 2-11 presents the major categories of Federal spending over this period. The chart indicates that—contrary to conventional belief—the long-run growth of nondefense discretionary spending has been considerably slower than GDP growth for much of this period, and the ratio of nondefense discretionary spending to GDP is projected to remain well below the peak realized in 1980.

Chart 2-11 **Composition of Federal Spending**

Relative to GDP, discretionary spending has fallen during the past two decades, while entitlement spending and interest on the debt have grown.



Source: Office of Management and Budget.

To some extent, the diminishing claim on economic output of nondefense discretionary spending reflects competition between defense and nondefense spending. But to a larger extent the contraction of nondefense discretionary spending relative to GDP reflects the pressure on the budget of rapid growth in both net interest payments on the debt and entitlement spending. Over the early 1980s the buildup in Federal debt was particularly large. As a result, 1994 interest payments on the debt constituted 3.1 percent of GDP, compared with an average of 1.6 percent between 1970 and 1981.

The most dramatic feature in the changing expenditure mix is the growth of spending on entitlement programs, especially health care programs. Federal health care spending grew from an average of 1.3 percent of GDP over the 1970–81 period to close to 3.4 percent of GDP by 1993–94. Between 1970 and 1994, average annual growth in health care spending was about 1¾ times average annual growth in nominal GDP.

Chart 2–12 provides detail on the projected composition of Federal spending for fiscal 1995. The four largest components of Federal spending are Social Security, national defense, interest on the debt, and medicare, in that order. Together these categories account for about 65 percent of total Federal spending. Expenditures for medicare, the smallest of these four components, are over five times spending on food stamps, over eight times spending on international affairs, and over nine times spending on aid to families with dependent children.

## PRINCIPLES FOR EVALUATING ALTERNATE TAX PROPOSALS

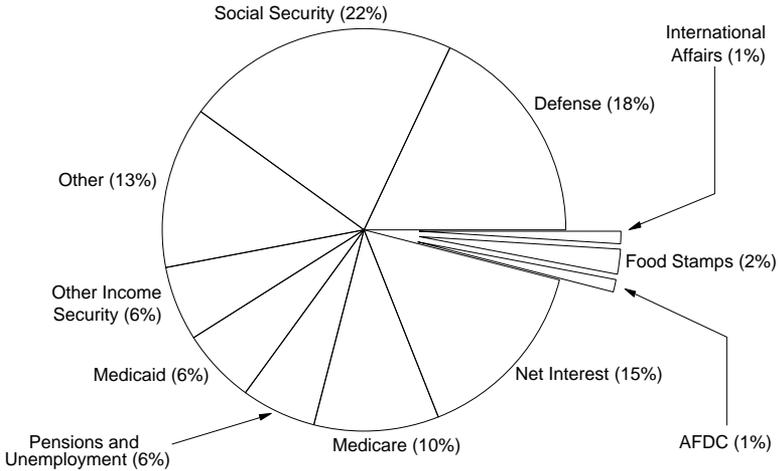
As already noted and described in Chapter 1, the Administration's 1996 budget proposal contains a package of tax cuts for middle-class Americans. These include a child-based tax credit, a tax deduction for postsecondary education and training expenses, and expanded availability of individual retirement accounts (IRAs). These initiatives are paid for primarily by discretionary spending cuts.

In its assessment of various tax proposals that are likely to be considered by the Congress during the coming year, the Administration will rely on four basic principles:

- Do the proposed changes in tax policy enhance long-run economic growth?
- Are they consistent with norms of economic efficiency?
- Are they fair?
- Are they fiscally responsible?

Chart 2-12 **Federal Outlays by Function, Fiscal 1995**

Social Security, defense, medicare, and net interest on the debt comprise 65 percent of Federal spending, dwarfing outlays on international affairs and social insurance programs.



Note: AFDC is aid to families with dependent children.  
Source: Office of Management and Budget.

Although each of these principles is important in its own right, any set of tax proposals should be evaluated in terms of how it measures up against all four.

The first of these principles focuses on the incentive properties of tax measures and takes a long-run view of their likely results. The Administration's proposed tax deduction for postsecondary education and training expenses, for example, is designed to strengthen individual incentives to invest in these activities, both of which have been demonstrated to offer good rates of return on average. Similarly, the Administration's proposed IRA expansion is intended to focus more attention on household saving. The goal of these tax proposals is to increase the economy's aggregate amounts of human and physical capital, thereby increasing incomes in the long run.

The second principle concentrates on economic efficiency by examining the distortions that proposed taxes might create in basic economic choices. In the early 1980s, for example, changes in tax policy produced a proliferation of tax shelter activity, with adverse consequences for both investors and the tax system. Another example of a proposal that is deeply flawed from an efficiency point of view is the "neutral cost recovery system" proposed in the House Republican Contract with America. This system offers, for certain types of assets, depreciation allowances that are indexed for infla-

tion and then increased by a factor of 3.5 percent per year. However, it does not index debt, so that businesses can deduct all of their interest expense rather than only that portion associated with the real interest rate. Thus it effectively shields businesses from taxation on many of their investments while permitting them to deduct fully the costs of debt to finance those investments. This would create a large economic distortion in investment choices both because it would result in a negative income tax on a significant fraction of total business investment and because it would treat different types of capital differently.

The third principle for evaluating tax proposals is fairness, an important dimension of which is vertical equity, or the distribution of the tax burden among families at different income levels. As noted earlier, about 87 percent of the benefits of the Administration's proposed tax cuts would go to families with annual incomes under \$100,000. In contrast, according to analyses by the Treasury Department, about 50 percent of the benefits of the tax cuts proposed in the Republican Contract would go to families with annual incomes over \$100,000—only 10 percent of all American families. The overall effect of the Contract's tax package would be to reduce substantially the progressivity of the Federal tax system. A second important dimension of fairness is horizontal equity—that is, providing similar treatment to taxpayers in similar economic situations. By further increasing the gap between the tax burdens on labor income and capital income, the capital gains rate reductions proposed in the Republican Contract fall short on this score as well.

Finally, whether a proposed tax reduction is desirable economic policy depends on whether it provides social benefits greater than its revenue cost. As already noted, the revenue losses resulting from the Administration's tax proposal are fully offset by specific spending cuts, allowing continued progress on deficit reduction through the end of the decade. Specific revenue offsets have not been offered for the substantial costs of the tax proposals in the Republican Contract; those costs have been estimated by the Treasury Department at \$205 billion between fiscal 1995 and fiscal 2000, and \$725 billion between fiscal 1995 and fiscal 2005.

Moreover, the Administration uses conventional accounting methods to "score" the impact of its tax proposals. In contrast, some members of the Congress have proposed using so-called dynamic scoring methods to evaluate the budgetary impact of their proposed tax reductions. For the reasons noted in Box 2-3, although such methods sound reasonable in theory, in practice they would pose grave risks, because they could easily be used to rationalize tax reductions that would sharply increase the deficit over time.

### **Box 2-3.—Scoring the Revenue Consequences of Tax and Expenditure Changes**

Current “static” budgeting techniques recognize and incorporate many kinds of behavioral responses to proposed changes in government policies. For example, if an increase in the tax on gasoline is being considered, budget analysts will estimate the likely reduction in gasoline purchases and adjust their revenue estimates. But current techniques also assume that these behavioral responses are not large enough to significantly affect the level of total output or its growth rate within the 5-year budget window.

Nearly all economists would agree that in principle policymakers should consider the effects of policy changes on the aggregate economy. But the consensus quickly falls apart when it comes to the details of how such “dynamic” scoring should be conducted. The lack of consensus reflects the fact that models of the macroeconomy are very complex, embodying myriad assumptions about the behavior of individuals and businesses. Even small differences in these assumptions can lead to different conclusions.

For example, different assumptions about the sensitivity of labor supply decisions to changes in income tax rates, and about the sensitivity of saving to changes in the after-tax rate of return, can lead to very different conclusions about the extent of revenue loss resulting from a reduction in the income tax rate or the capital gains tax rate. Unfortunately, existing empirical techniques make it impossible to determine which estimates are the best predictions of behavioral responses to tax rate changes with the degree of precision necessary for reliable dynamic analysis.

Although static scoring techniques rest on simplifying assumptions, budget decisions involving tens of billions of dollars are too important to leave to dynamic scoring techniques which are fraught with uncertainties and easily manipulated. It is not hard to imagine how dynamic scoring techniques could be used to justify generous tax cuts on the grounds that they would pay for themselves, when it is all too likely that they would cause a large increase in the deficit.

### *The Debate over Further Reduction in the Capital Gains Tax Rate*

One of the fiscal initiatives that is likely to be proposed and debated during the coming fiscal year is a further reduction in the tax rate on capital gains. Under current law, capital gains income

already receives a tax preference relative to other forms of income. This preference arises from several provisions. First, the statutory rate on capital gains is capped at 28 percent, compared with a 39.6-percent marginal rate on other forms of income for upper income households. Second, capital gains are taxed only when an asset is sold, not as the gain accrues. Third, the tax liability against an appreciated asset is forgiven when the owner of the asset dies. Fourth, the tax liability on the sale of a principal residence is deferred provided the seller purchases another house at least as expensive within 2 years. Finally, taxation on up to \$125,000 of the capital gain on the sale of a principal residence is forgiven if the owner is over the age of 55 (this exclusion may be taken only once in a taxpayer's lifetime). OBRA93 further expanded the tax preference for capital gains by exempting from tax one-half of all capital gains generated by equity investments held for at least 5 years in certain small businesses.

Arguments in favor of yet more generous treatment of capital gains are based largely on claims that a cut in the tax rate would spur saving and investment and would raise, rather than lower, government tax revenues, especially capital gains tax receipts. Although a reduction in capital gains tax rates would increase the after-tax rate of return on savings (for a given before-tax rate of return), the preponderance of the available empirical evidence suggests that private saving is not likely to increase much in response. Indeed, private saving (both from domestic sources and from an inflow of foreign capital) has historically been fairly insensitive to changes in the rate of return. In addition, as discussed below, government revenues from capital gains are likely to fall with a cut in the tax rate, unless there are feedback effects on the growth of the economy (for instance from channeling more, or redirecting existing, resources into new ventures) that are implausibly large. If total saving—the sum of private saving and government saving—did not increase, neither investment spending nor aggregate output would increase.

Can lower capital gains tax rates raise capital gains revenues even if they do not induce an increase in the economy's growth rate? In the short run, revenues could increase as lower tax rates caused asset holders to accelerate the sale of their assets. Especially if the tax cut is thought to be temporary, the incentive could be strong to realize the gain and pay the tax sooner rather than later. But such a shift in the timing of the tax would probably mean a reduction in total capital gains taxes paid on a given asset over the long run. Indeed, the acceleration in payment would occur precisely because asset owners view this as a tax-minimizing strategy.

In the long run, without an induced increase in economic growth, a cut in the capital gains tax rate could raise capital gains revenues only under the following circumstances. First, an increase in the differential between the tax rate on capital gains income and that on ordinary income might lead taxpayers to transform ordinary income into tax-preferred capital gains income, hence generating more capital gains revenue. Of course, aggregate income taxes inclusive of capital gains taxes would fall. Second, a reduction in the capital gains tax rate could induce a shift in investors' portfolios away from tax-exempt bonds or even housing into assets subject to capital gains taxes. Third, and most important, a reduction in the tax rate could encourage a decrease in the value of assets that are held until death in order to escape taxation. Whether the increase in the realization of capital gains that would otherwise escape taxation would be large enough to offset the decline in tax revenues from assets whose gains are generally taxed is an empirical question.

Although studies have found a wide range of responses, recent research suggests that capital gains realizations would rise over the long haul if tax rates were reduced, but not by enough to keep capital gains revenues from falling. In any case, eliminating the capital gains tax preference given to inherited assets is a more straightforward and certain way of eliminating the lock-in effect, and thus raising capital gains tax revenues, than a reduction in the capital gains tax rate itself.

Finally, income tax revenues other than on capital gains could increase if a reduction in the capital gains tax rate raised the turnover rate of assets subject to sales commissions that are either fixed or based on gross value rather than capital gain.

When judged by the four principles of long-run growth, economic efficiency, fairness, and likely effects on revenues and the deficit, the reduction in the capital gains tax rate proposed by the House Republican Contract with America—which calls for a 50-percent tax exclusion for all capital gains and, for certain assets, the taxation of only *real* capital gains (through the indexation for tax purposes of capital gains for inflation)—is problematic and ultimately ill-advised. For the reasons already noted, the direct effects of additional capital gains tax relief on private saving and investment—perhaps its only valid rationale—are likely to be small. The creation of a larger wedge between the rate of capital gains taxation and the rate of income taxation for higher income taxpayers is likely to encourage more-aggressive tax-sheltering activities. And a reduction in the capital gains tax rate that applied both retrospectively and prospectively would provide a substantial windfall to investments undertaken before the change in the tax code, which

does not serve the purpose of encouraging *new* saving and investment.

An across-the-board reduction in the capital gains tax rate also violates the principle of tax fairness. By providing different tax treatment to different classes of assets, the proposal would create an uneven playing field for investors. Moreover, according to available estimates, about 50 percent of the benefits of a uniform capital gains rate cut would go to the 1 percent of the population with the highest incomes, and over 75 percent of the benefits would accrue to the top 10 percent of the income distribution. Such a skewed distribution of benefits follows directly from the current distribution of wealth in the United States. According to the Survey of Consumer Finances, Americans in the top 1/2 percent of the net worth distribution owned 29.1 percent of aggregate net worth in 1989, while the bottom 90 percent owned only 30.7 percent. The share of the wealthiest 1/2 percent increased by 5 percentage points and that of the bottom 90 percent fell by 2.6 percentage points between 1983 and 1989.

Finally, a uniform and generous reduction in the capital gains tax rate is likely to be expensive in terms of forgone revenues. The Treasury estimates that the capital gains tax reduction currently proposed in the Contract with America would reduce tax receipts by about \$60 billion between fiscal 1995 and fiscal 2000 and by about \$183 billion between fiscal 1995 and fiscal 2005. These lost revenues would have to be offset by an equivalent amount of spending cuts (or increases in other revenues) to make the overall proposal deficit-neutral.

## MONETARY POLICY IN 1994

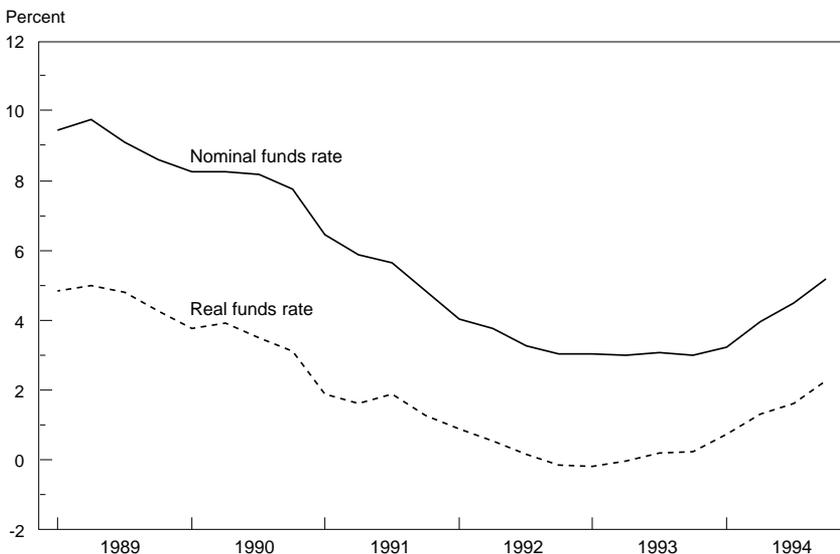
At the beginning of 1994 a growing number of observers began to express concern that continued economic growth at the pace experienced over the second half of 1993 would soon close the gap between actual and potential output, precipitating increases in wage and price inflation. This concern was heightened both by a jump in GDP growth at the end of 1993, to a rate in excess of 6 percent, and by the degree of underlying momentum the economy carried into 1994.

Acting to forestall inflation, the Federal Reserve raised the Federal funds rate (the rate on overnight interbank loans) by one quarter percentage point in early February 1994. Monetary policy was tightened further in five subsequent Fed policy actions over the course of the year, and by December 1994 the Federal funds rate stood 2.5 percentage points higher than in January 1994. Although the year-end Federal funds rate was still considerably lower both in nominal and in real terms than it had been in 1989 and early

1990 (Chart 2–13), when the gap between actual and potential output was roughly comparable to where it was at the end of 1994, the cumulative rise in the rate was substantial when measured against changes in the first year of earlier episodes of tightening.

**Chart 2-13 Nominal and Real Federal Funds Rates**

The rising Federal funds rate in 1994 reflected the Federal Reserve's shift toward tighter monetary policy.



Note: The real Federal funds rate is the nominal rate less the rate of inflation, measured by the change in the GDP fixed-weight price index over the past year.

Sources: Department of Commerce and Board of Governors of the Federal Reserve System.

The Fed's action in February, in advance of any apparent increase in inflation, reflected its view that economic activity responds with a lag and then only gradually to changes in interest rates. In the belief that the risks on inflation had shifted to the upside, the Federal Reserve reduced the degree of monetary accommodation slowly but substantially. In the Fed's view, the risk of increased inflation was augmented by the actual and expected strength of real activity, and by the absence of any appreciable slack in labor markets. Additional factors that influenced the Fed included a significant pickup in inflation at the early stages of processing, and an acceleration in nonoil import prices. The Fed also saw signs that inflationary expectations had risen in the behavior of foreign exchange and long-term debt markets: bond prices rallied initially with many of the rate hikes, but retreated subsequently with the release of additional news confirming the persistent strength of the economy. Finally, the Fed believed that various practices of banks during 1994—lowering standards for business loans and passing through to consumer loans an unusually small

portion of the rise in market interest rates—were offsetting some of the effects of higher interest rates and thus warranted somewhat larger interest rate hikes.

By the end of 1994 the effects of higher interest rates on real activity had shown up clearly only in the most interest-sensitive sectors, such as housing. Still, the expectation was that the bulk of the restraint imposed by higher rates in 1994 would materialize over the coming months, moderating the pace of economic activity in 1995. Although it is expected that the economy will slow just enough to bring it to its long-run sustainable path, neither the timing nor the ultimate size of interest rate effects is known with certainty. Thus, it is possible that the Fed will decide that another rise in interest rates will be required to slow the economy sufficiently, or that the Fed's monetary tightness will cause economic growth to slow more than anticipated by the Administration's forecast.

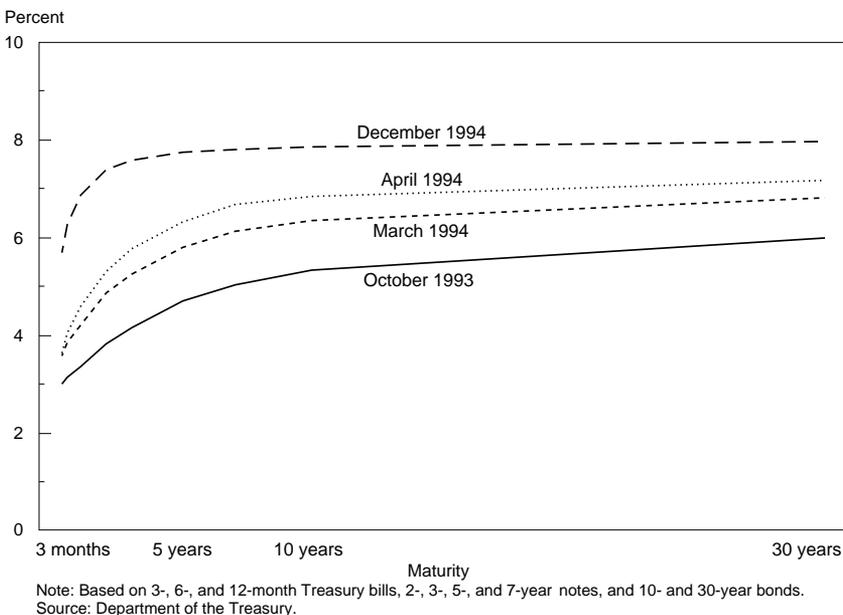
## RISING INTEREST RATES

An element of considerable surprise in financial markets over the past year was the sharp increase in yields on long-term bonds in most industrial countries. Although bond yields might have been expected to rise somewhat with the increase in short-term rates engineered by the Fed, the yield curve (the rates of interest across all maturities that prevail at a given time) nevertheless would have been expected to flatten significantly. Instead, from a low of 5.78 percent on October 15, 1993, the yield on 30-year U.S. Government bonds rose markedly during 1994, peaking at 8.16 percent in early November and ending the year at 7.89 percent. Thus, even before the first Fed action in February, yields across the maturity spectrum had risen fairly uniformly relative to the yield on 3-month Treasury bills, and the spread vis-a-vis the 3-month bill rate continued to rise through early April. Over the remainder of the year, spreads between the 3-month bill rate and yields on 1- to 3-year notes were roughly constant, while the spread between the bill rate and yields on longer term debt narrowed somewhat, especially after the Fed's tightening in November (Chart 2-14).

All told, the increase in bond yields was unusually large when judged by the historical relationship between year-to-year movements in short- and long-term interest rates. Chart 2-15 plots the actual yields on U.S. long-term corporate bonds and the yields that would be predicted from historical experience. The chart shows the uncharacteristic size of the 1994 prediction error, with actual long-term rates much higher than expected. The prediction is based on a relatively standard equation that explains the relationship be-

Chart 2-14 **Term Structure of Interest Rates on Government Debt**

Contrary to most expectations, long-term interest rates rose by almost as much as short-term rates over the course of 1994.



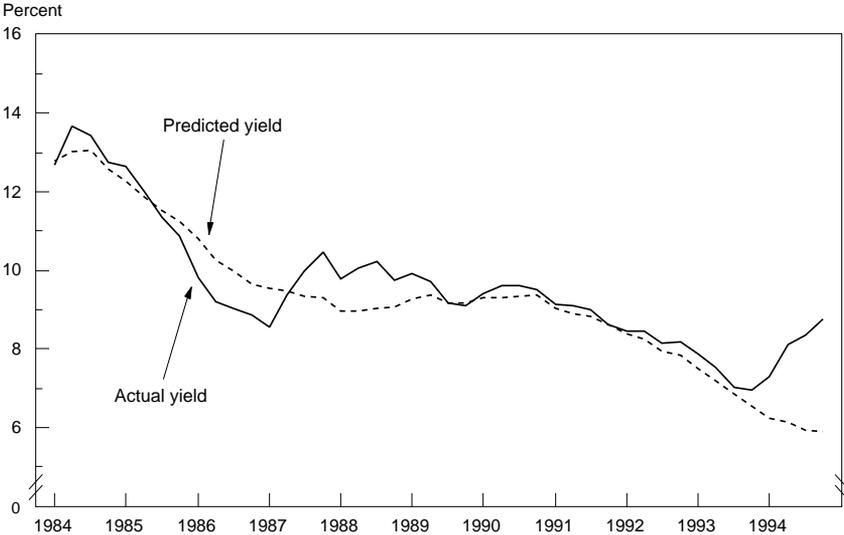
tween short-term and long-term yields—the term structure of interest rates.

The rise in long-term interest rates in the United States was fully matched by increases in the weighted average of interest rates in Japan, Germany, France, Italy, the United Kingdom, and Canada (Chart 2-16). Since the end of 1993, the weighted average of 10-year interest rates in the foreign G-7 countries moved up 2.1 percentage points over the year. However, this average movement disguises experiences that differed markedly across individual countries—for example, long-term interest rates rose 1.3 percentage points in Japan and 3.6 percentage points in Italy.

What explains the unusual rise in long-term rates both in the United States and in other industrial countries? To sort out the alternative explanations one must first determine the extent to which the increase in yields constituted a rise in *real* rates of interest, and the extent to which it reflected heightened expectations of inflation. If real rates have risen, the cause could be either stronger than expected aggregate demand or an increase in the risk premium (or some combination of the two). Only limited evidence exists to help make these distinctions. The relative importance of each factor is likely to have differed—perhaps significantly—across countries. The next section sets out a framework for examining the rise in interest rates and applies it to the U.S. experience.

**Chart 2-15 Actual and Predicted Long-Term Interest Rates**

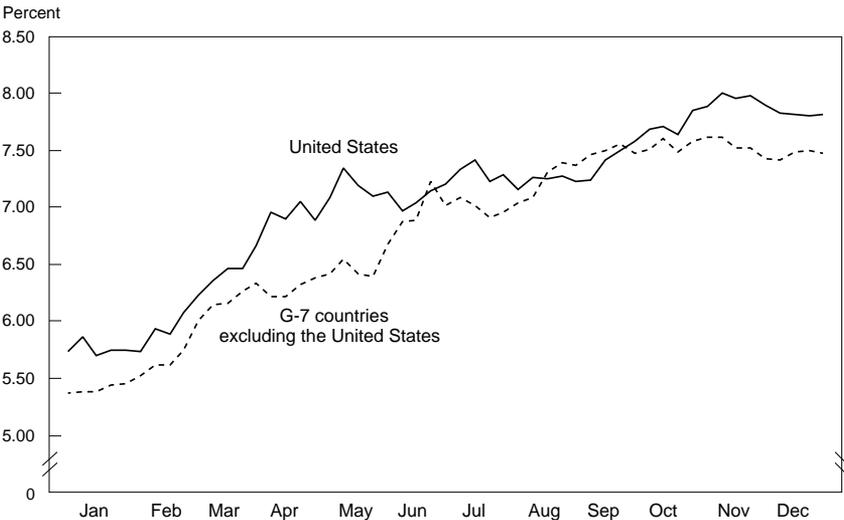
The increase in long-term interest rates during 1994 is at odds with standard models of interest rate determination.



Note: Yields are for Moody's seasoned Aaa bonds and are reported as effective yields. The predicted yields are based on the term structure equation of the MPS model, estimated over 1957-1983.  
Sources: Board of Governors of the Federal Reserve System and Moody's Investors Service.

**Chart 2-16 U.S. and Foreign Long-Term Interest Rates**

The rise in interest rates in the United States in 1994 corresponded to similar increases in foreign industrialized countries.



Note: Foreign rate computed as weighted average using shares in 1991 GDP, converted at purchasing-power-parity exchange rates. Interest rates are for 10-year bonds. G-7 (Group of Seven) countries excluding the United States are Canada, France, Germany, Italy, Japan, and the United Kingdom.  
Sources: Board of Governors of the Federal Reserve System and Organization for Economic Cooperation and Development.

## EXPLAINING THE RISE IN LONG-TERM RATES

Theories of the relationship between the yields on assets of different maturities generally argue that the yield on a 30-year bond should equal the average of expected yields on 1-year bonds over the next 30 years, plus some premium to compensate the bondholder for a loss of liquidity or other sources of long-term risk. Under the assumption that there was no change in the risk premium, the term structure theory suggests that the average expected 1-year rate over the next 30 years rose by 2.1 percentage points in the United States between October 1993 and the end of 1994, 0.4 percentage point less than the increase in the Federal funds rate during 1994. Moreover, because the rise in rates was roughly uniform for 1- to 30-year debt through most of the year, financial market participants acted as if the higher level of short-term rates would persist *indefinitely*. Thus, the market seemed to be saying that short-term rates would remain high for many years.

Based on historical experience—experience that is captured in equations used to model the term structure of interest rates—expectations about future short-term rates are not based solely on the value of the current short-term rate but also on values of past short-term rates. The almost contemporaneous increase in short- and long-term rates over 1994 thus signaled a fundamental change in the outlook for future rates. This change in interest rate expectations coincided with a growing consensus that the underlying strength of the U.S. economy was greater than first thought.

To see how the increased strength of the economy could raise rates, consider two alternative scenarios. Each scenario highlights one extreme on the spectrum of interpretations of the increase in interest rates. Both scenarios assume that the economy is operating close to its level of potential output and that something happens to raise the outlook for aggregate demand. For instance, foreign GDP growth could strengthen relative to prior expectations, thus enhancing the prospects for U.S. exports. Alternatively, housing starts or other elements of domestic demand could appear to be unusually immune to high interest rates.

In the first scenario, in order to prevent the economy from operating above its potential level following the increase in aggregate demand, the real interest rate would have to rise. Moreover, if the upward shift in aggregate demand is expected to be sustained for some years, the rise in the real interest rate must also be sustained. This scenario attributes the rise in expected short-term rates implicit in the rise in long-term interest rates to an expected and sustained increase in *real* short-term rates. This scenario is consistent with a view that the Federal Reserve's commitment to a goal of price stability will lead it to raise real rates when an in-

crease in demand would otherwise result in the economy operating above its potential.

The second scenario attributes the rise in long-term rates to an increase in the long-term forecast for *inflation*. It is based on a view that, although aggregate demand has shifted upward, the Federal Reserve either does not fully recognize the increased strength of demand or reacts only after some time has elapsed, during which price pressures build. In this scenario, in which the Fed is seen as tolerating an economy operating above its potential, the rate of inflation increases until either aggregate demand shifts back to its original level or the Fed steps in and raises real interest rates by the amount necessary to dampen the level of demand. Thereafter the inflation rate stabilizes, but at a higher level—the longer the economy is allowed to operate above potential, the larger is the sustained increase in the inflation rate.

Both of these scenarios assume that the impetus to the runup in long-term yields in 1994 was a reassessment of the fundamental strength of demand in the U.S. economy. How large would that upward revision have to have been to justify a sustained increase in expected real rates of 2.1 percentage points or an increase in the inflation premium of the same magnitude? And how plausible is such an upward revision in view of the behavior of the U.S. economy over 1994? In short, is either of the two scenarios plausible?

Rules of thumb derived from U.S. macroeconomic data can be used to quantify, albeit very crudely, the size of the perceived shock to aggregate demand under these two alternative scenarios. In the first scenario, the size of the upward shift to aggregate demand that can be offset by a given increase in real rates depends on the sensitivity of aggregate demand to changes in such rates. The more interest-sensitive is demand, the larger is the shift in aggregate demand associated with the observed increase in the real rate. Based on estimated statistical relationships, an increase in real interest rates of 2.1 percentage points would offset a permanent upward shift in aggregate demand of about 1.9 percent of GDP. That is, to keep the level of output unchanged—despite an increase of about 1.9 percent in the level of demand associated with any given real interest rate—real rates would have to rise by about 2.1 percentage points.

In the second scenario, where the entire rise in rates reflects an increase in the long-term inflation forecast, the cumulative output gap—defined as the excess of actual output relative to potential output over the period when the economy is operating above potential—is roughly 10.5 percentage points (Box 2–4 describes this calculation). A cumulative gap of this magnitude can arise either quickly or over a longer period of time. For instance, the anticipated shift in aggregate demand could be a near-term phenomenon,

with the level of output exceeding potential by 5.3 percent over each of the next 2 years. Alternatively, investors may think that the additional strength in the economy is likely to last about 5 years and be worth a little more than 2 percent on the output gap each year.

#### **Box 2-4.—Calculating the Cumulative Output Gap**

The output gap associated with a permanent increase in the inflation rate of 2.1 percentage points can be calculated by using Okun's rule and an estimate of the sacrifice ratio (defined as the percentage-point decline in the unemployment rate required to raise the long-term rate of inflation by 1 percentage point). From Okun's rule, every percentage-point increase in the gap between actual and potential output reduces the unemployment rate by 0.4 percentage point. Then, using a mean estimate of 2 for the sacrifice ratio, each percentage-point decrease in the unemployment rate that is sustained for 1 year adds 0.5 percentage point to the permanent rate of inflation.

### **EVIDENCE FROM THE UNITED STATES**

Is there evidence to discriminate between these hypotheses—an expected permanent increase in the real interest rate or an expected increase in the long-term inflation rate? What evidence is there for some middle ground—a combination of an expected increase in both the real interest rate and the inflation rate? And is the magnitude of the implied shift in aggregate demand reasonable under either of these scenarios, or is it so implausibly large that alternative explanations of the rise in long rates must be sought?

Monthly Blue Chip forecasts help to shed some light on these questions (the Blue Chip forecast is a consensus forecast of some 50 private sector economists). Beginning with the Blue Chip forecast of real GDP growth made in October 1993 (the recent low point for long-term yields) and continuing through the forecast made early in January 1995, upward revisions were made to the level of real GDP projected to prevail in the fourth quarter of 1994. By January 1995 the forecast of the *level* of real GDP for the final quarter of 1994 was 2 percent higher than the forecast made in October 1993. Forecasts of 1995 growth (on a fourth-quarter-over-fourth-quarter basis) were essentially unchanged over this period, indicating that the upward shift in the level of demand was expected to be sustained at least through 1995. These forecast revisions underestimate—possibly significantly—the perceived upward shift in aggregate demand because they occurred at the same time that actual interest rates and projected interest rates were increas-

ing (and thus do not reflect the increase in demand that would have been consistent with unchanged yields).

Blue Chip projections for the U.S. economy over the next decade are broadly consistent with the notion that the upward shift in the underlying strength of the economy in 1994 was expected to be sustained for a period of years. In October 1993 the unemployment rate was projected to average 6.0 percent and the yield on corporate Aaa bonds was expected to average 7.4 percent between 1995 and 2004. By October 1994 the average unemployment rate projected to prevail between 1996 and 2005 had risen only to 6.1 percent (roughly 5.9 percent after correcting for the difference in the new and old unemployment rate survey) despite the sizable increases in interest rates that had already occurred and an upward revision of about 0.5 percentage point to 10-year forecasts of both nominal and real interest rates (as discussed below). Thus, sustained higher interest rates were expected to be necessary to restore the level of output approximately to where it would have been in the absence of the upward shift in demand.

The Blue Chip forecasts also offer some evidence on the decomposition of the rise in interest rates into real and inflation components. Between October 1993 and January 1995, forecasts of consumer price inflation over the year ending in the fourth quarter of 1994 were revised downward slightly—from 3.2 percent to 2.8 percent. Similarly, projections of inflation over the year ending in the fourth quarter of 1995 were revised upward modestly—from 3.3 percent to 3.5 percent. In addition, forecasts of the average annual increase in the CPI over the next 10 years were revised down between October 1993 and October 1994 by 0.1 percentage point. Taken as a whole, these revisions offer no evidence for an increase in the inflation premium and thus lend support to the hypothesis that the rise in long-term rates was largely due to an increase in the real component.

Clearly, revisions to Blue Chip forecasts of output growth and inflation provide at best imperfect evidence on long-run expectations, and even then are limited by their 10-year horizon. Moreover, there is some evidence to suggest that financial market participants saw a very different story. For instance, the dividend-price ratio of the stocks in the Standard & Poor's 500 index—a reasonable proxy for the expected real rate of return on equity—showed no significant sustained increase over the course of 1994. So, from the behavior of equity markets, the rise in long-term interest rates either was due to heightened expectations of inflation or represented some shift in the preference for equity over bonds. A popular view in the financial press was that, for much of the year, the Fed was “behind the curve”; in that case, some fraction of the rise in long-term rates would have reflected market fears of increased inflation. In fact,

the flattening of the yield curve that followed the Fed's November tightening is consistent with the view that the Fed had only then assumed the appropriately aggressive stance.

An increase in the market's required compensation for risk could also be an important factor in the rise in long-term yields. The risk premium is difficult to measure and can vary over time as perceptions change. The events in financial markets in 1994 no doubt heightened market participants' assessments of risk, as is evidenced by a rise in expected volatilities inferred from options prices. But expected volatilities remained well below levels recorded through much of the 1980s, and thus this measure of riskiness, by itself, does not support the hypothesis that higher risk premia accounted for a significant portion of the runup in U.S. long-term interest rates.

On balance, therefore, the evidence from the United States is mixed. The consensus of forecasts sees no major increase in inflation. But there are indications that financial markets did see inflation and that the increase in long-term rates was therefore not entirely due to an increase in its real component.

More direct and reliable readings of inflation expectations would be provided if one could compare rates of return on bonds whose yields are invariant to inflation with yields on conventional bonds (Box 2-5). Such inflation-indexed bonds have been issued in other countries, but not in the United States, and valuable information about inflation expectations has been obtained from their yields.

## EVIDENCE FROM FOREIGN COUNTRIES

A number of factors appear to have contributed to the rise in long-term interest rates in foreign countries during 1994. Probably the most important development—virtually identical to the evolution of forecasts for the U.S. economy—was the better than expected recovery in real economic activity in the foreign G-7 countries. At the beginning of 1994, market forecasters expected real GDP growth to average 1.1 percent in the major foreign countries in 1994 and 2 percent in 1995. By the end of last year those expectations had been revised upward to 2.1 percent and 2.6 percent, respectively. As in the case of the United States, there is some limited evidence available to decompose the rise in nominal yields into real, inflation, and risk components.

Evidence from the United Kingdom's well-established market for indexed bonds suggests that only about one-half of the rise in nominal interest rates in that country has shown up in real rates. The remaining increase in nominal interest rates during 1994 is viewed as compensation for inflation, a measure that includes the expectation of inflation as well as any premium for inflation risk. That the United Kingdom would have experienced such a large in-

### **Box 2-5.—Indexed Bonds**

Although the inflation-indexed bonds that various countries have issued differ somewhat in their design, their terms generally guarantee that the principal and coupon payments are adjusted to reflect the cumulative change in a specified price index since a base period. For instance, consider an indexed bond that is issued with 2 years to maturity, a maturity value of \$100 in real terms, and an annual coupon rate of 5.0 percent. One way of structuring the payments stream is as follows. If prices rise by 3 percent in the first year, the first-year coupon payment would be \$5.15 (0.05 times \$100 times 1.03). If prices rise by 4 percent in the second year, the second-year coupon payment would be \$5.36 (\$5.15 times 1.04). The maturity value at the end of the second year would be \$107.12 (\$100 times 1.03 times 1.04). If this bond sells for \$100, its real yield is 5 percent.

For this indexed bond, the real yield to maturity is set once the purchase price of the bond is determined. The real yield does not vary with the rate of inflation, although the realized nominal yield to maturity does. By contrast, with a conventional bond the nominal yield to maturity is known given the purchase price, and the realized real yield to maturity will depend on the actual course of inflation.

An estimate of the expected rate of inflation can be derived by comparing the real yield on an indexed bond with the nominal yield on a conventional bond. For example, if the average annual nominal yield on a conventional bond is 9 percent and the average annual real yield on an indexed bond is 5 percent, then the average annual expected rate of inflation is approximately 4 percent, assuming that, except for the indexation, the bonds are perfect substitutes for each other in investors' portfolios. Differences between the bonds' maturity, coupon payments, tax treatment, and other features could affect the preference for one type of bond relative to the other, in which case the difference in yields would not correspond exactly to the expected rate of inflation. For example, investor preferences for certainty about the real rate of return are likely to cause the spread between yields on conventional and indexed bonds to overestimate the expected rate of inflation, because investors would be willing to pay a premium on indexed bonds (or would require additional compensation on conventional bonds). Similarly, if investors preferred certainty about nominal returns, the yield spread would be likely to understate the expected inflation rate.

crease in compensation for inflation over 1994 should come as no surprise, given that inflation there in recent years has been somewhat volatile. Moreover, the withdrawal of the pound sterling from the Exchange Rate Mechanism of the European Monetary System in September 1992 may have increased the risk premium attached to British assets. Notwithstanding this evidence of a greater likelihood of inflation, or increased uncertainty about inflation prospects, forecasts of U.K. retail price inflation for 1994 and 1995 were actually revised *downward* over the year.

With the exception of Italy, inflation forecasts for 1994 and 1995 remained unchanged or declined between January and December 1994 in the foreign G-7 countries. This evidence, by itself, would suggest that in most countries the rise in yields was due to higher real rates or increased premia for risk. However, some analysts have suggested that the rise in long-term bond yields across countries in 1994 should be viewed in the context of each country's inflation history. Chart 2-17 demonstrates that the rise in long-term interest rates last year was smaller in countries with a history of lower inflation (such as Japan and Germany) than in countries with a history of higher inflation.

Others have suggested that the size of fiscal deficits may have played a role. But the evidence on the link between government spending and increases in long-term yields is more mixed. The total stock of government debt is a far better indicator of a nation's fiscal position than is the size of the deficit in a single year. Whereas in Italy and Sweden increases in long-term yields of 3.6 and 3.7 percentage points, respectively, seemed to be related to government debt levels around 100 percent of GDP, rates rose in Belgium by a smaller 1.9 percentage points, despite government debt near 150 percent of GDP. There was considerable discussion among analysts about the determinants of the rise in long-term yields, but past price and fiscal developments were not "news" in 1994, and therefore it is difficult to understand why financial market participants had not already incorporated such developments into their expectations. In some cases these variables, when coupled with an uncertain political environment, may have increased the market's required compensation for risk.

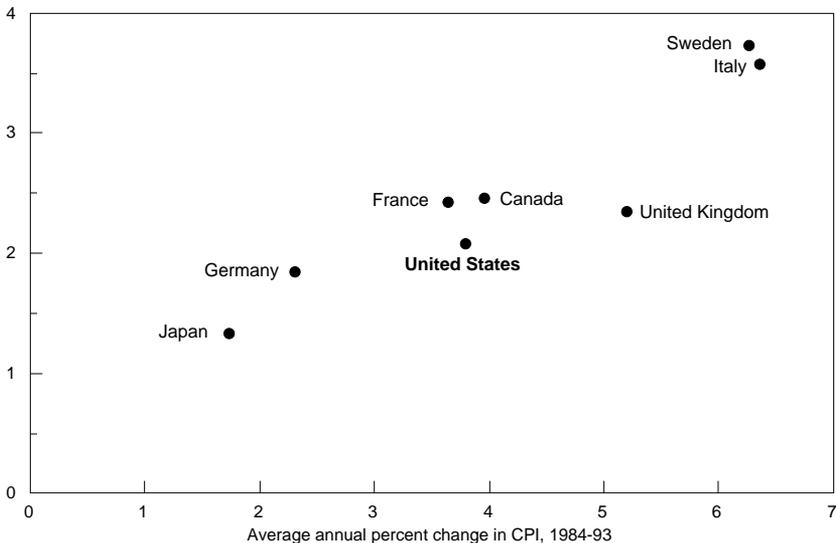
## FISCAL DEFICITS, DEMOGRAPHICS, AND EMERGING MARKETS

Some analysts have pointed to other factors as possible contributors to increased capital demands and last year's global rise in long-term interest rates. One factor frequently mentioned is government deficits in industrial countries, which are sizable but generally did not increase appreciably last year. Another factor mentioned is demographic shifts that will begin in some countries by

### Chart 2-17 Inflation and Long-Term Interest Rates

Interest rate increases were greater in countries with histories of higher rates of inflation.

Change in rates on 10-year bonds during 1994 (percentage points)



Sources: Board of Governors of the Federal Reserve System and Organization for Economic Cooperation and Development.

the end of this century and are expected to bring with them increased health care costs and rising pension liabilities. Ultimately, fiscal deficits may grow significantly larger, as countries face the expenses associated with aging populations. Finally, increased investment opportunities in developing countries and transition economies are often viewed as having added to global demands for capital in 1994. Many commentators have pointed to the rise in stock market capitalizations in emerging economies and the increased flow of capital into those markets from U.S. institutional investors seeking portfolio diversification.

None of these factors was new last year, however, and it is difficult to see what would make them suddenly become important in 1994. Although the factors just enumerated may be important in assessing the expected competition in world capital markets over the longer term or the generalized rise in the level of real interest rates since the 1960s and 1970s, it seems improbable that they contributed substantively to increases in long-term interest rates during 1994.

## THE ADMINISTRATION FORECAST

The Administration expects the economic expansion to moderate in 1995 as the effects of increases in interest rates to date spread

more broadly through the economy. The actual growth rate is forecast to approach the growth rate of potential output, with the economy achieving a so-called soft landing. Over the longer run, output is forecast to grow in line with potential output, and the rate of inflation to remain roughly constant at 3 percent (Table 2-5).

TABLE 2-5.— *Administration Forecast*

item	1994 (actual) <sup>1</sup>	1995	1996	1997	1998	1999	2000
	Percent change fourth quarter to fourth quarter						
Real GDP .....	4.0	2.4	2.5	2.5	2.5	2.5	2.5
GDP implicit deflator .....	2.3	2.9	2.9	3.0	3.0	3.0	3.0
Consumer price index (CPI-U) .....	2.6	3.2	3.2	3.2	3.2	3.1	3.1
	Calendar year average						
Unemployment rate (percent) .....	6.1	5.5-5.8	5.5-5.8	5.5-5.8	5.5-5.8	5.5-5.8	5.5-5.8
Interest rate, 91-day Treasury bills (percent) ..	4.3	5.9	5.5	5.5	5.5	5.5	5.5
Interest rate, 10-year Treasury notes (percent)	7.1	7.9	7.2	7.0	7.0	7.0	7.0
Nonfarm payroll employment (millions) ....	113.4	116.7	118.3	120.1	121.7	123.4	125.1

<sup>1</sup> Preliminary.

Sources: Council of Economic Advisers, Department of the Treasury, and Office of Management and Budget.

By early 1996 the forecast predicts an easing in short-term interest rates. Over the forecast horizon, long-term interest rates also are projected to decline, and the spread between long- and short-term rates is projected to narrow, as the near-term slowing of growth dispels any fears on the part of financial market participants of an overheated economy. The decline in nominal long-term rates reflects a decline in real long-term rates and, in turn, is a consequence of the growing restraint implied by the stance of fiscal policy. Absent the decline in the real rate, output growth would be likely to slow with the slowing in Federal Government spending. Thus the Administration's longer term outlook is consistent with a growing share of private sector spending (especially of its interest-sensitive components) and a declining share of Federal spending in GDP.

The unemployment rate is forecast to be between 5.5 and 5.8 percent. A range, rather than a single figure, is projected both because the relatively short experience with the new unemployment rate survey increases the uncertainty associated with its forecast, and because, as indicated earlier, some structural change could be under way in labor markets. Nevertheless, the Administration expects that economic growth over the next several years will be strong enough to absorb all new entrants into the labor force. For

budget purposes, the more conservative projection of a 5.8 percent unemployment rate was used.

As always, there are risks to the forecast. In assessing the near-term risks, some possibility exists that the interest rate increases to date will not succeed in dampening growth as quickly as anticipated and that the pace of the expansion could overshoot the projected growth rate of 2.4 percent for 1995. Were this to happen, interest rates would be likely to rise further, slowing the economy thereafter more than expected.

On the downside, there remains the possibility that interest rate increases already in the pipeline will moderate the expansion sooner and by more than anticipated. Compounding this risk is the risk that foreign economic growth may stall, reducing foreign demand for U.S. exports. The sharp decline in the Mexican peso and the ensuing slowdown in the Mexican economy will also cut into U.S. export growth. In addition, the substantial inventory accumulation over the past year may not be entirely intentional. If this is the case, production could be scaled back more than anticipated in order to reduce the degree of inventory overhang.

Finally, the course of the economy depends as always on budgetary and other policy decisions of the Congress. Perhaps more than usual in recent years, there is substantial uncertainty about future congressional action in matters that can influence the paths of output, deficits, and interest rates over the medium run.

## CONCLUSION

Strong, investment-led growth with rapid job creation and low inflation is a winning combination, and this is what the U.S. macroeconomy has achieved over the past 2 years. In part, the robust pace of growth in GDP in 1993 and 1994 was possible because considerable slack existed in the economy in January 1993. Because most of that slack had disappeared by the end of 1994, it is unlikely that the economy will realize the same rate of growth over the next few years. That is why the Administration—and most private forecasters—predict a soft landing in which GDP growth moves to what is widely viewed to be its long-run potential rate of about 2.5 percent a year.

Despite the likely slowing of growth, the macroeconomic outlook remains very favorable. Continued increases in employment and incomes are expected. Job creation should be sufficient to keep the unemployment rate down, and sustained economic expansion with moderate inflation should allow more Americans to increase their real earnings and their family incomes over the next 2 years and beyond.

As always, there are risks in the economic outlook. The Federal Reserve has increased short-term interest rates, and long-term rates have risen almost in parallel. Indeed, long-term rates have risen around the world. The rise that has already taken place could slow growth more than expected. However, the Council of Economic Advisers views this as an unlikely outcome.

In the 1980s the U.S. economy collided with exploding budget deficits. That situation has changed. The deficit reduction measures already enacted have paid off, leading to an improved deficit outlook for the remainder of the decade. The President's 1996 budget proposal includes additional deficit reduction, as well as a middle-class tax cut. The Administration's progress on reducing the deficit has provided the basis for a stable and balanced long-term growth path.

One weak spot in the macroeconomic picture for 1994 has been the current account deficit, which widened significantly over the year as the strong U.S. expansion, combined with less robust growth overseas, resulted in stronger growth in imports than in exports. An improvement in the current account is anticipated for 1995, as growth overseas strengthens and U.S. import growth slows. Over the longer run, reductions in the budget deficit will aid in reducing the current account deficit.

With a budget deficit that is under control, strong growth of jobs and GDP, and continued low inflation, the macroeconomy has changed vastly for the better over the past 2 years, and the U.S. economy looks forward to continued growth with rising incomes in 1995.

Vigorous growth in 1993 and 1994, an expected soft landing in 1995, large increases in employment, and modest rates of inflation—these are noteworthy achievements for any economy. But the unemployment rate remains high—especially for teenagers, blacks, and Hispanics—despite a significant decline over the past 2 years, and the real incomes of many Americans have shown only meager growth. Chapter 5 discusses the Administration's proposals for life-long learning, which have the potential to greatly improve the earning prospects of those Americans who have not participated fully in the economy's expansion. First, however, Chapter 3 discusses policies to enhance the economy's long-run growth.

## CHAPTER 3

# Expanding the Nation's Productive Capacity

HOW FAST CAN THE ECONOMY grow on a sustainable basis? Most mainstream analysts currently believe that aggregate output can grow about 2½ percent per year. Recently, however, some analysts—perhaps inspired by the outstanding performance of the economy in 1994—have asserted that much more rapid growth, possibly as fast as 5 percent per year, may be sustainable.

The answer to this question has profound implications for the future well-being of the American people. If the mainstream view is correct, aggregate output will double only every 28 years or so, and per capita output only about every 56 years (assuming population growth of 1 percent per year). But if the alternative view is correct, aggregate output could double every 14 years, and per capita output every 18 years.

The answer also has important implications for the conduct of government policy. Sensible Federal budget planning can proceed only in the context of a realistic assessment of the long-term outlook for the economy. If the outlook is robust, then a more expansionary fiscal policy may well be consistent with a responsible outcome on the deficit. If, on the other hand, the outlook is more subdued, a greater degree of fiscal restraint may be required.

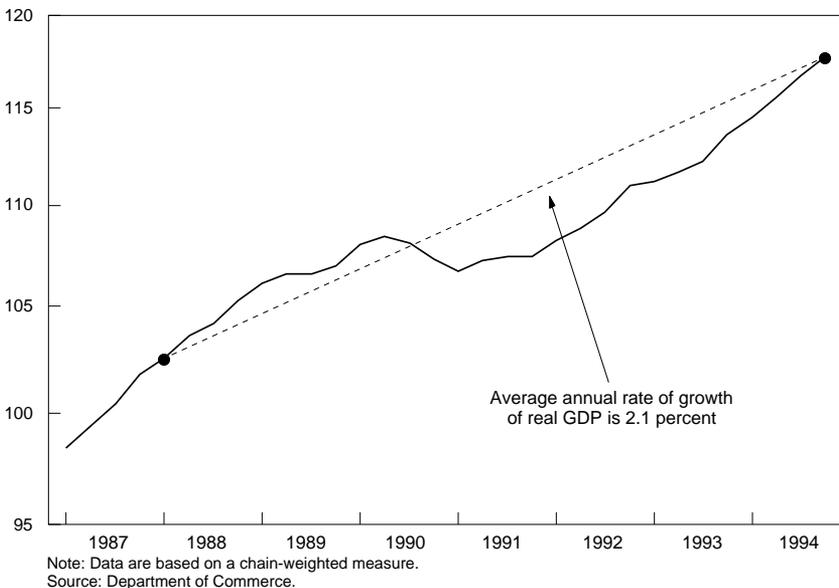
Chart 3-1 illustrates one simple method for assessing the sustainable rate of growth of gross domestic product (GDP). (The estimates of GDP used in this chapter are based on so-called chain-type annual weighted data, which are discussed in Box 3-1.) The chart focuses on the growth of real GDP between the first quarter of 1988 and the fourth quarter of 1994. The reason for focusing on these two quarters is that the unemployment rate was very similar in both: 5.7 percent and 5.6 percent, respectively. This suggests that a similar fraction of the economy's overall productive capacity was being utilized in both quarters. Thus the average rate of growth of output in the interval between them should give a good indication of the average rate of growth of the economy's productive capacity during that period.

As the chart shows, real GDP increased at an average annual rate of 2.1 percent between the first quarter of 1988 and the fourth quarter of 1994. This suggests that the economy's productive capac-

### Chart 3-1 Real Gross Domestic Product

Between the beginning of 1988 and the end of 1994, real GDP increased at an average annual rate of 2.1 percent.

Index, 1987 = 100 (ratio scale)



ity—potential GDP—also grew at about that rate. Over the same period, real GDP measured on the more conventional basis (1987 dollars) increased at an average annual rate of 2.3 percent. Therefore, this simple method suggests that the consensus view that the sustainable rate of growth is about 2½ percent per year is slightly more optimistic than a purely mechanical reading of recent experience would warrant.

But does the simple graphical method, based only on historical experience, provide an accurate signal about the future growth of the economy's capacity? Historical experience does not yield certain knowledge of future trends. In particular, it does not take into account the influence of policies adopted by this Administration with the goal of enhancing the productive capacity of the economy. This chapter undertakes a systematic analysis of the factors contributing to the growth of the economy's potential, mainly for the purpose of assessing future growth prospects. The chapter begins by reviewing trends in the growth of GDP since the early 1960s. Next it analyzes improvements in the productivity of American workers and increases in their hours of work—the two major sources of growth in the economy's productive capacity. This discussion also examines the shortcomings of existing measures of productivity growth and concludes that the economy's actual performance may be stronger than current estimates indicate. The chapter then

### **Box 3-1.—Chain-Weighted Measures of Output and Productivity Growth**

Any index of aggregate output is constructed as the weighted sum of the output of the myriad types of goods and services produced in the economy. But what weights does one use? From an economic standpoint, it makes sense to use relative prices as weights. In the United States, government statisticians traditionally have used *fixed* weights, namely, the relative prices that prevailed in a particular recent year (currently 1987). The resulting index is appropriate for assessing economic performance in years when the relative price structure was similar to that in the base year.

Over time, however, relative prices can change greatly, making a fixed-weight index less useful for gauging long-term trends in output. Computers serve as a good example. The rapid increase in the quantity of computers produced over the past 30 years has been accompanied by a sharp decline in their relative price. Because the price of a computer in 1987 was far lower than it was in, say, 1963, the fixed-weight index understates the sector's share in total output in 1963, and hence understates total output growth between 1963 and 1987. After 1987, the effects are reversed: the price of computers has continued to decline, so use of 1987 weights for 1994 computer output causes an overstatement of the contribution of computers to 1994 output. Because the output of the computer sector has continued to grow faster than the economy as a whole, this overweighting causes the fixed-weight index to overstate the growth in output between 1987 and 1994.

Fortunately, the Department of Commerce, which prepares the traditional fixed-weight measures of GDP, also now publishes alternative GDP measures that eliminate this bias. One such alternative is the so-called chain-type annual weighted measure. The Department of Labor uses a similar chain-weighted measure (for the private nonfarm business sector) to construct the productivity measures cited in this chapter. According to the chain-type output measure, between 1963 and 1987 real GDP increased by an average of 3.3 percent per year, or 0.3 percentage point faster than the fixed-weight measure. Between 1987 and 1993, output as measured by the alternative index grew an average of 1.9 percent annually, or about 0.2 percentage point less than the official fixed-weight figures. Thus, correcting for fixed-weight bias makes the post-1987 performance of output (and therefore also of productivity) look somewhat less encouraging relative to its pre-1987 performance.

turns to an examination of the appropriate role of government policy in enhancing the economy's sustainable long-run growth rate. The chapter concludes with a brief assessment of the outlook for trend productivity growth and for the growth of the economy's potential.

## FACTORS GENERATING GROWTH OF POTENTIAL GDP

Between 1963 and 1994 real U.S. GDP increased at an average annual rate of 3.1 percent per year. Because the economy appears to have been operating about at its potential in both those years, the average rate of growth of *actual* output between those dates should provide a relatively accurate estimate of the average rate of growth of *potential* output during the same period.

Growth of real GDP can be decomposed into two main components: growth of output per hour worked (or productivity) and growth of hours worked. As Chart 3-2 illustrates, these two components each contributed 1.7 percentage points to the growth of GDP between 1963 and 1994. (Strictly speaking, the data on productivity and hours worked pertain only to the private nonfarm business sector, whereas the data on output pertain to the total economy. As a result, and because the output of the private nonfarm business sector was increasing slightly more rapidly than the output of the total economy, the growth of output per hour and the growth of hours worked add up to slightly more than the growth of GDP).

Chart 3-2 also shows that the average experience since 1963 subsumes two very different episodes. Between 1963 and 1972 real GDP increased at an average annual rate of 4.2 percent. By contrast, since 1972 real GDP has increased only about 2.6 percent per year. (The economy appears to have been operating at about its potential in 1972; as a result, that year should also serve as a useful benchmark for purposes of estimating potential GDP growth rates.) The slower rate of growth of GDP since 1972 can be attributed to a slowdown in the rate of growth of productivity, since the growth of hours worked was about as rapid after 1972 as before.

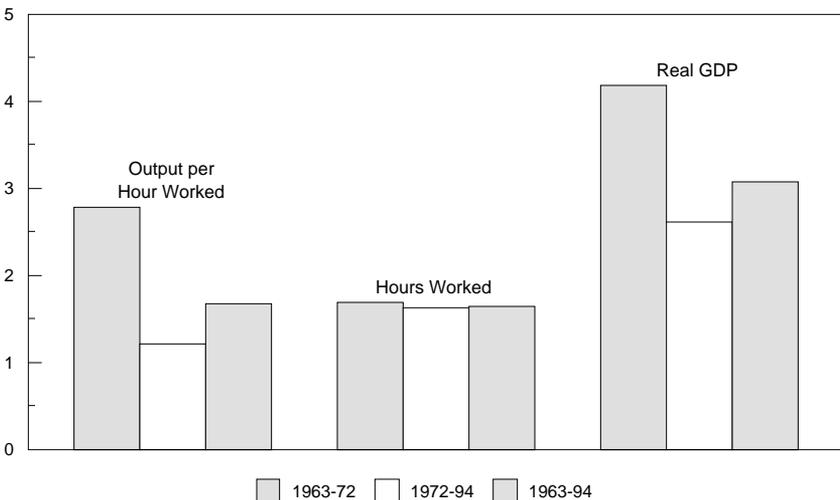
Chart 3-3 examines the slowdown in the growth of productivity in more detail. The chart illustrates one of the most significant economic developments of the postwar period. Whereas productivity in the private nonfarm business sector increased at an average annual rate of 2.8 percent between 1963 and 1972, it increased only 1.7 percent per year between 1972 and 1978, and only 1.0 percent after 1978 (yet another year in which the economy was operating close to potential).

By contrast, productivity growth in the manufacturing sector seems to have slowed much less during the past four decades. As

**Chart 3-2 Factors Generating Growth of Gross Domestic Product**

Since 1972, real GDP has increased more slowly than before, owing to a reduction in the rate of growth of output per hour worked.

Average annual percent change

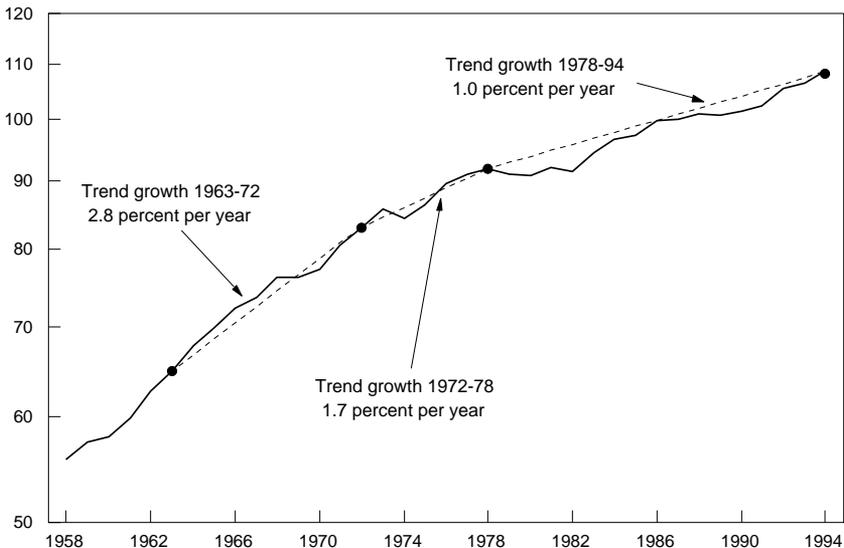


Note: Estimates of growth in output and output per hour are based on chain-weighted measures. Data on output per hour and hours worked pertain to the private nonfarm business sector, whereas the data on GDP pertain to the whole economy.  
Sources: Council of Economic Advisers, Department of Commerce, and Department of Labor.

**Chart 3-3 Output per Hour in the Private Nonfarm Business Sector**

Productivity growth in the private nonfarm business sector seems to have slowed markedly sometime in the early 1970s.

Index, 1987 = 100 (ratio scale)



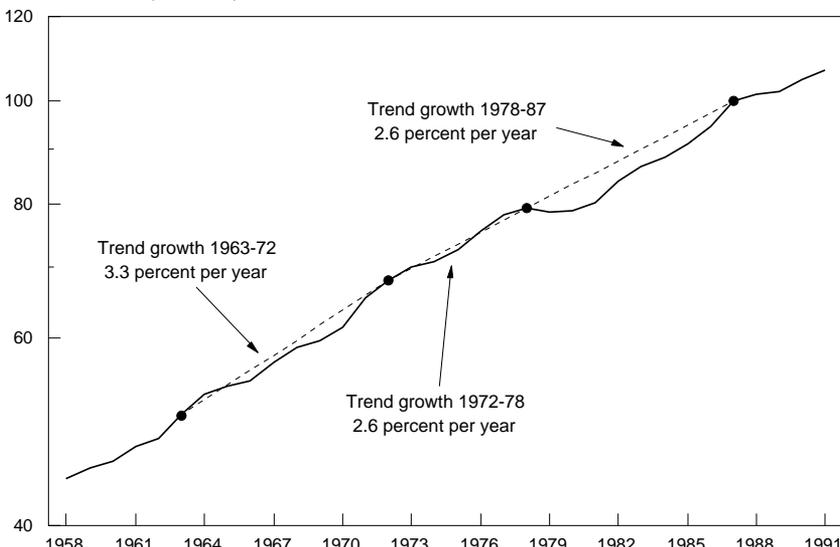
Note: Data are based on a chain-weighted measure.  
Sources: Council of Economic Advisers and Department of Labor.

Chart 3-4 shows, output per hour in the manufacturing sector is estimated to have increased on average about 3.3 percent per year between 1963 and 1972, 2.6 percent between 1972 and 1978, and 2.6 percent again between 1978 and 1987. (The chain-weighted data used in Chart 3-4 were only available through 1991. Growth in manufacturing productivity between 1987 and 1991 was quite weak, but this is not surprising given that the economy was still in recession in early 1991. Assessment of the more recent trend in manufacturing productivity will have to await publication of data for subsequent years, when the economy was once again operating closer to potential.)

**Chart 3-4 Output per Hour in the Manufacturing Sector**

Productivity growth in the manufacturing sector appears to have slowed only a little since the 1960s and early 1970s.

Index, 1987 = 100 (ratio scale)



Note: Data are based on a chain-weighted measure.  
Source: Department of Labor.

Taken together, Charts 3-3 and 3-4 suggest that the slowdown in the growth of productivity after 1972 was concentrated outside the manufacturing sector. It has been argued that these and similar data exaggerate that concentration, because they do not control for the fact that the manufacturing sector may have increasingly “outsourced” some low-productivity activities. For example, if factories contract with security firms to do work formerly done by their own security guards, that activity will be counted in the services rather than the manufacturing sector, and if security guards’ productivity is less than that of the factories’ assembly-line workers, official statistics may report an increase in overall manufactur-

ing productivity that does not reflect an increase in the productivity of any individual worker. What this argument ignores, however, is that *high*-productivity jobs may also have been outsourced, in which case the direction of bias in the official estimates would be ambiguous. On balance, the evidence suggests that the apparent strength of productivity growth in manufacturing is not a figment of job migration.

Much of the discussion in this chapter focuses on the slow rate of growth of productivity in the United States since the early 1970s, relative to earlier U.S. experience and the experience of other countries. But it is worth noting that U.S. workers remain among the most productive in the world. This suggests that the productivity “problem” in the United States has much more to do with the rate of growth of productivity than with its level. Box 3–2 discusses one possible explanation for the coincidence of a high level and slow growth of productivity in the United States compared with other countries.

## FACTORS GENERATING GROWTH OF PRODUCTIVITY

Productivity can be raised by improving the quality of the work force (adding human capital per worker in the form of education or training); by increasing the quantity of capital (investing in new private equipment and structures and in public infrastructure); and by improving the efficiency with which these factors of production are used. Improvements in efficiency can come from advances in technology (due to basic research or applied research and development, or R&D), but they can also come from other sources, such as process innovation, that are not conventionally thought of as technology. Chart 3–5 summarizes the behavior of the main factors contributing to the growth of productivity since 1963. (Box 3–3 discusses whether an increase in productivity comes at the expense of a reduction in jobs.)

### THE QUALITY OF THE WORK FORCE

One important determinant of worker productivity is the workers themselves and the skills and abilities they bring to the workplace. Increases in the hourly output of the average worker can reflect an improvement in the characteristics that allow workers to accomplish the same tasks in less time, to adapt to changing situations with greater flexibility, and to become the engineers of change themselves.

Two rough indicators of work force quality are average educational attainment (average years of schooling per worker) and average experience. Since 1963 the average educational attainment of

**Box 3-2.—Technological Catch-up and International Differences in Productivity Growth**

How could it be that the United States, with one of the highest *levels* of productivity in the world, is not also among the countries where productivity is growing most rapidly? Some economists have suggested that, far from being a paradox, this circumstance is to be expected. The slow-growing leader, fast-growing follower pattern may simply reflect the dynamics of technological “catch-up.”

Standard models of economic growth assume that richer and poorer countries have the same production technologies at their disposal (even if they choose to implement them with different mixes of capital and labor). Recently, however, growth economists have begun to question the realism of this assumption. In practice, technological diffusion—the spread of ideas—from leader to follower is far from automatic. Firms in follower countries may lack the skilled workers (engineers, managers) needed to exploit technologies used in leader countries efficiently. In addition, firms in leader countries may attempt to guard their core technologies to prevent or delay their spread to potential competitors abroad. Technological diffusion may be particularly slow in the case of “soft” technologies (process technologies and work organization), which cannot be imported and reverse-engineered as new products can.

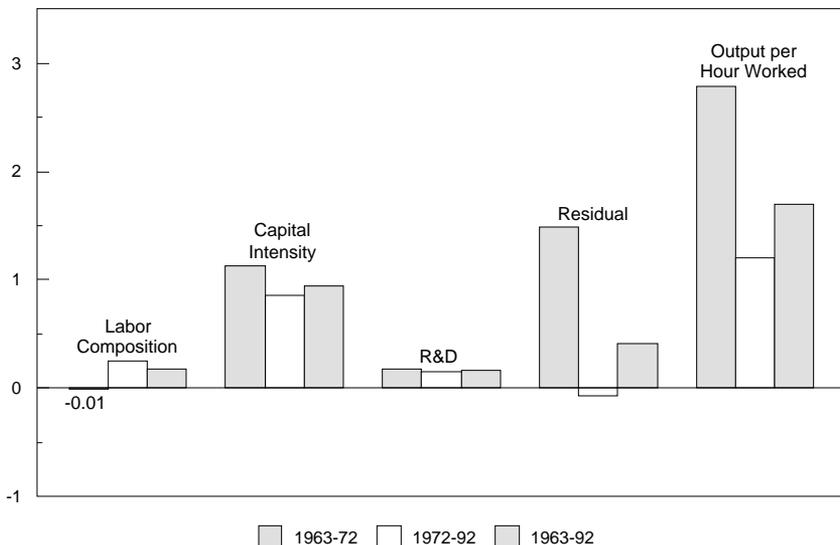
For follower countries a gap in technology creates an opportunity. Leader countries (such as the United States) will find their productivity growth limited by the rate of creation of new knowledge. But followers can grow more quickly by closing a portion of the technology gap. It appears that success in closing this gap helped spur the postwar growth of Japan and the East Asian newly industrializing countries, which invested heavily in technology acquisition and human resources and created business environments conducive to technological growth. Not every country succeeds, however, in closing the technology gap. Indeed, some followers have fallen farther behind, and follower countries as a group have not become richer faster than leader countries. Nevertheless, the evidence suggests strongly that, for followers, the upper limit on growth in per capita income and productivity exceeds that for technological leaders.

the work force has increased by about 2 years. The Bureau of Labor Statistics (BLS) of the Department of Labor estimates that investment in education boosted productivity about 0.3 percentage point per year, on average, between 1963 and 1992. In contrast, the average experience level declined slightly between 1963 and 1992,

Chart 3-5 **Factors Generating Growth of Output per Hour**

Most of the slowdown in productivity growth after 1972 reflects a deceleration of the so-called residual factor.

Average annual percent change



Note: Data are based on chain-weighted measures and pertain to the private nonfarm business sector.  
Source: Department of Labor.

knocking about 0.1 percentage point off productivity growth each year. On net, therefore, measured changes in worker quality have added an estimated 0.2 percentage point per year to productivity growth since 1963. Interestingly, worker quality appears to bear none of the responsibility for the post-1972 slowdown in productivity growth. In fact, the estimated contribution of improvements in worker quality to productivity growth *increased*, from essentially nothing before 1972 to about 0.3 percentage point per year between 1972 and 1992 (Chart 3-5).

One caveat is in order here. Although the BLS education measure captures changes in the average number of years of schooling, it does not capture changes in its quality. Clearly, quality matters: a worker who spent 12 years marking time in poorly taught classes is likely to be less productive than one who spent the same number of years actively learning from skilled teachers. Unfortunately, the evidence on whether any such decline in the quality of schooling could help explain the productivity slowdown is too scanty to support any firm conclusions.

Training workers on the job is another way of increasing their human capital and contributing to aggregate productivity growth. Solid quantitative estimates have not been made of the contribution of training to aggregate productivity growth because there are no reliable data on the aggregate amount of training taking place.

### **Box 3-3.—Productivity and the Growth of Jobs**

A persistent concern, voiced by many workers and business owners as well as some economic analysts, is that rapid growth of productivity may cause job losses. This concern seemed validated early in the current expansion, when strong growth of productivity seemed to be standing in the way of a vigorous pickup in the pace of hiring. Does this concern have any analytical basis?

At the macroeconomic level, a pickup in the rate of productivity growth need not be associated with any reduction in the aggregate number of jobs available in the economy—at least not once fiscal and monetary policy have been adjusted to reflect the favorable change in productivity growth. An increase in productivity growth allows GDP to grow more rapidly without generating inflationary pressures. Over the long term, macroeconomic policies can bring the growth of aggregate demand in line with the improved rate of expansion of the economy's productive capacity, and thus sustain the growth of employment.

At the microeconomic level, productivity growth may change the composition of available jobs, and thus may be associated with significant dislocation as workers are forced into new jobs, possibly requiring different skills and perhaps even relocation. In this context, the role of government is to facilitate the transition of workers and capital to their most productive uses, while setting fiscal and monetary policies to keep the economy on a sustainable trajectory of high employment with low inflation.

Nevertheless, available microeconomic evidence suggests that training matters. Studies of the wages of individual workers indicate that the payoff to formal training (including apprenticeships) can be quite substantial: a year of training typically provides returns of a similar magnitude to those offered by a year of formal schooling (an increase in wages of about 6 to 10 percent on average). Other research has found that companies offering more training enjoy higher rates of productivity growth. (Chapter 5 discusses the importance of worker training in greater detail.)

### **THE SIZE OF THE PRIVATE CAPITAL STOCK**

Increasing capital intensity—roughly speaking, the amount of capital per worker—has been a key source of productivity improvement over the postwar period. When new investment has been undertaken to support an improved technology, the gains have some-

times been especially impressive. For example, output per hour in the telecommunications industry increased an average of 5.5 percent per year between 1969 and 1989, as the industry invested heavily in new satellite, cellular, and fiber optic technologies.

Productivity increases through capital investment have often involved exploiting economies of large-scale production. Industries such as food processing, beverages, and electricity generation are cases in point. In the beverage industry, for example, high-speed canning lines have raised productivity, but their contribution has been made possible in part by the development of large markets. To operate efficiently, these lines must produce nearly 500 million cans per year!

Data from the BLS indicate that increases in capital intensity—also known as capital deepening—added about 0.9 percentage point per year to the growth of U.S. productivity between 1963 and 1992. As Chart 3–5 shows, a reduction in the pace of capital deepening explains only a small portion of the post–1972 slowdown in productivity growth.

## INFRASTRUCTURE

Historically, investment in public capital such as roads, bridges, airports, and utilities has made a significant contribution to the Nation's productivity growth. Yet the net public capital stock in the United States has declined relative to GDP, from 50 percent of GDP in 1970 to only a bit more than 40 percent recently. The net public capital stock has also declined relative to the net private nonresidential capital stock. These declining trends in public capital suggest that infrastructure investment has been a net drag on the growth of productivity since 1970, but there is no consensus as to the quantitative importance of this effect.

## RESEARCH AND DEVELOPMENT

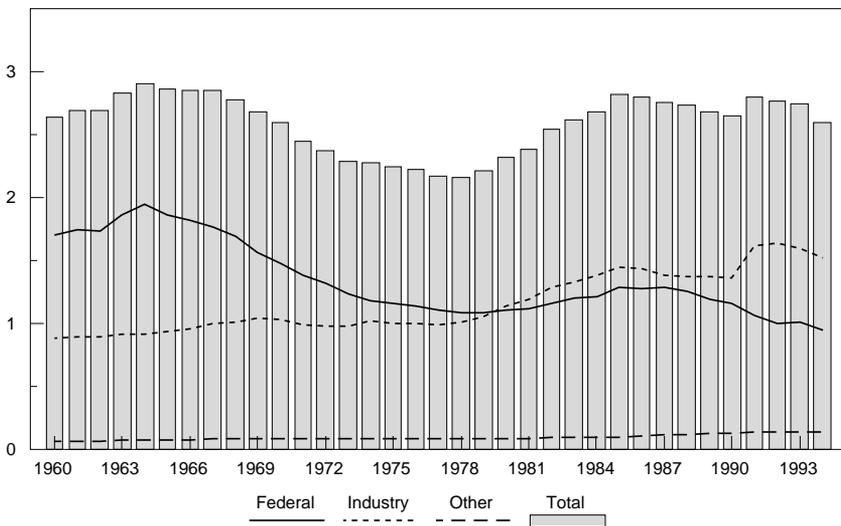
Total Federal and private spending for research and development has averaged about 2½ percent of GDP since 1960 (Chart 3–6). In dollar terms, American investment in R&D in 1992 was greater than the R&D investment of Japan, Germany, and France combined. Even relative to national income, the United States was roughly tied with Japan for first place among major industrialized countries.

As Chart 3–6 shows, a much larger share of total R&D spending in the United States is privately financed now than used to be the case. Relative to GDP, Federal spending for R&D was at a high level in the early 1960s, after the Sputnik launch provoked a wave of concern that the United States was lagging behind the Soviet Union technologically. But that ratio trended down during most of the 1960s and 1970s and has been more or less flat since the late

Chart 3-6 Expenditures for Research and Development Relative to GDP

Total R&D expenditures have been fairly steady over the past three decades, but the share financed by private industry has risen since 1980.

Percent



Note: "Other" includes R&D funded by universities and other nonprofit organizations. Observations after 1990 are not strictly comparable with those of earlier years, due to a change in the survey methodology.  
Sources: Council of Economic Advisers and the National Science Foundation.

1970s. In contrast, industry-funded R&D investment has been noticeably greater relative to GDP during the 1980s and early 1990s than during the 1960s and 1970s. Indeed, since 1980 the private sector has sponsored more R&D than has the Federal Government.

According to BLS estimates, investment in R&D contributed about 0.2 percentage point to the growth of productivity between 1963 and 1992, with essentially no difference before and after 1972 (Chart 3-5). In all likelihood, however, R&D has played a more important role than these estimates would indicate, for a number of reasons. First, given the difficulties involved in measuring the return to investment in R&D, part of it probably shows up in the unexplained residual (see below). Second, because it is very difficult for anyone investing in R&D to capture all of the benefits of that investment, part of the return to American investment in R&D probably is captured by foreign producers. (Similarly, American producers probably capture some of the benefits of R&D investment undertaken by foreign firms.) Finally, some investment in R&D has had important benefits in addition to whatever improvement in the measured growth of productivity it may have yielded. For example, medical research (which claims 18 percent of total U.S. R&D) has substantial payoffs, but it is highly unlikely that these payoffs are fully reflected in the statistics on output per hour.

## THE RESIDUAL

Over the postwar period, increases in human and physical capital and investment in R&D fail to account for all of the measured growth in productivity. The remainder generally is presumed to reflect unmeasured improvements in the quality of the capital stock and the work force, as well as more efficient utilization of capital and labor in the production process. Available data suggest that this unexplained residual contributed about 0.5 percentage point per year to the growth of productivity between 1963 and 1992.

The nature of this residual has puzzled economists for 40 years and has stimulated a vast literature seeking to explain it and to understand the dramatic difference in its behavior before and after 1972. Between 1963 and 1972 the residual contributed about 1.5 percentage points per year to the growth of productivity. Between 1972 and 1992, however, the residual made no contribution at all (Chart 3–5).

Two possible explanations as to the source of the residual follow from the previous discussion. The data from the BLS do not quantify the effect of either on-the-job training or investment in infrastructure, so any contributions of those two factors end up in the residual. In addition, industries evolve in ways that increase productivity, and the contributions of these evolutions are not captured in existing measures of capital, labor, or R&D investment. For example, the shift from small food stores to supermarkets gave a substantial boost to productivity in food retailing in the United States in the 1950s and 1960s. Similarly, many American companies have improved their business systems, and the contributions of these improvements are likewise not captured in the official statistics except, by default, in the residual. For example, the redesign of production processes within the manufacturing sector (such as lean manufacturing of automobiles) and the redesign of products to make them easier to assemble have been sources of productivity growth.

Some observers have argued that an increasing burden of government regulation may account for part of the reduction in the contribution of the residual during the 1970s. Since the late 1970s, however, a number of important industries—including trucking, airlines, and rail—have been deregulated. In addition, competition has been introduced into the market for long-distance telephone services. These factors suggest that any role of regulatory burden in the post-1972 productivity slowdown probably has not been large.

Another commonly mentioned explanation for the reduction in the contribution of the residual to productivity growth is the rise in energy prices during the 1970s. According to this logic, efforts to reduce energy consumption reduced measured productivity

growth. This explanation is not very convincing, however, because energy costs do not bulk large in total costs, and because productivity growth has not revived despite the reversal of most of the 1970s runup in real oil prices.

Finally, it is possible that part of the slowdown in *measured* productivity growth is not real but reflects measurement error. This could be the case if, for example, measurement error has caused the official statistics to understate productivity growth by more since 1972 than before. Even if measurement error does not help explain why productivity growth has been slower since 1972 than before, it may help explain why it has been so slow in absolute terms. A later section of this chapter examines the extent to which the productivity problem might reflect faulty measurement.

## HAS THE TREND IN PRODUCTIVITY GROWTH IMPROVED RECENTLY?

Since 1987, according to current estimates, productivity growth in the private nonfarm business sector has averaged 1.2 percent per year, somewhat faster than the average during the previous decade. And since 1991, productivity growth has averaged about 2.0 percent per year—more than twice the 1978–87 average. Are recent claims of a pickup in trend productivity growth justified? (Provided there has been no offsetting reduction in the growth of hours, such a pickup would translate into an increase in the economy's potential growth rate.) This question is not easily resolved because the recent behavior of productivity has been heavily influenced (for the better) by the faster pace of economic activity during the last 2 years. A proper assessment of the trend in productivity growth can be made only by abstracting from cyclical influences.

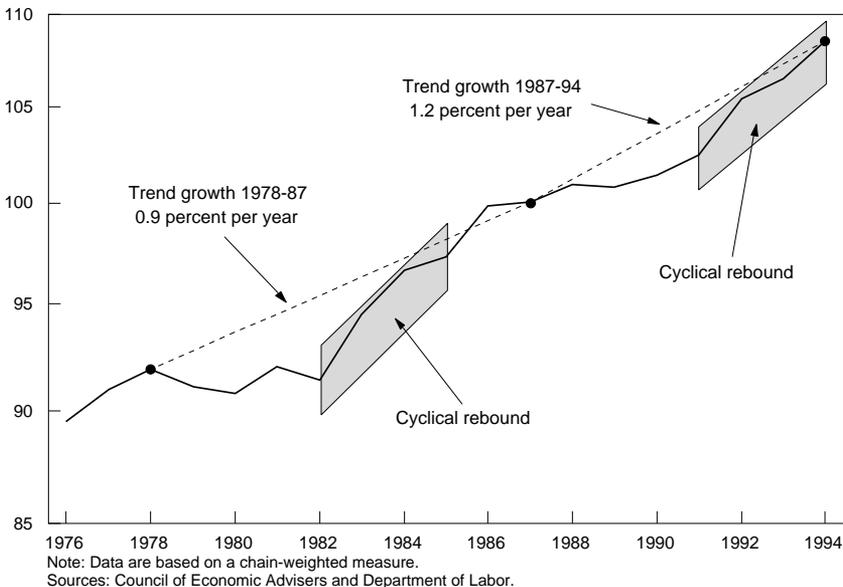
Chart 3–7 focuses on the behavior of productivity since 1976. Between 1978 and 1982—a period that included the deepest recession of the postwar period—productivity actually declined slightly according to official estimates. Then, as recovery took hold, productivity rebounded. By 1987 the economy once again was operating in the neighborhood of its full potential. Between 1978 and 1987 the growth of productivity averaged about 0.9 percent per year.

Since 1987 this chain of events has essentially repeated itself: a period of slow growth in productivity as the economy endured a recession, followed by a period of rebound as the recovery gathered strength. Today, well into the expansion, the economy once again appears to be operating in the neighborhood of its potential. Between 1987 and 1994—as was noted above—productivity growth averaged about 1.2 percent per year. Thus, currently available data do seem to hint that the trend in productivity growth has picked up in the last few years. However, the magnitude of that pickup

### Chart 3-7 Output per Hour in the Private Nonfarm Business Sector

Productivity has increased rapidly since 1991. Nonetheless, it is still difficult to know whether there has been an improvement in the trend rate of productivity growth.

Index, 1987 = 100 (ratio scale)



pales in comparison to the decline that occurred earlier in the post-war period. Moreover, the evidence in support of a pickup is still inconclusive. For example, if trends are computed for the periods 1978–86 and 1986–94 rather than 1978–87 and 1987–94, the suggestion of a pickup is much weaker: productivity growth averaged 1.0 percent per year in the earlier alternative subperiod and 1.1 percent in the later one. On the other hand, if the breakpoint chosen is 1988 or, especially, 1989, the evidence in favor of a pickup appears stronger. However, the averages over these later periods, especially the one since 1989, are dominated by the cyclical recovery and so may create a false impression of an improvement in the trend.

Furthermore, the Labor Department released data in 1994 suggesting that the growth of hours worked between 1993 and 1994 may be revised upward by enough to shave 0.1 percentage point off the average rate of productivity increase for the period 1987–94. Thus, while the evidence in favor of a slight improvement in the productivity growth trend is encouraging, it is not yet decisive. The experience of the next few years will be quite telling for this issue.

## ISSUES RELATED TO THE MEASUREMENT OF PRODUCTIVITY

To many in the business community, the idea that there has been a slowdown in the rate of improvement of business efficiency would simply be implausible. International comparisons based on detailed case studies suggest that the level of productivity is higher in the United States than in Germany or Japan and that many important innovations—especially in the services sector—have originated in the United States.

Examples of such innovations abound. Retailers have invested heavily in information technology to improve efficiency and the quality of service. New specialty formats provide customers with a wider array of choices. Financial institutions have simultaneously improved their efficiency and expanded their product lines dramatically. Mortgages are now processed much more quickly and in much greater volume. Customer service has been enhanced by the widespread introduction of automatic teller machines as well as automatic deposit and withdrawal services. The mutual fund industry now provides individual investors with diversification possibilities that would have been barely conceivable 30 years ago. In the field of medicine, with the introduction of microsurgical techniques, a cataract operation performed today is faster and safer than one performed even a decade ago. And with the advent of arthroscopic surgery, repair of a torn knee ligament involves a shorter stay in the hospital, less chance of collateral damage during surgery, and a faster recovery time. Telecommunications companies have introduced many new services, including high-speed data transfer and mobile cellular telephone service.

To some extent, these dramatic changes in service industries are not reflected in the productivity data presented in this chapter. Either they do not enter the standard productivity calculations at all, or their contribution to growth is understated. For example, within the financial services area, productivity growth in the banking industry has averaged more than 2 percent per year in recent years, according to BLS estimates. However, these estimates are not used in the construction of aggregate measures of output and productivity. Instead, for these measures, growth of real output in banking and other financial services is assumed equal to the increase in hours worked in the industry, so that growth in labor productivity is roughly zero by assumption.

Measurement issues are particularly important in the area of health care, both because that sector now accounts for 14 percent of GDP and because the conceptual difficulties there are so great. For example, current productivity measures would not reflect the influence of a technological advance that allowed a gallbladder pa-

tient to be treated and to recover in a much shorter time than before. As for telecommunications, productivity data understate the benefit to consumers of newly available services.

These examples reflect underlying problems in productivity measurement associated with the changing character of the economy. But there are also other general problems in measuring productivity. Roughly speaking, official measures of average labor productivity are calculated by dividing the nominal output of a given sector (e.g., the private nonfarm business sector or the manufacturing sector) by an estimated price index and a measure of hours worked. The trends in all three of these variables are subject to measurement error.

In concept, the task of measuring nominal output is straightforward: one need only calculate the current dollar value of total production of “final” goods and services—that is, goods and services that are used for either consumption or investment at home or abroad, by either individuals, businesses, or governments. In practice, however, the task is challenging. One important set of difficulties involves the definition of investment goods. Traditionally, investment goods have been defined as tangible assets, such as factories or drill presses, that have a useful lifetime of more than 1 year. As a result, intangibles such as computer software and research and development have for the most part been treated as intermediate goods and services—that is, as inputs into the production process—and therefore not as part of final demand.

Recently, however, a number of observers have suggested that the traditional definition of an investment good should be expanded to include business expenditures for computer software. A move in this direction would raise the measured level of GDP and hence would also raise the measured level of productivity. Moreover, to the extent that business expenditures for computer software have been growing more rapidly than the economy as a whole, such a redefinition would also raise the *rate of growth* of both output and productivity. Finally, such a redefinition would temper the apparent slowdown in productivity growth since 1972, assuming that, as seems likely, the growth of software production has been more rapid since 1972 than before. Box 3–4 discusses issues related to treatment of software as an investment good in the national income and product accounts (NIPAs).

Measurement of prices is *the* critical problem in the measurement of productivity. The output of the economy increasingly is shifting away from standardized commodities with easily definable characteristics that change little over time, toward goods and services for which issues of quality and even definition are of primary importance. And if the trend in prices is mismeasured, so will be the trend in output and hence productivity. As an illustration of

**Box 3-4.—Business Expenditures for Computer Software in the National Income and Product Accounts**

Much of computer software is treated as an intermediate good in the national income and product accounts rather than as an investment good. (Software that is sold with computer hardware as part of a package is, however, included in the current NIPA measure of investment if the machine itself is so treated.) In part, the current treatment of software reflects a presumption that much computer software has a useful lifetime of less than 1 year, and thus does not qualify as an investment good under current definitions. In part, however, it also reflects a lack of information; many companies probably do not themselves know how much they spend on computer software, and the Department of Commerce certainly does not know, because none of its ongoing surveys requests this information.

If computer software were to be included in the national income accounts as an investment good, estimates would have to be developed not only of nominal outlays for computer software, but also of a quality-adjusted price of software. To estimate such prices, analysts would have to determine, for example, how much more “word processing power” was provided in a new release of a word processing package than in the one it superseded.

It is difficult to know how much the treatment of computer software as an intermediate good affects the overall productivity picture. But because the volume of software purchases is vastly greater today than it was three decades ago, it may help explain part of the productivity puzzle. The case of computer software also illustrates some of the serious conceptual difficulties involved in improving current measures of productivity.

the difficulties involved in measuring prices, consider the increased prominence of discount outlets in the retail sector. In constructing the consumer price index, government statisticians treat goods sold at discount retailers as distinct from similar or identical goods sold through traditional outlets. When a discount retailer adds to its product line an item already being sold by traditional retailers, but offers it at a lower price, the difference between the discounter's and the full-service merchant's price is treated as signaling a difference in the quality of a total package: item for sale, service provided, and possibly other consumer amenities. Hence, the lower price suddenly available at the discounter is considered not to imply a reduction in the cost of living, and it is not allowed to drive the index down. But while it may be true that discounters provide

less attentive or complete service and a less enjoyable overall shopping experience than their full-price counterparts, it is also plausible that part of the difference in initial price reflects operating efficiencies and hence does represent a true reduction in the cost of living; if so, it would argue for taking at least partial account of the discounter's initial prices in computing the index.

Even measurement of hours worked is more difficult than one might imagine. Estimates based on surveys of employers and households show different trends. In part this divergence may indicate that employers have a relatively poor idea of how many unpaid overtime hours their employees are working at home. For their part, workers have been shown to overstate hours worked on average.

It is easy to point to deficiencies of existing elements of the measurement system—deficiencies that could be alleviated by a reallocation of resources for data collection and analysis—but it is much harder to pinpoint the quantitative significance of such deficiencies. The Bureau of Labor Statistics has been in the forefront of research into methodological improvements in both price and productivity data and, indeed, has implemented many improvements in both types of data in recent years.

What are the implications of possible measurement errors? First, they are likely to provide at least a partial explanation for why the measured growth of productivity has been slow in recent years. Second, as was noted earlier, they help explain the post-1972 slowdown in productivity growth to the extent that they have been more severe since 1972 than before. Although the magnitudes involved are not known with any precision, it is likely that error-contaminated data understate the economy's productivity growth rate and hence its capacity growth rate.

## FACTORS GENERATING GROWTH OF HOURS WORKED

In addition to increases in output per hour worked, the other source of growth in the productive capacity of the economy is increases in the total number of hours worked. Of course, the implications of increases in work hours for the economic well-being of the American people are not the same as the implications of increases in productivity, because increases in hours worked impose some cost in terms of time no longer available for other activities.

Growth in hours worked can come from four main sources: growth in the number of hours worked each week by the average employed worker; growth in the fraction of the labor force that is employed; growth in the fraction of the working-age population that is in the labor force; and growth in the size of the working-

age population. Chart 3-8 summarizes the behavior of each of these factors since 1963.

According to the Department of Labor, the number of hours worked per week on the average job in the nonfarm business sector declined from just over 38 hours per week in the mid-1960s to about 34 hours in the early 1980s. Since then it has been about flat (Chart 3-9). (The nonfarm business sector differs from the *private* nonfarm business sector in that it includes government enterprises such as the U.S. Postal Service.) On net, the decline in the average workweek has taken about 0.4 percentage point off the growth of aggregate hours worked since 1963—a bit more between 1963 and 1972, and a bit less since 1972 (Chart 3-8).

Changes in the employment rate have contributed essentially nothing to the trend growth in hours over any of the periods shown in Chart 3-8. This outcome reflects two facts. First, the years 1963, 1972, and 1994 were chosen as endpoints precisely because the employment rate was near its so-called full-employment level in those years. Second, the full-employment level of the employment rate has not changed greatly over the periods examined here.

One of the most striking macroeconomic developments of the postwar period has been the convergence in the labor force participation rates of men and women (Chart 3-10). Thirty years ago fewer than 40 percent of working-age women were in the labor force; today that fraction stands at nearly 60 percent. The largest increases in labor force activity took place among younger women, but substantial gains were also registered by women in their forties and fifties. The trend among men has been in the opposite direction. In 1960 more than 83 percent of working-age men were in the labor force, but by the early 1990s that fraction had dropped below 76 percent. The reduction in the labor force participation of men was particularly pronounced among older workers.

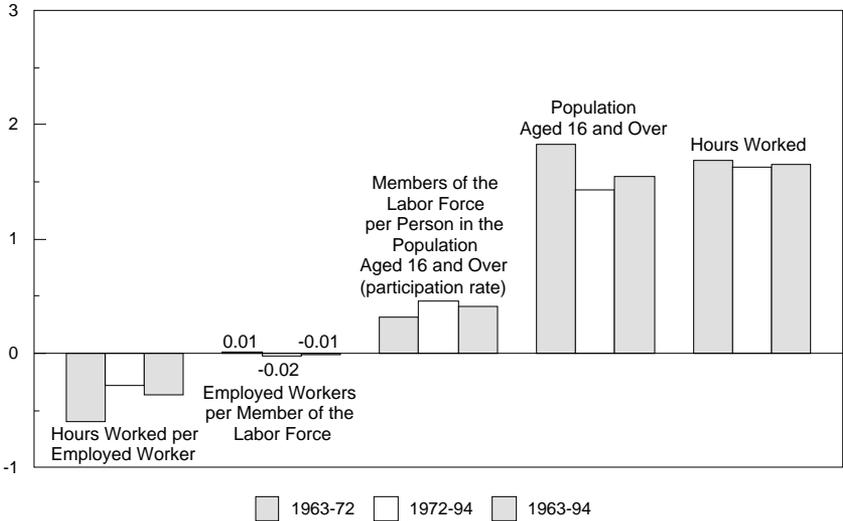
On balance, the influx of women into the labor force was the more important of the two gender-related trends, and the aggregate participation rate displayed a marked upward drift over the last 35 years, contributing about 0.4 percentage point per year to the growth of hours. The contribution of the participation rate to the growth of hours has been a shade greater since 1972 than before.

Since 1989, however, the growth in labor force participation has been unusually slow. In fact, the average participation rate in 1993 was below the average rate in 1989. The average rate did move up noticeably in 1994, but it is still too early to know whether the upward trend in this variable has resumed. Moreover, the interpretation of the participation data for 1994 has been made more problematic by the introduction in January 1994 of the redesigned Current Population Survey (the Labor Department survey that is one of the key sources of monthly data on the labor market). Data col-

**Chart 3-8 Factors Generating Growth of Hours Worked**

Overwhelmingly, the increase in aggregate hours worked since 1963 reflects the increase in the working-age population.

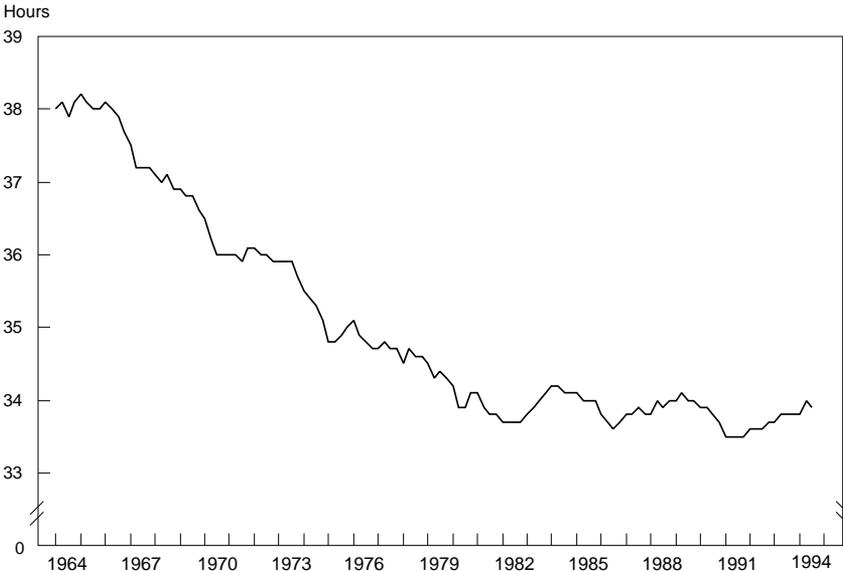
Average annual percent change



Note: Data on hours worked, total and per worker, pertain to the private nonfarm business sector, whereas data on the employment rate, participation rate, and population pertain to the whole economy.  
Sources: Council of Economic Advisers and Department of Labor.

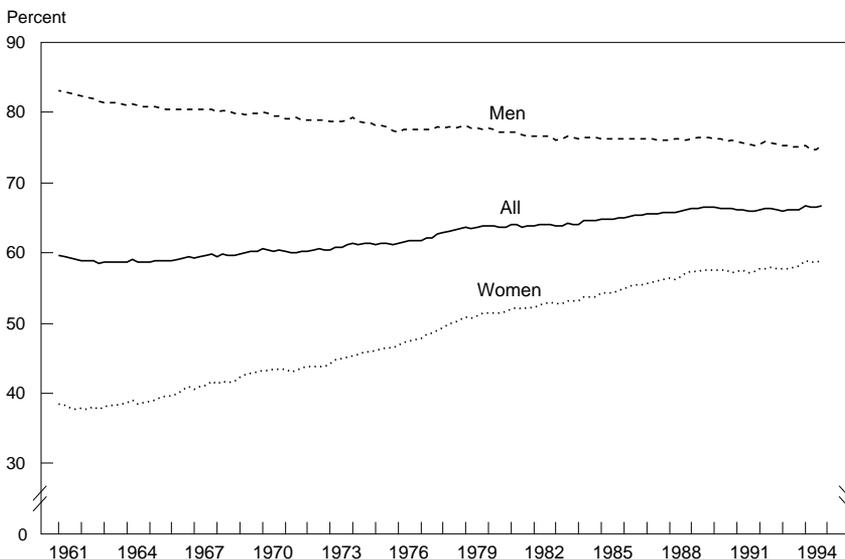
**Chart 3-9 Average Weekly Hours in the Nonfarm Business Sector**

The length of the average workweek trended downward from the early 1960s until the early 1980s. Since then it has been about flat.



Source: Department of Labor, unpublished data.

**Chart 3-10 Civilian Labor Force Participation Rates for Men and Women**  
 The participation rates of men and women have converged over the past three decades.



Note: Data for 1994 come from the redesigned Current Population Survey.  
 Source: Department of Labor.

lected over the next few years should help resolve whether the pause in the increase in the participation rate between 1989 and 1993 was a temporary aberration or a signal of a new, permanent state of affairs.

Between 1963 and 1972 growth of the working-age population averaged nearly 1.8 percent per year. By contrast, since 1972 this growth has averaged 1.4 percent per year, and since 1982 only about 1.1 percent per year.

Since 1963, aggregate hours worked in the private nonfarm business sector have increased at an average pace of about 1¾ percent per year, with little difference in the growth rate before and after 1972. By happenstance, the slower rate of decline in the workweek after 1972 and the slight step-up in the rate of change of the participation rate (both pluses for the growth of hours) were about offset by the slower growth in the working-age population.

## WHAT CAN THE GOVERNMENT DO TO IMPROVE THE ECONOMY'S LONG-RUN GROWTH POTENTIAL?

Without a doubt, the future rate of increase in the economy's productive capacity will be largely determined by the decisions of the millions of individual businesses and households in the private

economy. The role of the government is, and will continue to be, a limited one: to foster an open and competitive market environment, and to help the market work better when it would otherwise generate an inefficient result.

Government policies to advance these objectives generally fall into two broad categories. First, government must address the question of national saving. Historically, nations that have saved the most have also invested the most, and investment has been strongly correlated with productivity. Therefore, it is a matter of considerable concern that the national saving rate in the United States is low by international standards and has declined in the last 20 years. Second, government must address market failures. Depending on the context, pursuit of the second objective may require the government to strengthen market forces already in place (as, for example, when it subsidizes student loans or provides support for worker training and skill acquisition); to impose regulation (as, for example, when it takes actions to curb excessive market power or to protect the environment); to enhance competition (as, for example, when it reduces barriers to international trade); or to provide public goods (as, for example, when it funds R&D). The need for public goods arises especially in situations in which private market incentives on their own would result in less than the optimal amount of investment being undertaken because the returns from that investment are not fully appropriable by the private investor. Investment in basic research is a case in point. It should go without saying that government policies to address market failures should be designed to achieve their objective while imposing the lightest possible burden on the economy. (Chapter 4 discusses this point further.)

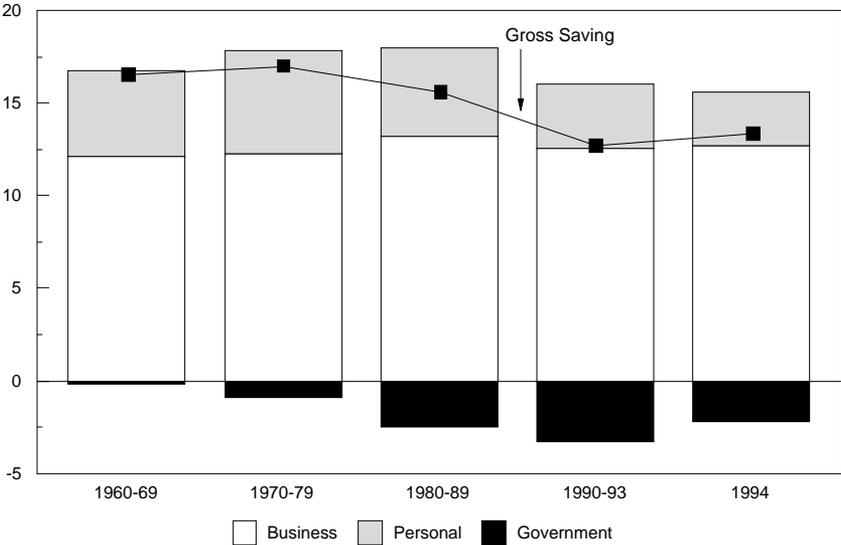
## BOOSTING PRODUCTIVITY BY INCREASING DOMESTIC SAVING

During the 1960s and 1970s gross saving in the United States averaged about 17 percent of GDP. As Chart 3–11 shows, gross saving declined markedly thereafter, averaging roughly 15½ percent during the 1980s and only about 12½ percent between 1990 and 1993 (fiscal-year basis). In part this decline reflected the deteriorating fiscal position of the government sector (defined to include all levels of government—Federal, State, and local). Measured on a national income accounts basis and averaged over fiscal years, the deficit of the government sector was only 0.2 percent of GDP during the 1960s and about 1 percent during the 1970s. But during the 1980s the average deficit widened to 2½ percent of GDP, owing entirely to a dramatic increase in the Federal deficit. And the average between 1990 and 1993 was even a bit worse because of a decline in the surplus of State and local governments.

### Chart 3-11 Components of Gross Saving

Gross saving has declined since the 1970s, partly because the personal saving rate has declined and partly because the public sector has run much larger deficits.

Percent of GDP



Note: Data are calculated on a fiscal year basis.  
Source: Department of Commerce.

Personal saving has also declined, from about 4½ percent of GDP during the 1960s and 5½ percent in the 1970s to only 3½ percent during the early 1990s. Meanwhile, the trend in business saving—which accounts for the bulk of gross saving—has been remarkably flat since the 1960s.

In fiscal 1994, gross saving, private and public, reversed course and edged up to nearly 13½ percent. The main cause of this development was a considerable reduction in the deficit of the consolidated government sector, almost exclusively the result of a sharp improvement at the Federal level: measured on a national income accounts basis, the Federal deficit in fiscal 1994 (the first year in which this Administration's budget plan was in effect) declined to 2.6 percent of GDP, a full 1.5-percentage-point reduction from the preceding year.

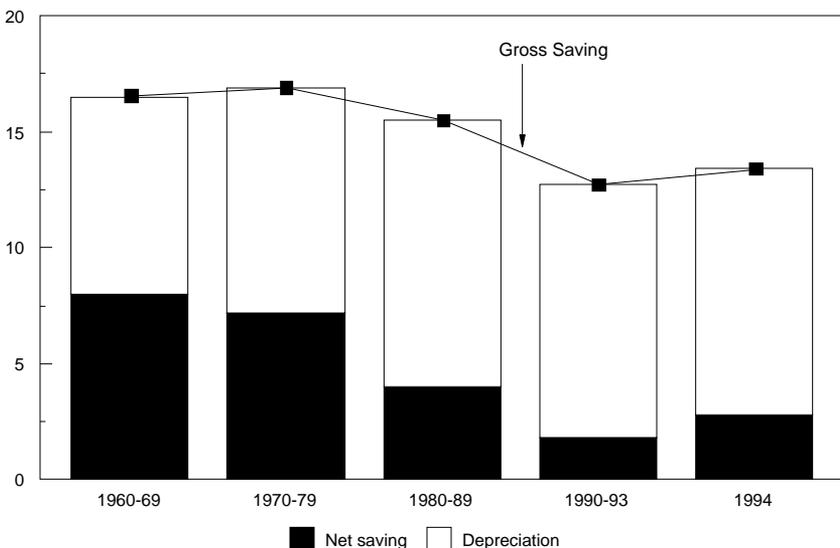
Gross saving serves as a good measure of the Nation's saving effort, but saving net of depreciation may be a more meaningful measure of the domestic resources available for increasing the capital stock. Unfortunately, the trend in net saving has been even more disturbing. As Chart 3-12 reveals, the decline in net saving—from an average of 8 percent of GDP in the 1960s to an average of 2 percent of GDP between 1990 and 1993—has been even steeper than the decline in gross saving. Net saving increased in 1994, and it is in this light that the reduction in the Federal deficit is

especially significant: the fiscal consolidation at the Federal level accounts for *all* of the improvement in the Nation's net saving rate in 1994 over the average for the early 1990s.

Chart 3-12 **Gross Saving, Depreciation, and Net Saving**

Since the 1960s, net saving has fallen more sharply than gross saving, in part because of a shift in investment toward more rapidly depreciating equipment.

Percent of GDP



Note: Data are calculated on a fiscal year basis.

Source: Department of Commerce.

In theory, domestic investment need not be tightly linked to domestic saving, and a country that succeeds in boosting domestic saving may not be rewarded with an increase in domestic investment. In that event, however, it would be rewarded with a reduction in its current account deficit (roughly speaking, its balance of trade in goods and services with other countries). In the case of the United States, either outcome—an increase in investment or a reduction in the current account deficit—would be a desirable result of an increase in the domestic saving rate.

In this light it is relevant to ask what the government can do to stimulate the rate of gross saving. Fundamentally, two approaches are possible: one is to boost public saving (that is, cut the deficit of the government sector), and the other is to stimulate private saving.

### *Increasing Public Saving*

As has been documented in Chapters 1 and 2, this Administration has made a very substantial contribution toward the reduction of the Federal deficit (Chart 2-9 in Chapter 2). Even so, the longer term outlook for the deficit remains troublesome, owing in part to

the projected shift in demographics, as the baby-boom generation moves into retirement and begins collecting Social Security and Medicare benefits. This aspect of the long-term outlook suggests that, despite the progress achieved under the Omnibus Budget Reconciliation Act of 1993 and the additional deficit reduction proposed in the Administration's 1996 budget package, more work remains to be done to put the budget on a secure footing for the long term and hence to ensure a healthy national saving rate.

### *Increasing Private Saving*

The Federal Government has often sought to increase national saving by inducing the private sector to save more. The evidence on the effectiveness of such efforts is mixed.

Many of these attempts have focused on increasing the after-tax rate of return to the owner of a particular type of asset. For example, individual retirement accounts (IRAs) increase the rate of return on saving by allowing tax-free accumulation of funds held in qualified accounts, from which the funds cannot be withdrawn without penalty until the owner reaches the age of 59½. The Administration has proposed an expansion of IRAs, to allow tax-deductible contributions by all couples with incomes below \$100,000 (and individuals with incomes below \$70,000), and to allow penalty-free withdrawals before age 59½ for the purpose of purchasing a first home, paying for postsecondary education, defraying large medical expenses, and covering long-term unemployment expenses. Chapter 1 discusses this initiative in greater detail.

## **BOOSTING PRODUCTIVITY BY HELPING MARKETS WORK BETTER**

Aside from increasing domestic saving, a government can increase the productivity of its citizens by improving the quality of the labor force, increasing the quantity and improving the quality of the available capital stock, promoting the development of new technology, and fostering a free market characterized by vigorous competition.

### *Improving the Skills of the Work Force*

The Federal Government has an important role to play in improving the quality of labor. Individual workers have an incentive to acquire productive skills on their own, without government involvement, if for no other reason than that better skills usually mean higher earnings. As is discussed in Chapter 5, however, individuals and organizations left to themselves are likely to underinvest in skill acquisition. To help overcome this problem, the Administration has devised a comprehensive set of education policies centered on the theme of lifelong learning. Together these policies are aimed at ensuring that students enter school ready to

learn (thanks to Head Start and other programs); that schools work as effectively as possible in helping students to live up to their potential (through the Goals 2000 program); that students make a smooth and well-planned transition from high school to a job or further training (through the School-to-Work program); and that workers are given an opportunity to upgrade their skills (for example, with the help of a tax deduction for postsecondary training or through a grant for retraining in the event of unemployment). Each of these initiatives is described in detail in Chapter 5.

### *Increasing Investment in Technology*

Firms that invest in technology often are unable to capture all of the benefits of their investment. That is, there appear to be important spillovers or “positive externalities” from such investment, in the form of benefits captured by other firms without compensation to the firm making the investment. These externalities imply that the social return to investment in R&D is higher than the private return, and that a private market left to its own devices would invest too little. As a result, government has an important complementary role to play, either in sponsoring research itself or in subsidizing private-sector research, or both.

Increasing investment in research and development is one way to promote technological innovation and productivity growth, because well-directed R&D spending has a very high growth payoff per dollar. Indeed, estimated social rates of return to R&D average around 50 percent—much higher than the average estimated private rate of return of 20 to 30 percent. (Box 3–5 discusses empirical evidence on average rates of return on R&D investment.)

For this reason the Administration has supported extending the research and experimentation (R&E) tax credit. (Box 3–6 examines the R&E tax credit in more detail.) The Administration is also increasing funding for government-industry research partnerships and is working to restore a 50–50 balance between the military and civilian components of its technology investment. (The defense share of Federal R&D spending has already fallen from 69 percent in the government’s fiscal year 1986 to a projected 55 percent in fiscal 1995.) In addition, the Administration is working to focus a larger portion of the Federal R&D effort on so-called dual-use technologies (those with both military and civilian applications). Other Administration research initiatives reflect a strong continuing commitment to basic science, to the creation of improved information and transportation infrastructure, and to the development of technology in pursuit of other national goals, such as environmental protection and world-class manufacturing. These initiatives and others are designed to speed the pace at which new technological ideas are discovered and disseminated in the private sector. Chap-

### **Box 3-5.—Research and Development Pays Off**

Investment in R&D appears on average to have an impressive payoff. One recent study concluded that the private rate of return—that is, the return to the firm performing the R&D—averages perhaps 20 to 30 percent. For comparison, the average rate of return to investment in the business sector as a whole is thought to be in the neighborhood of 10 percent.

Estimated rates of return in R&D to society as a whole are even higher, thanks to the spillovers described in the text. For specific innovations, estimates of the returns have ranged as high as 423 percent in the admittedly atypical case of optical fiber. In a wide range of areas, however, case study evidence points to rates of return of between 30 percent and 80 percent.

By choosing particular technologies for study, case study research runs the risk of choosing only “winners” (that is, R&D investments that have paid off handsomely), thus biasing the results upward. But the case study evidence has been widely corroborated by industry-level studies. By estimating the industry-wide returns to R&D carried out within the industry itself and within related industries, these studies have provided additional evidence that social rates of return greatly exceed private returns. On the basis of such evidence, a recent survey concluded that, with spillovers taken into account, the returns to R&D average perhaps 50 percent.

Typically, we might expect such high returns to encourage firms to spend more on R&D, driving down the rate of return until it equals the return to other activities. Why have returns remained so high? In the case of private returns, one probable explanation is that investing in R&D is risky. For every idea that yields a high payoff there may be dozens of “losers” into which a firm sinks resources in vain. If the firm were unconcerned about risk—for example, if it were able to farm out its risk by selling shares of its R&D activities to mutual funds—the variability of returns would not matter. But in practice, because of the problems of communicating the quality of a potential innovation to investors, the firm is likely to have to shoulder some of the risk itself. As a result, unless it is large enough to withstand the resulting variability of returns without difficulty, the firm will probably require a higher return as compensation for the greater risk.

ter 4 provides more details on the Administration's reorientation of Federal R&D policy in light of the end of the cold war.

**Box 3-6.—The Research and Experimentation Tax Credit**

The research and experimentation tax credit is a Federal tax subsidy available to firms engaging in certain research activities. To address concerns that the subsidy be focused as narrowly as possible on research that otherwise would not have taken place, the credit is made available only on the increment of domestic research expenditures over a threshold amount.

The incremental nature of the credit means that some tax-paying firms (those with total research spending below the threshold) will not receive a subsidy for their research activities, worthwhile though they may be. The Congress recognized this concern but believed that an incremental credit was a more efficient subsidy mechanism than one that subsidized all research spending—in other words, that an incremental credit could achieve most of the benefit provided by a flat (nonincremental) credit at a lower budgetary cost.

Empirical research on the effectiveness of the R&E credit has yielded mixed results. Many of the early studies found that the credit was not very effective: an additional dollar of Federal tax subsidy was estimated to generate less than a dollar of additional research. However, the credit was substantially restructured in 1989, and more recent studies have indicated that the R&E credit is more cost-effective than previously thought.

The spillovers from both basic research and more applications-oriented activities cross national boundaries. In recent decades such transnational spillovers have probably been magnified by the revolution in communications, which allows news about innovations to be transmitted instantaneously around the world. Importantly, the existence of these spillovers suggests that the *global* return on R&D investment exceeds the *national* return. As a result, even national governments, acting on their own, will tend to sponsor too little basic research and applied R&D. If this analysis is correct, there may be a role for international coordination in support of such research. By instituting a formal mechanism for sharing research costs, such coordination could reduce the incentive of each country to free-ride on innovations financed by others.

*Working to Reduce Trade Barriers*

Barriers to international trade inhibit the efficient allocation of production across industries and countries and lower the real pur-

chasing power of consumers. Trade barriers at home permit inefficient industries to continue using labor and capital resources that could be used more productively in other sectors. And trade barriers abroad limit the access of our efficient industries to foreign markets. One of the most beneficial aspects of an open world trading environment is that it exposes businesses all over the globe to greater competition, and forces firms and industries either to improve their efficiency or to free up their productive resources (labor and capital) for use elsewhere in the economy. Box 3–7 describes a recently developed theory suggesting that traditional analyses have been far too *conservative* in their conclusions regarding the costs of protectionism.

### **Box 3–7.—A New Analysis of the Costs of Protectionism**

Traditionally, in extolling the virtues of free trade and warning against excessive tariff protection, economists have focused on trade-induced efficiency gains of the type discussed in the text. But estimates of the costs of protectionism obtained from traditional economic models have typically turned out to be quite small. The inefficiencies caused by a 20-percent tariff, in one such analysis, turn out to cost the economy perhaps 4 percent of national income—hardly trivial, but far too little to explain why highly protected developing economies have often remained very poor. This finding has become more puzzling over the past decade or two, as mainstream opinion in development economics has swung firmly toward the view that integration in the world trading system has been critical to the success of the fastest growing developing nations.

Recent research has suggested one possible solution to this puzzle. If international trade barriers prevent new goods and technologies from being introduced into an economy, rather than simply raising the cost of goods that are currently available, then the cost of protection may be much higher. In one simple new-goods model, for example, a 20-percent tariff exacts costs equal to an astounding 39 percent of income—nearly 10 times as much as in the standard model. No highly abstract model is likely to give definitive estimates of the costs of protectionism, of course, and models with different assumptions yield very different results. Nevertheless, the new research does suggest a way to bring theory more closely into line with experience.

In light of the significant long-run benefits accruing to the economy from the pursuit of open markets, the Administration strongly supports the creation of a world trade and investment environment

free of international barriers and has made historic progress toward that objective. After securing the ratification of the North American Free Trade Agreement (NAFTA) in 1993, the Administration scored several major achievements on the trade front in 1994. Most important was the signing of the Uruguay Round agreement of the General Agreement on Tariffs and Trade and its subsequent congressional approval. The Administration also made strides toward achieving freer trade and investment flows within Asia and Latin America. Chapter 6 describes at greater length the accomplishments of the Administration on the trade front.

Although removal of trade barriers leads in the long run to an improvement in the standard of living in all countries that participate, it can involve significant costs in the short run for some industries and some workers. For example, the transition to a new job from one lost because of trade liberalization can be difficult and may require significant retraining for the new job and even relocation. However, part of society's overall income gain from the move to freer trade can be used to reduce the cost of dislocation borne by individual workers. To ease the transition of workers affected by the implementation of NAFTA, as well as of other displaced workers, the Administration has introduced a number of innovative programs focusing on worker retraining. These programs are described in Chapters 5 and 6.

### *Improving the Efficiency of Regulation*

Government regulation plays a central role in shaping the competitive environment in which firms operate. In many cases an improvement in regulation can simultaneously promote the more effective attainment of policy objectives and increase the efficiency of the economy. For example, a traditional approach to the problem of reducing emissions of sulfur dioxide (a major cause of acid rain) might have entailed mandatory investment in costly new pollution reduction equipment by all emitters. Instead, a market-oriented system, based on tradable emissions allowances, is achieving the same results while allowing the efficient allocation of the task of reducing pollution across emitters. Chapter 4 addresses in much greater detail the important contribution of efficient regulation to overall productivity.

## CONCLUSION: PROSPECTS FOR GROWTH

In sum, the preponderance of the available empirical evidence supports the conventional wisdom that the economy's productive capacity is expanding at roughly a 2½-percent annual rate. Growth in the productivity of American workers appears to have picked up slightly in recent years, to about 1¼ percent per year, measured on a chain-weighted basis (this is roughly equivalent to 1½ percent

on the more usual fixed-weight basis). However, trend growth in the aggregate number of hours worked in the economy probably will be somewhat slower than it has been during the past decade or two, owing largely to a decline in the rate of growth of the working-age population. On balance, the sustainable rate of growth of the economy's potential appears to be nearly the same as it has been over the past two decades, with the increase in the trend growth of productivity offsetting part of the decline in the population growth rate.

The Administration's economic projection for the next 5 years reflects this analysis. Thus, among other factors, the projection reflects a cautious assessment of the beneficial effects of Administration policies to enhance the Nation's productive capacity and to foster more rapid growth of productivity. The projection also places the Administration squarely within a broader consensus about the longer term outlook for the economy. The Administration has attempted to adopt a balanced assessment of the outlook, grounded in rigorous analysis and consistent with recent experience. Although some observers maintain that the economy can grow much more rapidly on a sustained basis, currently there is no convincing empirical evidence to support such claims.

To illustrate the difficulty of improving the trend in the growth of the Nation's productive capacity, consider the following example. Suppose that a particular set of policies were to result in an immediate and permanent increase in the investment rate of 1 percentage point of GDP. Given that investment now constitutes about 14 percent of GDP, this would be an impressive accomplishment indeed. Under plausible assumptions, a standard approach to modeling the long-term growth of the economy suggests that such an increase in investment would boost the average annual *rate of growth* of potential GDP only by about 0.2 percentage point per year for the first 10 years. Thereafter the growth effects would diminish, fading eventually to nothing—but leaving the *level* of potential GDP an estimated 3½ percent higher than it would have been without the investment push.

The analysis in this chapter also indicates that currently available official statistics probably understate the true rate of growth of productivity, and hence the rate of expansion of the Nation's productive capacity. Furthermore, to the extent that problems of measurement have become more acute during the last two decades (as might be suggested by the shift in the economy toward the services sector, where measurement is particularly difficult), the slowdown in the trend rate of productivity growth during the mid-1970s apparent in the official data is probably overstated.

Clearly, a full understanding of the scope and magnitude of measurement error is important for the proper design and conduct

of economic policy. In particular, measurement error may cause official statistics to understate the performance of the American business sector, both relative to its international competitors and relative to its earlier performance. At the same time, measurement error does not provide a basis for adjusting one's view of the appropriate stance of monetary and fiscal policy. An upward revision in the estimated pace of innovation and growth in the economy would have similar implications for estimates of both actual and potential output, and thus would result in no revision in the estimated gap between the two.

The improvement in the trend rate of growth of productivity that is embedded in the Administration's economic forecast has important implications for the wealth and welfare of the Nation. If policies to boost the annual growth of productive capacity by 0.2 percentage point had been implemented a decade ago, the American economy would now have the capacity to generate an additional \$150 billion in goods and services every year. Fortunately it is not too late to lay the foundations for comparable gains in productivity and incomes 10 years hence. The disappointing growth record of the last 20 years, and the anxieties that so many Americans have about their own and their children's economic prospects, demand that every effort be made today to expand the economy's capacity in the future.

## CHAPTER 4

# Public and Private Sector Initiatives to Promote Economic Efficiency and Growth

FROM THE DAYS OF ADAM SMITH, economists have recognized that a system of perfectly competitive markets enhances economic well-being in several ways: by permitting resources, products, and services to go to those who value them most; by providing incentives for cost savings and innovation in the production and distribution of goods and services; and by fostering low prices. Yet like Adam Smith, today's economists also recognize that under some limited but important circumstances markets do not always achieve these desirable ends. When they do not, appropriate government action can improve markets' functioning and so increase economic well-being—for example, by enhancing health and safety, protecting the environment, maintaining competition, and helping develop the intellectual and physical infrastructure that undergirds economic progress.

Markets may fall short in several ways. Markets in some sectors of the economy are imperfectly competitive because a few suppliers exercise market power, keeping prices high and discouraging innovation. Markets may also be subject to externalities, in which private actors, responding to market incentives in their own self-interest, impose costs on others (for example by polluting the environment) without compensating them for their loss. Finally, markets by themselves are not likely to provide appropriate amounts of some goods and services—like national security, education, and research and development—because these “public goods” have value to society far in excess of their value to any individual buyer.

Governments, like markets, may fall short of perfection. Government operations are not always as efficient as they could be, and government regulations, however well intentioned, may sometimes themselves distort economic activities so that markets function less than perfectly. Accordingly, the Administration has taken on the challenge of creating a government that, in the words of the National Performance Review (NPR), “works better and costs less.”

This chapter begins by describing the results so far of the Administration's effort to reinvent government. The remainder of the chapter examines some of the Administration's policy initiatives to-

ward making markets work better. These initiatives reflect the positive role of government, long recognized by economists, in promoting competition in particular markets, remedying harmful externalities, and providing public goods.

## IMPROVING HOW THE GOVERNMENT FUNCTIONS

For Americans used to hollow rhetoric about efforts to change the culture of government, the first fruits of the National Performance Review, directed by the Vice President, come as a welcome surprise. In its first report, in September 1993, the NPR identified 384 separate actions that the Federal Government could take to save money while preserving or even improving the level of service. One year later, more than 90 percent of the NPR's recommendations were being implemented. Actions already taken are expected to achieve more than half of the \$108 billion in savings the NPR forecast achieving over 5 years. Thirty bills covering one-fifth of the NPR's legislative recommendations have been signed into law, including the Procurement Reform Act, the Customs Service Modernization Act, the Federal Employee Buyout Bill, Financial Management Reform, and the Department of Agriculture Reorganization Act. The Federal Government is buying fewer custom-designed products and becoming a more sensible shopper of merchandise off the rack. Agencies are saving taxpayers millions of dollars by slashing red tape. Federal employees have contributed hundreds of promising practices to share with other Federal agencies. Across the country, 135 "reinvention labs" are fostering innovation by Federal employees.

The Administration's efforts to improve government functioning and government regulation seek to replace administrative controls with market constraints and market-like incentives where feasible. For example, Federal agencies have long been in the habit of providing certain financial and administrative services for themselves. The NPR directs Federal agencies to open up these internal monopolies by exposing their operations to competition. Agencies can now purchase over 100 financial, administrative, and other services from competitive suppliers in other agencies. Similarly, the General Services Administration has begun a pilot initiative to reduce its monopoly on government real estate services and instead give its agency customers a choice of service providers. This initiative involves the creation of competitive enterprises to provide real property services on a fee basis, with benchmarks for performance.

The NPR also challenges Federal agencies themselves to search for market, not administrative, solutions to agency needs and missions. Agencies can now make small purchases with an ordinary, commercially issued credit card; this move saved \$50 million in

1994 alone. At the Defense Department a new travel process is expected to save \$1 billion over 5 years. And as discussed below, the Federal Communications Commission has begun to auction the rights to portions of the radio spectrum that previously were allocated in a cumbersome administrative hearings process or by lottery. These auctions have already raised hundreds of millions of dollars.

The NPR encourages government agencies to replace regulations with incentives. For example, the Environmental Protection Agency (EPA) is shifting its emphasis from regulation-based pollution control to providing incentives for pollution prevention. The EPA's Common Sense Initiative involves six major U.S. industries in creating more cost-effective pollution control and prevention strategies, such as allowing companies to trade pollution credits (the advantages of tradable credits are explored later in this chapter). The Occupational Safety and Health Administration has restructured its approach to workplace safety, empowering OSHA inspectors to identify better ways to protect American workers.

## PROCUREMENT REFORM

For decades, changes in government purchasing rules were more often proposed than enacted. But with the support of the Administration a bipartisan coalition in the Congress passed the Federal Acquisition Streamlining Act of 1994. The act changes the way the Federal Government buys \$200 billion worth of goods and services each year—everything from paper clips to jet aircraft. Two hundred and twenty-five major provisions of law are either repealed or reformed, resulting in a purchasing system that will increase competition and lower costs.

To most Americans government procurement has become almost synonymous with “waste, fraud, and abuse.” This is understandable, given the many well-publicized anecdotes over the years suggesting a regulatory bureaucracy gone out of control. Yet, ironically, the web of laws and regulations that gave rise to such horror stories as the Defense Department's \$600 toilet seat actually evolved out of laudable efforts to *protect* the taxpayer from waste, fraud, and abuse.

Since the Civil War, Federal authorities have sought ways to ensure fair competition for government contracts. By 1994 no fewer than 889 oversight laws and regulations were on the books. Oversight activities employed thousands of procurement officials and added billions of dollars each year to the cost of running the Defense Department. Today the Congress and the Administration believe the public interest can be better served by a procurement system that is less regulated, more flexible, and much more compatible with commercial practices.

The inherited procurement system raises costs and impedes innovation by discouraging commercial firms from doing business with the government, and especially with the Defense Department, which accounts for well over half of all Federal procurement. Particularly cumbersome are the provisions of the Truth in Negotiations Act of 1962 (TINA), which among other things generally require companies with government contracts worth over \$100,000 to account for every 6 minutes of each of their employees' time. One leading defense contractor, a manufacturer of aircraft engines for commercial as well as military customers, has to employ 52 extra people, at a cost to taxpayers of \$13 million a year, just to comply with TINA and other government procurement regulations. The high overhead costs of dealing with the purchasing bureaucracy have led at least one other large corporation, faced with declining sales due to military downsizing, to sell its defense division to a defense contracting specialist, which could afford the cost of doing business with the public sector because it could spread the overhead costs over a greater sales base.

The procurement barriers that prevent the Defense Department from buying commercial items off the shelf do not merely raise costs to the taxpayer; they also impede the Pentagon's access to commercial technology, which in many critical areas is now more advanced than military technology. Because of specialized cost accounting practices and other demands unique to the government, leading-edge commercial producers of advanced technology sometimes refuse to become partners with military contractors. The result is to choke off the flow of technology from the civilian to the defense sector.

An incident during the Persian Gulf crisis offers probably the best-known recent example of how procurement regulations can prevent the Defense Department from taking full advantage of the inventiveness and efficiency of commercial producers. The Pentagon placed an emergency order with a leading U.S. telecommunications equipment supplier for 6,000 commercial radio receivers. The Pentagon waived all military-unique specifications, but procurement officials were still legally bound to ensure that the government was getting the lowest available price. Unfortunately, the company's commercial unit lacked the specialized recordkeeping systems required to demonstrate that the quoted price was indeed the lowest for that radio available anywhere. And since any misstatement regarding the price might constitute a felony, no company official would risk making the certification. The impasse was resolved only when the Japanese Government, unencumbered by such rules, agreed to purchase and "donate" the radios as part of its promised contribution to the allied war effort.

Past efforts to fine-tune the procurement system have not solved its problems. The entire system has to be fundamentally redesigned. The Federal Acquisition Streamlining Act of 1994 begins this process by making three key statutory changes.

First, the new law simplifies government contracting for commercial purchases. Agencies acquiring goods shall give preference to commercially available versions rather than ones specifically designed for the government. The law waives many laws that required supplier companies to provide the government with data they did not already routinely collect or that their commercial customers did not also require. Second, the law authorizes the Defense Department to undertake pilot projects to test innovative approaches to acquiring military equipment derived from commercial products.

Third, the law authorizes greatly simplified contracting procedures for small purchases while also encouraging electronic commerce—in effect, Federal contracting by electronic mail. The new law waives the paperwork and recordkeeping requirements of numerous existing laws for purchases of less than \$100,000 (the previous threshold was \$25,000). The increase will make an additional 45,000 procurement actions annually—valued at about \$3 billion each year—eligible for simplified acquisition procedures. Federal agencies also are given greater flexibility to make “micro purchases” of \$2,500 or less. For example, a Federal office manager can now buy pencils at a local discount store without having to fill out a stack of government purchasing forms.

The new law facilitates electronic commerce by encouraging Federal agencies to plug into a publicly accessible Federal Acquisition Computer Network. The President has also ordered all Federal purchasing agencies to utilize electronic commerce to the extent possible; as a result, nearly 250 Defense Department offices, which account for 80 percent of small defense purchases, plan to be on-line within 2 years.

Building upon these legislative reforms, the Pentagon is redesigning its buying practices to reduce significantly its reliance on so-called milspecs, the 31,000 military specifications that describe down to the minutest detail how items ordered by the military are to be made—everything from shotgun ammunition to macaroons for the mess hall. Another case from the Persian Gulf conflict highlights the urgent need for change. The U.S. Army had placed an emergency order with a large defense contractor for 12,000 hand-held navigation devices. The devices would receive signals from the Global Positioning Satellite (GPS) System, thus enabling soldiers to know their precise position on the desert battlefield. The contractor responded that, to comply with milspecs, each receiver would cost \$34,000 and weigh 17 pounds, and the order would take at least

18 months to fill. The Army obtained an exemption from the milspecs and found two commercial firms that could fill the order quickly with GPS receivers that weighed only 3 pounds and cost only \$1,300 apiece.

Milspecs may have made more sense in the past, for sophisticated weapons systems at least, when the Pentagon and the defense industry dominated advanced technology. But for the fields of technology most important to the Defense Department today—semiconductors, computers, software, telecommunications—technical leadership now generally resides with commercial industry. By adopting commercial standards, the Defense Department expects to pay less to provide the armed forces with the latest generation of equipment than if it attempted to design and maintain its own unique standards. Under the new procurement system, to be fully implemented in 3 or more years' time, the Defense Department will no longer tell contractors how most of the products it buys must be made. Milspecs will be the exception, not the rule.

The complete restructuring of the government's procurement system will take time. Some analysts believe that nothing less than a cultural revolution is needed to make the shift to a system that supports innovation and rewards market-driven, entrepreneurial management. That may be so, but in the meantime the Federal Acquisition Streamlining Act, together with other reforms being actively implemented by the Defense Department, will produce—indeed, are producing—positive results.

## REFORMING THE FEDERAL AVIATION ADMINISTRATION

The National Performance Review also called for reform of the way the Federal Aviation Administration (FAA) operates the Nation's air traffic control system. Emerging, satellite-based technologies of air navigation and air traffic control promise to reduce routine air travel times and congestion-related delays by freeing aircraft from having to travel in designated airways. But, the NPR argued, existing budgeting, personnel, and procurement rules so hobble the agency as to impede its ability to adopt this cutting-edge technology quickly. To create an organization that would be up to the challenge of building and running a state-of-the-art air traffic control system, the NPR proposed transferring that responsibility from the FAA to a public corporation set up for that purpose. The National Commission to Ensure a Strong Competitive Airline Industry contemporaneously made a similar recommendation.

In May 1994 the Administration announced a plan to implement these recommendations. The new government corporation would be funded in part from fees paid by the commercial aviation firms using the new system. It would also be permitted to borrow from

the Treasury and from private capital markets, so that the substantial capital investment needed to complete an advanced air traffic control system would not be limited by the flow of user fees. Accelerating the full deployment of the new system in this way will, it is hoped, speed complementary investments by the airlines in aircraft equipment needed to use the system.

The Administration's proposal assigns the users of the air traffic control system a significant role in its corporate governance: aviation company executives would be not merely advisers to the corporation but its directors as well. In part because of the fees they would pay, users would have a direct and substantial financial stake in ensuring that air traffic control services promote safe and rapid air travel, that those services are provided at low cost, and that beneficial investments are not delayed. Strong user representation on the board of directors would therefore encourage sensible and cost-effective corporate decisionmaking.

Regulatory oversight remains important to ensure safety in air travel, to prevent monopoly abuses in the setting of user fees, and to ensure that the corporation does not abuse its ability to borrow. In the Administration's plan, these functions would be performed outside the corporation by the Department of Transportation. Safety regulation would remain in the hands of a slimmed-down FAA, which would oversee the new air traffic control corporation in much the same way it now oversees air carriers and manufacturers. The Secretary of Transportation would have the power to disapprove user fees that harm new entrants, diminish competition, or lead to excessive fees for air service, and the power to disapprove borrowing in excess of the corporation's ability to repay or borrowing intended for inappropriate, wasteful, or unreasonably speculative activities.

## PROMOTING EFFICIENCY IN THE MARKET ECONOMY

Government can promote efficiency in the market economy in many ways, including these three: restraining anticompetitive practices, ensuring that the costs of externalities are taken into account by those who create them, and undergirding markets with research and information that would be undersupplied—or not supplied at all—by private markets. This Administration is committed to making the Federal Government perform these and other important functions efficiently so that markets perform better, and is working on many fronts to do so. Notable examples are initiatives in anti-trust enforcement and interstate banking legislation. Other challenges—and opportunities—for improving the performance of the

market economy lie ahead, for example in the areas of agricultural policy and ground transportation regulation.

## ANTITRUST ENFORCEMENT

The Nation's antitrust laws, effectively enforced, preserve competition and the economic benefits it yields. This Administration is committed to maintaining antitrust protections. In 1994 the Justice Department filed three complaints challenging firms for monopolizing markets, including a widely publicized settlement involving the largest firm in the computer software industry. In contrast, the Justice Department had filed only four other such complaints since the successful conclusion, in 1982, of the prolonged government lawsuit to break up what was then the nationwide telephone monopoly. Other important antitrust initiatives of the past year included a renewed campaign against foreign anticompetitive conduct that harms U.S. interests, the settlement of the Justice Department's price-fixing case against the major airlines (Box 4-1), new efforts in reviewing proposed mergers and acquisitions to harmonize the need to protect competition with industry trends toward rationalization, and efforts to protect incentives for firms in competition to innovate. This last initiative is discussed later in this chapter (in the section on "Intellectual Property"); the other three are considered here.

### *Anticompetitive Foreign Practices*

For 50 years the antitrust laws have been interpreted as forbidding anticompetitive foreign practices that harm U.S. interests, whether by raising the prices of imports to American consumers or by closing markets to American exporters. In the past, for example, the antitrust laws have been employed against foreign buying cartels using monopsony power—the market power of a single buyer—to lower the price received by U.S. exporters. Such enforcement not only protects specific U.S. interests directly, but also advances U.S. interests more broadly by promoting a global regime of competitive open markets.

In 1988 the Justice Department chose to disavow the use of these laws to protect U.S. export trade. That policy was renounced in 1992, but no new case was filed until 1994, when the department reached a settlement with a large British producer of float glass (the type of glass used in automobiles and buildings). The Justice Department charged that the company used exclusive territories and other restrictions in licensing its technology in an attempt to monopolize this \$15-billion-a-year global industry. The licensing restrictions discouraged U.S. firms from designing, building, or opening float glass plants abroad. Because much of the technology being licensed is now in the public domain, and thus could not claim intellectual property protection as trade secrets, the Justice Depart-

#### **Box 4-1.—Airline Price Fixing**

In 1994 the Justice Department settled a case involving price-fixing charges against eight major airlines. What was new about the case was the way in which new forms of information exchange made possible by advances in telecommunications and computerization were allegedly used to facilitate illegal conduct.

The major airlines are connected through a computerized system, set up by the airlines themselves through a joint venture, that collects fare information from each of them and transmits it to the various computer reservation systems used by travel agents. Through the joint venture, the air carriers process and sort fare change information to produce detailed daily reports displaying relationships among fares. The Justice Department emphasized that much of this information is unavailable in practice to travel agents and other users of the reservation systems.

According to the Justice Department, the carriers' joint venture was used in a novel and anticompetitive way to coordinate fare decisions over a 5-year period. Using certain features of the fare records (first and last ticket dates and footnote designators) and often employing prospective fares never offered to the public, the carriers created a detailed language for striking complex bargains across fares and routes. For example, one carrier might agree to raise its fares for a certain city-pair market in which a rival carrier would prefer a higher fare than the first carrier desired, in exchange for the rival carrier agreeing to raise its fares in a second market in which the preferences were reversed. The rapid information exchange made possible by the computerized network aided the carriers in enforcing such bargains: an airline could usually detect and respond to a rival's deviation from such a deal within a day.

The Justice Department claimed to have identified over 50 such collusive agreements between carriers using the computerized joint venture for negotiations, and challenged as unreasonable the features of the fare records that made these conversations possible. If such coordination had raised fares by as little as 5 percent for 5 years on 300 routes, the cost to consumers would have been nearly \$2 billion, according to the Justice Department. The price-fixing charges were settled by an agreement approved by a Federal court which forbids the carriers from using the features of the fare records that facilitate bargaining.

ment concluded that the licensing provisions were not legitimate business practices but were instead being used to close off foreign markets to U.S. competitors. The settlement eliminates the British company's territorial restrictions, allowing U.S. firms to manufacture float glass abroad. This case also illustrates the Justice Department's renewed focus on anticompetitive distribution practices and the anticompetitive potential of sham intellectual property licensing arrangements.

The ability of Federal antitrust enforcers to challenge international cartels and other anticompetitive foreign practices that harm U.S. consumers and exporters was enhanced by legislation enacted in 1994. The new act allows the Justice Department and the Federal Trade Commission to enter into reciprocal agreements with foreign antitrust agencies, under which the U.S. and the foreign agencies will assist each other's investigations by obtaining antitrust evidence from firms and persons within their own jurisdictions. Safeguards in the legislation ensure that confidential business information supplied to foreign antitrust authorities will not be improperly used or disclosed.

### *Antitrust Review of Mergers and Acquisitions*

Mergers and acquisitions are on the upswing: both their number and the value of the assets transferred have increased every year since 1991. But half of all mergers and acquisitions in 2 recent years, as measured by asset value, have occurred in four industries: telecommunications, health care, financial services, and defense and technology (Table 4-1). These are all industries in which technology or the government's role has been changing dramatically, leading firms to alter their business strategies through restructuring.

TABLE 4-1.—*Announced Mergers and Acquisitions Transactions in 1992 and 1993*

Industry	Transactions		Asset value	
	Number	Percent of total	Millions of dollars	Percent of total
All industries .....	5,237	100.0	273,088	100.0
Finance .....	900	17.2	65,030	23.8
Telecommunications .....	249	4.8	62,615	22.9
Health care .....	598	11.4	18,503	6.8
Defense and technology .....	226	4.3	8,913	3.3

Source: Merrill Lynch, *Mergerstat Review 1993*. Reprinted with permission.

Mergers and acquisitions may be attractive to the parties involved for a number of reasons. They may allow the merging firms to lower costs, improve management, stimulate innovation, or reduce taxes. But they may also—and this is the concern of antitrust enforcers—enable the expanded company to exercise market power.

Acquisitions in industries undergoing widespread restructuring are more likely than most to raise conflicts between the business trends that encourage consolidation and the need to preserve and promote competition. Such conflicts have arisen in the hospital industry, where a consolidation has been under way for some time. Nationwide, almost 100 hospitals merge or close in a typical year, and consolidation is occurring in all regions of the country. Because many hospitals serve highly localized geographic markets, where few alternative providers exist or could enter the market, the loss of a single hospital through merger or closure can often sharply reduce competition in its locality. In part the trend toward industry concentration reflects, ironically, the efforts of health insurers and managed care providers to lower the prices they pay by encouraging competition among neighboring hospitals and the rationalization of duplicative facilities. Hospitals also face increasing competition from surgical and outpatient clinics, which can offer at lower cost some health care services that formerly only hospitals provided.

Cost-saving consolidations can lower the price of hospital services and improve health care delivery—so long as they do not undermine competition. Competition ensures that hospital cost reductions will benefit consumers. Antitrust enforcers have not challenged the more than 95 percent of all proposed hospital mergers, and the even greater fraction of proposed joint ventures, that they did not find threatening to competition. But a few proposed consolidations do raise conflicts between the trend toward rationalization and the need to promote competition.

During 1994 the Department of Justice, in partnership with the Florida Attorney General's office, responded innovatively to one such conflict. Under the terms of a consent settlement of an antitrust case, the two largest general acute care hospitals in northern Pinellas County, Florida, were permitted to collaborate in providing those services in which they compete with nonhospital or distant hospital providers, including many outpatient services and tertiary care services. The hospitals were also allowed to consolidate billing, procurement, and other administrative functions. But the settlement requires them to market their collaborative services independently and to continue to compete in offering those inpatient services for which there may be no practical alternative supplier for most patients in their region.

In recognition of the restructuring under way in the health care industry, the Justice Department and the Federal Trade Commission have jointly issued several antitrust guidelines for the health care industry as a whole. The agencies' joint statement on hospital mergers declares that the government will not normally issue a challenge if either of the merging hospitals averages fewer than

100 beds and fewer than 40 patients per day over a 3-year period—regardless of concentration in their geographic market. Guidelines such as these should encourage needed investment and reorganization in this industry by lessening uncertainty about the antitrust consequences of proposed restructurings.

## INTERSTATE BANKING

Legislation enacted in 1994 takes a giant step toward interstate banking and bank branching in the United States. The new law removes Federal barriers to geographic expansion and authorizes the States to remove the rest. Lowering the hurdles to interstate banking and branching improves the efficiency of the banking system in three ways. First, banks can increasingly consolidate branches across State lines into one network and accept interstate deposits without restrictions. This will lower costs for banks operating in more than one State.

Second, increased interstate banking reduces the likelihood of bank failures by facilitating greater diversity in bank loan portfolios. Banks can more easily avoid tying their profitability and solvency to the health of a single region. This will make it easier to diversify against regional risks such as weather- or disease-related crop failure, earthquake, or energy price fluctuations.

Finally, banks' increased ability to enter new markets across State lines will boost competition. To further promote competition, the legislation limits mergers and acquisitions that would cause a bank holding company to control more than 30 percent of the bank deposits in a State, unless the State waives this limit.

## INTRASTATE TRUCKING

The trucking industry was partially deregulated in 1980, with the enactment of legislation significantly reducing Federal control over entry, pricing, and operations of interstate trucking. Scholars estimate that this legislation has generated annual savings in the tens of billions of dollars. Legislation enacted in 1994 removes the most burdensome remaining governmental constraints: regulation by more than 40 States of the rates, entry, and routes of motor carriers.

The end of intrastate trucking regulation in 1995 promises to lower the prices of trucking services. For example, under current State regulation, one consumer products distributor pays \$560 to ship products the 422 miles between Dallas and Laredo, Texas, but only \$410 to ship the same goods the 480 miles between Dallas and Topeka, Kansas, in largely unregulated interstate commerce. The new legislation discourages inefficient business practices predicated on State regulation. For example, cargo carriers will no longer have an incentive to ship to inconvenient out-of-State airports in order

to avoid regulated intrastate trucking rates. Competition among truckers and multimodal cargo carriers implies that much of the savings from deregulation will be passed through to consumers.

## FARM POLICY REFORM

The drafting of a new farm bill in 1995 will give the Federal Government an opportunity to reassess and redesign its role in the agricultural economy. A more efficient farm policy would reflect contemporary economic conditions, environmental needs, and public values. As described below, efficiency requires that farmers be given greater opportunity to respond to market incentives, and that cost-effective public policies be used to correct market failures in agriculture. Revising government policy to meet better these objectives will help unleash more of the innovative energy that has long characterized American agriculture.

### *Changing Conditions in the Agricultural Economy*

Today's agricultural commodity support programs are rooted in landmark New Deal legislation that followed the agricultural depression of the 1920s and 1930s. These programs were designed to sustain prices and incomes for producers of cotton, milk, wheat, rice, corn, sugar, tobacco, peanuts, and other crops. However, changing economic conditions and trends in agriculture over the past half-century suggest that many of the original motivations for farm programs no longer apply.

*The farm sector no longer looms large in the macroeconomy.* Commodity programs were originally instruments of macroeconomic policy as well as a means of sustaining farm families' incomes. In the 1930s farm households accounted for 25 percent of the U.S. population and generated over 10 percent of gross domestic product (GDP). Today they comprise less than 2 percent of the population. Although the U.S. food and fiber system as a whole (including food processing and marketing) provides an estimated 18 percent of U.S. jobs and contributes over 15 percent of GDP, farming alone now generates only 9 percent of rural employment and less than 2 percent of GDP. Technological progress and growth in farm productivity permit a smaller labor force to supply the agricultural needs of the entire country. As a result, government farm programs play a reduced role in the U.S. macroeconomy.

*International trade in agricultural products has grown.* Productivity gains in agriculture have helped fuel growth in agricultural exports. For example, wheat exports have grown from 8 percent of U.S. wheat production in the 1930s to over 50 percent today, while corn exports have grown from less than 2 percent of production to about one-quarter. Such growth has helped convert agriculture from a trade deficit sector to an important trade surplus sector, contributing over \$19 billion to the U.S. balance of trade in 1993.

*The average farm payment recipient is no longer poor.* In the 1930s per capita farm income was only one-third the per capita income of the remaining population. Commodity programs were intended to reduce this disparity. Today, however, recipients of farm program payments (about one-third of all farm operators) tend to be better off than the average American. Overall, farm households have about the same average income and quadruple the net worth of the average U.S. household. Moreover, two-thirds of program payments go to the largest 18 percent of farms—even though the average income of these recipients is triple that of the average U.S. household.

*Agricultural production is increasingly concentrated.* The number of farms has fallen by more than 60 percent since 1950, while the size of the average farm has doubled. Moreover, 92 percent of what the Bureau of the Census terms farm households operate small farms but receive almost all their income from off-farm sources; they have about the same average income as the typical nonfarm household and receive only a small share of government farm program payments.

Demographic data indicate that these trends will continue, in part because the young increasingly choose nonfarm occupations. During the 1980s, entry rates into farming fell by 50 percent among those under 25 years of age and by 35 percent among those aged 25 to 34. Low rates of young farmer entry have persisted since 1987. By 1990, as a result, 22 percent of farm operators were 65 or older, compared with only 3 percent of the U.S. work force as a whole.

*Farmers now can insure themselves against price declines.* In the early 1930s farm incomes were at the mercy of year-to-year fluctuations in farm prices. Commodity programs provided price floors for agricultural producers, insuring them against adverse price swings. The growth of futures and options markets now lets farmers protect against short-term price declines without the need for a government program.

*The potential environmental costs of farming have increased.* Modern agricultural practices can sometimes lead to substantial runoff of nutrients and chemicals, which pollute downstream water resources. The use of both pesticides and fertilizers has doubled since the 1960s, and agriculture is now considered a contributor to water quality problems in approximately 60 percent of river and lake areas that are impaired. An increasing rural population has raised the potential public health costs of environmental damage from agricultural activities. Agriculture has also been a major source of wetlands losses, which can diminish floodwater storage capacity and harm water quality and wildlife. The upper Midwest, for example, once had an estimated 53 million acres of wetlands;

today only about 23 million acres remain, 29 million acres having been converted to cropland. (Wetlands policy is discussed further below.)

### *New Foundations of Agricultural Policy*

Both changing economic conditions and the quest for efficiency in government motivate a new set of objectives for agricultural policy.

*Market incentives at home and abroad.* With the increasing importance of international markets to U.S. agriculture, free trade between nations has also become increasingly important to this sector. As discussed in Chapter 6, the Administration has achieved historic agreements that will lower international trade barriers around the world, including some prominent barriers to agricultural trade. These agreements will yield large dividends to the farm sector and the U.S. economy at large.

At home, farmers must be given appropriate market signals so that their decisions will help maximize aggregate economic welfare. Unfortunately, some government farm programs impede market processes and efficient choices. In some agricultural markets, the Federal Government operates programs that do not involve taxpayer subsidies, but that nonetheless reduce economic efficiency. For example, in markets for sugar, peanuts, and tobacco, above-market prices are supported by cartel-like supply restrictions that are enforced by the Federal Government. The sugar and peanut programs also impose marketing restrictions in ways that inhibit shifts of production from more costly to less costly producers.

Farm commodity programs currently come in two main forms. Income support is provided by *deficiency payment programs*, which make payments that depend on a commodity's statutory target price, the actual market price, and the number of acres a farmer has accredited to the commodity program. To maintain their benefits, farmers have an incentive to plant the same crops year after year. Deficiency payments are sometimes tied to a requirement that farmers idle a portion of their land. Farmers that are eligible for deficiency payments also benefit from *price support programs* that pay them the difference between a commodity's support price and its international price on each unit of a program crop that they produce.

Both programs affect economic behavior in ways that may prove costly. By encouraging overinvestment and overproduction in agriculture, the programs affect the allocation of resources in the economy and thereby reduce overall productivity. The programs also reduce the productivity of agriculture itself because they subsidize different crops to different extents. Indeed, almost half of agricultural production is not covered by either price support or deficiency payment programs. In addition, farm programs may have long-run costs: by raising agricultural land values, crop subsidies may raise

the financial barriers to entry into farming, deterring some entry and increasing the financial vulnerability of new farmers.

The programs may also discourage environmentally beneficial practices. By favoring program crops over nonprogram rotation crops, both programs discourage crop rotations that break pest cycles and promote soil conservation. Price support programs can encourage the use of pesticides, herbicides, and fertilizers, which may raise yields but contribute to off-site environmental damage. By increasing the returns to crop cultivation, both programs may encourage the farming of marginal lands, which for environmental reasons may be better left fallow. And both programs may skew the composition of farm output toward program crops, some of which are particularly intensive in environmentally harmful inputs. For example, a 17-State Department of Agriculture survey found that farms growing cotton, a program crop, use almost twice as much pesticide per acre as the average farm.

Some economists argue that current farm programs can be reformed to increase economic efficiency, better serve environmental objectives, and still provide government support to the agricultural sector. For example, one approach would sever the link between commodity program payments and farmers' crop choices by fixing farmers' commodity program acreages, allowing farmers complete planting flexibility on these acreages, terminating acreage control requirements, and rolling price support programs for the income-supported commodities into deficiency payments (thus curtailing overproduction incentives implicit in price supports).

*Farm survival.* Farmers are subject to daunting risks from both nature and markets. For a variety of economic reasons, including incentive considerations, these risks are mostly borne by farmers themselves. Investment in farmland and farm capital generally requires a combination of a farmer's own funds and bank loans. When the agricultural economy suffers a downturn, farmers' debts can threaten their financial stability and indeed the survival of their enterprises, as was witnessed most recently in the agricultural recession of the early 1980s. For would-be farmers with limited capital, such prospects can limit the availability of bank funds and deter entry, even if that entry appears profitable, on average, in prospect. Government support of farm credit and crop insurance is intended to counter these effects.

Risks to farm revenues come from two sources: prices and yields. When both prices and yields are insured, so is the product of the two, farm revenues. Price insurance is now available on private markets in the form of futures and options contracts. Yield insurance, on the other hand, is offered by the Federal Government in the form of subsidized crop insurance.

In principle, private insurance markets can mitigate risks to farm revenue when an individual farm's revenues are closely tied to observable regional measures of crop revenue. Regional revenue insurance can offer farmers compensation when revenues are low, without creating problems of adverse selection and moral hazard (Box 4-2). In practice, however, the Federal Government has deterred the development of a private insurance market by offering subsidized crop insurance of its own and by standing ready to underwrite many farm losses in the event of natural disasters.

Even if regional revenue insurance were available, some risks specific to individual farms may remain uninsurable in private markets because of adverse selection and moral hazard. Farm disaster insurance responds to this market failure. The Administration has moved swiftly to address the need for farm disaster insurance that both protects farmers from large crop losses on their individual farms and clarifies the government's role in disaster relief. The Federal Crop Insurance Reform initiative, signed into law in the fall of 1994, provides for minimal disaster insurance coverage for all farmers that participate in government farm programs and any others that choose to purchase this coverage; the insurance protects farmers from yield losses above 50 percent of their historical average yields, with payments for such losses at a rate of 60 percent of the expected crop price. This reform provides farmers with disaster protection that is statutory and hence dependable. With this basic protection in place, the stage is set for advancing market alternatives to conventional government crop insurance, in order to insure against low, but noncatastrophic, revenues. Regional revenue insurance represents one possible private market insurance alternative.

*Environmental stewardship and efficient land use.* The choice of farm practices can have a wide range of environmental effects, positive and negative. Negative effects include off-site costs of soil erosion and agricultural runoff; positive effects include wildlife preservation benefits from hedgerows and windbreaks, and reduced greenhouse gas emissions due to improved fertilizer management and processing of confined livestock waste. Over the past two decades, farm conservation practices have improved dramatically. Nonetheless, farmers should be given incentives to consider the environmental costs and benefits of their actions. Federal policy can incorporate environmental and public health values into farmers' decisionmaking through an incentives-based approach that leaves management decisions in farmers' qualified hands while turning collective environmental objectives into individual financial ones. For example, the environmental costs of agricultural erosion and runoff stem from both the application of fertilizers and pesticides and a variety of other farm practice decisions, including tillage

#### **Box 4-2.—Adverse Selection and Moral Hazard in Crop Insurance**

When some farmers face a higher risk of crop shortfalls than others, but potential insurers cannot identify which farmers are high-risk, insurance premiums must be set to reflect the *average* risk of insured farmers. However, for low-risk farmers, such premiums will be higher than their average revenue losses, and these farmers may therefore decide not to buy the insurance. As a result, only the high-risk farmers may choose to purchase private crop insurance, leaving all other farmers to face the full range of revenue risk, and leading insurers to raise their premiums on the now-riskier pool of customers. The problem that arises when individual farmers know their own vulnerability to specific hazards better than do insurers is called *adverse selection*.

Crop insurance can also fall victim to what economists call *moral hazard*, the problem that arises because a farmer who is insured against crop loss has less of an incentive to avoid the loss. Moral hazard in this setting occurs when insured farmers adjust their production practices to increase the likelihood of receiving an insurance payment. This can be done, for example, by producing a small crop and a large crop in alternating years. The large crops keep the insured revenue level up, while the small crops permit the farmer to collect on the insurance contract.

Both adverse selection and moral hazard problems could be avoided with *regional revenue insurance* that compensates each farmer only for shortfalls in regional revenue, not the farmer's own revenue. For example, a regional insurance contract could be tied to average corn revenue in a given county, defined as the product of the county-wide average yield on corn acreage and a corn price index. An insured farmer would receive a payment when average corn revenue falls below a given level; the size of the payment would depend upon the amount of insurance the farmer has purchased. To the extent the farmer's own corn yields match those of the region, regional insurance would provide financial relief in times of low revenue, without tying insurance payments to outcomes that depend upon the farmer's own planting decisions or risk attributes.

practices, crop rotation decisions, and the use of filter strips that absorb runoff in the boundaries of croplands. When the application of fertilizers and pesticides imposes off-site costs, farmers can only be expected to make efficient decisions if they are themselves confronted with these costs. One possibility by which policy could use

markets to do this is to levy fees on the use of these inputs that reflect the environmental cost of their application in different geographical areas. Another option is to use positive financial incentives to encourage the adoption of conservation practices that reduce erosion and runoff or provide wildlife habitat.

Federal policy also needs to be concerned with agricultural land use. In some cases the public benefits from preserving uncultivated land or returning cultivated land to its native form may exceed the potential private benefits of cultivation. This is likely to be the case with some highly erodible land and many wetlands. About 120 million acres of cropland, representing over 25 percent of all U.S. cropland, is considered highly erodible. These lands are estimated to erode at least eight times as fast as their soil can be naturally regenerated, leading to high off-site costs of sediment and chemical runoff. Such lands have been among the most important targets of the Agriculture Department's principal land retirement program, the Conservation Reserve Program, which has succeeded in reducing the overall national soil erosion rate by an estimated 20 percent. Federal policy should continue to target such sensitive lands and do so in a way that yields the greatest environmental benefit per tax dollar.

How wetlands are used affects a wide variety of public resources, including water quality, groundwater supplies, floodwater storage, and wildlife. To protect these resources, Federal wetlands policy should address both wetlands *restoration* and wetlands *conversion*. The Administration has sought to accelerate wetlands restoration through the Wetlands Reserve Program. To date, this program has permanently restored 125,000 acres of critical wetlands from cropland at a cost of less than \$1,000 per acre.

The conversion of natural wetlands to cropland has been regulated by the Federal Government under both Section 404 of the Clean Water Act and a provision of the farm bill called "Swampbuster." Under Section 404, permits are often required for the conversion of wetlands; the Army Corps of Engineers and the Environmental Protection Agency share responsibility for granting the permits. Under the Swampbuster provision, agricultural producers can sometimes be denied farm program benefits if they cultivate a native wetland.

The Administration has worked to resolve a variety of wetlands policy issues by streamlining administrative procedures for issuing wetland conversion permits, clarifying the delineation of wetlands that are subject to regulation, promoting flexibility in wetlands regulation so as to achieve wetlands preservation at a lower cost, and providing incentives for States and localities to engage in watershed planning and thus reduce conflicts arising from permit-by-permit decisionmaking. For example, to reduce regulatory duplication

and delays, the Administration has designated the Natural Resources Conservation Service (formerly the Soil Conservation Service) as the lead Federal agency for wetlands delineation on agricultural lands under both the farm bill and the Clean Water Act. The Administration has also exempted 53 million acres of converted agricultural wetlands from regulation and endorsed the use of mitigation banking. Mitigation banking allows environmental damages from a given wetland conversion to be offset by the prior creation or restoration of other wetlands. It thus allows valuable development to proceed while protecting wetlands and making the permitting process more flexible and cost-effective.

Critics of Federal wetlands regulation have argued that restrictions on private wetlands conversion constitute a government "taking" for which private landowners should be compensated. Such claims are part of a broad and important public debate on the appropriate scope of the takings doctrine (Box 4-3).

*Food safety.* When consumers cannot easily determine for themselves the healthfulness and safety of the foods they buy, they cannot appropriately reward producers for providing these attributes even though they value them. Government can enhance social welfare in these circumstances by undergirding markets with food safety protection. This undergirding of markets takes four forms: inspection of meats and other foods for contaminants, standards for pesticide residues on food, regulation of the pesticides themselves and their availability to farmers, and consumer information through education and labeling.

Food safety policy has evolved to address public demands for protection, but not always in cost-effective ways. Inspection programs need to provide food producers with appropriate incentives to prevent contamination, while at the same time keeping regulatory design standards to a minimum. Overproliferation of prescriptive standards can prevent firms from developing the protection systems best suited to their facilities. Appropriate incentives can be provided through effective Federal contaminant detection programs, combined with penalties and remedies for contamination.

The Administration's pathogen reduction initiative is an important step in this direction. This initiative provides for the recall of meat and poultry products that pose a threat to public health, the assessment of penalties when health standards or inspection procedures are violated, and the introduction of the latest pathogen detection technology in a meat inspection system that has become outmoded. The Administration is moving toward a system based on detecting the microbial contaminants that are the sources of foodborne illness rather than relying on visual inspection alone. This reform should permit the cost-effective achievement of public

### **Box 4-3.—The Takings Debate**

Federal, State, and local governments regulate land use in a variety of ways, to protect their citizens from harmful externalities and to preserve public resources, including wildlife, water quality, and open space. State and local authorities, for example, routinely make decisions about zoning and permits that constrain the uses of private lands and the buildings allowed on them. Such constraints protect residential and other property from harm by noxious development on neighboring property. Federal land use regulations include wetlands protection and endangered species preservation.

Compensation for some regulatory actions affecting property values is required by the Fifth Amendment to the Constitution, which forbids the government to take private property for public use without just compensation. This provision establishes and protects the institution of private property, thus laying the foundation for economic growth financed largely by private investment.

Recent legislative debate has centered on the extent to which landowners should be compensated for regulatory actions affecting the value of their property in situations in which compensation is not constitutionally mandated. Under many proposals for expanded compensation, the government would thus be required to provide compensation when zoning, environmental, or other regulations prevent landowners from using their property in ways that harm other property owners or the public.

An expanded compensation requirement could harm the economy in at least two ways. First, it would tend to discourage Federal, State and local governments from a critical task of microeconomic policy: that of addressing market failures, such as externalities or the underprovision of public goods, in order to protect health, safety, and the environment. For example, enactment of some proposals to expand compensation could discourage environmental regulations that prevent landowners from storing barrels of toxic waste near a neighborhood or school. Second, an expanded compensation requirement might give landowners an incentive to alter the use of their land in order to increase the likelihood or amount of compensation. If environmental resources could be protected only by paying off those who would benefit from damaging them, then landowners, for example, would have an incentive to seek compensation by proposing environmentally damaging projects that they might never have otherwise considered.

health goals, the importance of which has been highlighted by recent episodes of contamination by the intestinal bacterium *E. coli*.

The Federal Government determines pesticide residue standards according to criteria laid out in the Federal Food, Drug, and Cosmetic Act (FFDCA). The so-called Delaney clause in this act requires that processed foods contain no additives that, in any quantity, could potentially cause cancer. For residues on raw agricultural commodities, in contrast, the FFDCA gives regulators greater flexibility in determining the amounts of chemical residues allowed. The zero-risk standard implicit in the Delaney clause requires that even safe amounts of pesticide residues not be allowed in processed foods, no matter how much the application of pesticide might reduce the cost of producing food.

The government's pesticide registration process has been criticized for costly delays and a statutory apparatus that can sometimes prevent the substitution of less toxic new pesticides for more toxic older ones. To address these problems, the Administration has proposed a periodic review of all registered pesticides and an expedited registration process for those pesticides that present reduced risk and for minor use pesticides. Beyond these administrative reforms, efficiency dictates that pesticide registration decisions be guided by benefit-cost criteria. If regulation is imposed even though the benefits of reduced risk do not justify the costs, the Nation loses an opportunity to redirect resources toward more effective risk-reduction activities.

Finally, government policy can be used to help consumers become better informed about the foods they purchase. To promote this end, Federal grading and labeling standards should focus on providing the information about nutrition, food safety, and other health concerns that consumers may lack, and not on cosmetic attributes (such as fruit size and external blemishes) that consumers can readily observe for themselves. Beyond grading and labeling, the government can usefully promote access to additional information about food product attributes, whether it concerns the use of additives, irradiation, or other food production processes that consumers may care about.

*Research and development.* The U.S. Government has a long and distinguished history of sustaining research that advances agricultural production capabilities. Today agricultural research confronts new challenges as the farm economy strives to sustain its high productivity, meet a growing concern with the environmental effects of agricultural practices, and find new uses for farm products. Research and development on bioenergy is a prime example of Federal Government efforts to respond to these new challenges.

Biomass from tree and grass crops may become an important new fuel source for electricity generation in future decades. To fos-

ter this emerging technology, the Administration is pursuing a collaborative interagency effort to promote research, development, and demonstration of new bioenergy-generating technologies and feedstock crop systems. Studies using economic and technological models of biomass production have produced preliminary estimates indicating that a commercially viable biomass industry could represent a significant share of new U.S. electric generating capacity within a couple of decades. Commercial viability is judged in these studies without incorporating any environmental benefits of biomass generation, even though two such potential benefits are foreseen. First, fuel crops are suitable for production on highly erodible land, giving farmers a potentially profitable alternative crop that also promotes erosion control and water quality improvement. Second, biomass power can help to reduce net greenhouse gas emissions to the extent they supplant fossil fuels: both types of fuel release carbon dioxide when combusted, but growing biomass crops reabsorb it from the atmosphere—fossil fuels do not.

Bioenergy crops could also provide an important new source of agricultural income in future decades. Some forecasts suggest that as many as 50 million cropland acres could, under favorable conditions, be devoted to feedstock production. New agricultural activities of this kind, together with rural bioenergy generation, may help reinvigorate America's rural economy.

The Federal Government has an important economic role to play in promoting biomass power generation for two reasons. First, private markets are likely to fail to capture the promised environmental benefits. Second, research and development in this infant technology is likely to be a public good that merits government support, because its benefits are difficult to appropriate.

## POLICIES FOR MORE EFFICIENT TRANSPORTATION

About 12 percent of national income is spent on transportation services, including efforts to reduce the environmental impacts of transportation. However, several types of external costs of motor vehicle usage are not reflected in prices. As a result, excessive driving-related social harms are likely to occur.

For example, traffic congestion and wear on roads will be excessive when individuals' driving and road use decisions do not take these costs fully into account. Similarly, the tax deductibility of businesses' expenses for employee parking constitutes a subsidy, which artificially encourages driving. The environmental costs of motor vehicle fuel use are also important externalities. Although new-car tailpipe emissions per mile traveled have decreased at least 76 percent and possibly as much as 96 percent since the late 1960s, total travel has increased by two-thirds, consumers have shifted vehicle purchases toward light trucks with lower fuel econ-

omy and higher emissions, and older, more polluting vehicles remain on the road longer than before. Vehicle traffic is responsible for roughly 40 percent of emissions of ozone precursors and is an important source of toxic air pollutants, as well as a source of polluting runoff into waterways. The transportation sector is also a significant contributor to greenhouse gas emissions.

When externalities are significant, government policy can promote economic efficiency by seeking to ensure that private agents pay the full costs of their transportation decisions. Many of these costs are interrelated and therefore demand integrated regulatory approaches. Such approaches are consistent with the Administration's commitment to exploring more effective regulation by exploiting synergies between achieving economic and environmental goals. For example, policies to reduce peak traffic congestion, if carefully designed, can also reduce some pollution problems, and conversely, policies that increase the total cost of driving by making drivers pay the environmental costs of vehicle usage also will limit road congestion.

The challenge is to design a menu of policies that achieves objectives set for pollution and congestion reduction at minimum cost. Needlessly rigid emissions and fuel economy standards can raise the cost of regulatory compliance, by limiting flexibility and incentives to innovate.

Overly prescriptive vehicle inspection and maintenance programs have been criticized as costly and ineffective at emission reduction. Finally, vehicle environmental standards that are not well integrated with approaches to emissions reductions from other sources lead to economic waste when the marginal cost of emissions reduction varies across sources. Social science research can suggest new tools for addressing those regulatory problems (Box 4-4).

Greater regulatory flexibility and reliance on economic incentives would provide opportunities for vehicle users, manufacturers, fuel suppliers, and local regulators to develop innovative, cost-effective solutions. This would tend to alleviate congestion and pollution, and encourage the development of environmentally beneficial changes in technology. One step forward would involve making current vehicle emission standards more flexible by allowing automakers to trade vehicle emission credits. Companies that can cheaply overcomply with average per mile emission standards could sell excess credits to those facing higher compliance costs. Such policies are similar in spirit to tradable emissions allowances for sulfur dioxide (Box 4-5).

Economic efficiency may also be increased through greater flexibility in the control of mobile and other pollution sources, although more experimentation is needed to determine the size of the likely social benefits. For example, "cash for clunkers" programs, which

#### **Box 4-4.—Social Science Research and Environmental Policy**

Social science provides an important link between science and technology investments and the Nation's social concerns, including economic development, health, and environmental quality. In particular, social and economic research helps to develop knowledge that decisionmakers can use in formulating cost-effective, incentive-based environmental policy instruments.

The further development of policies establishing tradable rights or allowances for pollutant emissions or the use of natural resources provides an example. Such policies have emerged from over a quarter-century of social science research and are now in active use in the United States and other countries to regulate a variety of activities, including local and regional air pollution emissions and catches from open-access fisheries. Current support for social science research should allow the expansion of similar trading systems to cover other problems such as vehicle emissions and water pollution, generating important resource savings for the Nation as a whole.

Beyond contributing to policy design, social science research undergirds efforts to better understand the benefits to society of public resource preservation and environmental protection. This information is important for setting rational standards for resource protection. Important examples of research issues now under study include tradeoffs between environmental and other risks and the valuation of nonmarket environmental attributes. The techniques developed for environmental resource valuation and policy design should find applications in numerous other areas, including worker safety, health, and investment in human capital.

purchase and remove from service older, high-emissions vehicles, may be a cost-effective way of reducing emissions quickly, and industrial emitters may be willing to pay the costs as an alternative to tighter controls on their own sources. In addition, automobile sellers may be able cost-effectively to reduce total emissions in an airshed by, for example, subsidizing the purchase of low-emission lawn mowers.

#### **GLOBAL CLIMATE CHANGE**

The external costs of environmental pollution and degradation are often local or regional in nature—this is true, for example, of the costs associated with certain farming practices, such as pesticide use, discussed earlier in this chapter. But scientists and economists also recognize the possibility of environmental

#### **Box 4-5.—Clearing the Air on Emissions Allowances**

Beginning January 1, 1995, 110 of the Nation's dirtiest coal-burning plants must be in possession of an "allowance" for every ton of sulfur dioxide (SO<sub>2</sub>) they emit. Each plant will receive an annual allotment of tradable allowances. Firms that can reduce emissions at low cost, to the point where they emit less than their annual allotment of SO<sub>2</sub>, can sell their unused allowances. Firms that face high costs of cleanup can purchase allowances and emit more than their initial allotment. If firms are allowed to buy and sell allowances freely, the overall cleanup objective will be achieved at minimum total cost, and the price of allowances will equal the cost of reducing emissions through the cheapest alternative means.

Trading in allowances thus far has been thin, but most sales in 1994 cleared at between \$140 and \$170 per ton. Taken at face value, this range of prices suggests that the cost of reducing SO<sub>2</sub> emissions will be much lower than most analysts had expected when the program was being devised. The low prices reflect the decline in price for low-sulfur coal, a decline that is itself partly due to the flexibility of the new program. As a result, fuel switching is now a cheaper means of achieving emissions targets than had been expected.

However, some State utility commissions continue to favor installation of scrubbers over other methods of cleanup. This reduces the demand for allowances and hence artificially depresses their price. In addition, by ruling that most or all allowance-related cost savings must be passed on to customers, some State commissions have weakened the incentives for utilities to choose the least-cost method of achieving emissions reductions. On balance, the early results from SO<sub>2</sub> allowance trading are encouraging. But greater benefits should be realized if State utility commissions avoid distorting the incentives for choosing the least expensive abatement strategies.

externalities on a global scale. A potentially important example is the accumulation of greenhouse gases in the earth's atmosphere. This buildup, which derives from a variety of human activities, including those that use fossil fuels, agriculture, and deforestation, poses an uncertain but potentially great long-term danger to the global biosphere and human well-being. The best scientific evidence indicates that the release of carbon dioxide, methane, and other gases that trap heat in the Earth's atmosphere has already reached levels well above those of preindustrial times. At current rates of growth in emissions worldwide, the concentration of carbon dioxide in the atmosphere by the middle of the next century will be equiva-

lent to twice its current atmospheric concentration. Because these gases linger for a long time in the atmosphere, the effects of past emissions would persist even with significant reductions in current emissions.

The effects of greenhouse gas accumulation on ecosystems and human well-being have received extensive international scrutiny in an effort to develop a range of agreement on the impacts and to identify the limits of current knowledge. A number of analysts believe that significant negative impacts could result. Possible effects include a rise in sea levels, inundating some island nations as well as some inhabited coastal areas; shifts in optimal growing regions for crops, due to changes in temperature and moisture patterns that hamper agricultural productivity in some regions (even while increasing it in others); threats to human health from greater heat exposure and changes in the incidence of disease; and threats to “unmanaged” ecosystems, with adverse effects on biodiversity. The possibility that the global climate changes discontinuously—that significant effects do not occur until greenhouse gases accumulate beyond a certain threshold—must also be considered.

The potential for harmful climate change, combined with uncertainty about the likelihood and magnitude of adverse effects, suggests the value of taking action to reduce these risks and their impacts. This action can take a variety of forms, including a slowing of emissions, investment in greater adaptation capacity, and accumulation of additional knowledge about the threats and possible technological responses.

Climate change is inherently a long-term issue. The effects of any actions taken today will benefit the current generation’s children and grandchildren. Reducing greenhouse gas emissions is also inescapably a global problem: no country acting alone can, as a practical matter, reduce the total flow of emissions, or reverse their effects. To date, the vast bulk of greenhouse gas emissions has come from activities in the advanced industrialized countries. In the absence of significant technical change, however, economic progress and increased energy use in what are now the lower and middle-income countries will cause an enormous swelling of emissions. Moreover, the effects of climate change and efforts to mitigate them will differ in different countries. For example, low-lying island nations will be affected more severely than the United States. These differences in vulnerability and the debate over the apportionment of responsibility for greenhouse gas control complicate the effort to achieve and implement international agreements to deal with the problem.

Despite these complications, the United States and most members of the world community have signed the Framework Convention on Climate Change, which was announced during the Earth

Summit in Rio de Janeiro in 1992. This convention sets out a long-term objective of limiting greenhouse gas concentrations and a commitment to negotiate interim steps to attain that long-term goal. An interim aim of the more industrialized countries of the world is to reduce their rates of greenhouse gas emissions to 1990 levels by the year 2000. Beyond this initial step, the Administration currently is developing a decision framework to guide U.S. climate policy in the 21st century, and to support the next round of international negotiations on climate measures.

In devising strategies to curtail greenhouse gas emissions, several objectives are important.

*Cost-effectiveness.* Cost-effective greenhouse gas control policies must rely as much as possible on economic incentives, to motivate the responses of the literally billions of people responsible for greenhouse gas-emitting activities.

*Concern for the future.* Cost-effective policies also need to provide appropriate insurance against the threat of climate change to future generations. The concept of “sustainability” may provide relevant insights (Box 4–6).

*Flexibility.* Because the potential damages from climate change are related directly to the long-term accumulation of greenhouse gases, and not just to the annual rate of emissions, it is important to address long-term greenhouse gas concentrations while providing flexibility in the timing of emissions reductions. Such flexibility would allow emitters and national policymakers to benefit from new information about climate change hazards and technologies, and to adjust behavior and policies to differing near-term economic development objectives. Flexibility also is needed in the pursuit of measures aimed at mitigation, adaptation, and technology development.

*Comprehensiveness.* Given the global scope of the issue, it will become increasingly important to coordinate national responses in order to avoid excessively costly or perverse outcomes. For example, focusing only on emissions in today’s advanced industrialized countries would do little to prevent the “leakage” of emissions to other countries that are expanding their industrial bases.

*Compatibility with diverse international interests.* In the short run it is unlikely that developing countries will make substantial efforts to curb their greenhouse gas emissions without technical and financial assistance from the more developed countries, which are likely to take the lead in developing low-carbon energy and other technologies. This observation suggests that there are benefits to be had from helping developing countries improve their capacity to monitor their emissions and analyze policy options; from supporting measures in those countries that will both lower emissions and improve economic growth; and from assisting in develop-

ing a technological capacity in developing countries for reducing emissions in the future.

To translate these principles into practice, the Administration has initiated a Climate Change Action Plan to lower the rate of greenhouse gas emissions in 2000 to 1990 levels, through largely voluntary measures that focus on education and expanding the use of cost-effective technologies with lower greenhouse gas emissions. Examples include Green Lights, an initiative to promote the use of energy-efficient lighting; Natural Gas Star, promoting efforts to reduce methane leaks; and the Motor Challenge, designed to assist in the promulgation of high-efficiency motor systems. However, the difficulty of achieving the targeted emissions reductions even with this program underscores the challenge that the climate change issue presents. The Administration is considering other potentially cost-effective measures for slowing U.S. emissions after 2000, including emissions reductions in the transportation sector and encouraging greater use of biomass fuels.

To support international progress in addressing climate change, the Federal Government has invested in a "country studies" program that provides technical and financial support for developing and transitional countries to understand better their own greenhouse gas emissions sources, vulnerabilities to climate change, and options for cost-effective mitigation. Ultimately over 50 countries are expected to develop joint programs with the United States as a result of the country studies. Such assessments of international circumstances provide a foundation for the diffusion of cost-effective emissions reduction strategies to other countries, and for the "joint implementation" pilot program initiated by the Administration. Joint implementation permits U.S. emitters of greenhouse gases to achieve emissions reduction goals by undertaking mitigation activities in and with other countries, where the costs of greenhouse gas control may be much lower than in the United States. Joint implementation is thus an important example of the use of flexible, cost-effective policies to meet the divergent interests of the world's nations.

## ENCOURAGING ECONOMIC GROWTH

As the analysis in Chapter 3 indicates, technological change is an important determinant of the economy's potential growth rate. Recognizing this, the Administration has worked to support technological innovation by the private sector and to improve the effectiveness of Federal spending on science and technology. This section provides an overview of the Administration's science and technology policy, focusing on efforts to facilitate the telecommuni-

#### **Box 4-6.—“Sustainability” and Economic Analysis**

The concept of sustainability, commonly invoked in debates about environmental, economic, and social values and policies, involves a number of important economic issues. One of these is *intergenerational equity*. The growing scale of human impact on the planet’s ecosystems creates concern about the kind of environment we will leave to future generations. The economic methodology used in policy evaluation can in principle incorporate distributional effects across generations. Doing so requires attention to ethical concerns in setting the social discount rate, and to the collective bequest values experienced by the current generation in providing for our descendants.

A second fundamental concern involves the *substitutability* of other forms of wealth—physical capital and knowledge—for the services of the natural environment that are lost as natural systems are degraded. If substitution is relatively easy, as often assumed in economic analysis, then concern for the future largely reduces concern about the overall level of savings across generations, without regard to whether the saving takes the form of preserved ecological assets or other forms of wealth. But if substitution possibilities are more limited when human impacts are large, then greater concern for natural preservation is warranted.

Several other economic ideas also are relevant to discussions about sustainability. The concept of fully valuing all the consequences of pressures on the environment, including irreversible losses and the value of preserving options, is an economic approach for setting priorities in the use of scarce resources for environmental protection. The concept of cost-effectiveness—meeting environmental and other policy targets at minimum cost, typically by employing economic incentives and by allowing flexibility in the means for attaining goals—also is important.

The criticisms of economic analysis in the sustainability debate point to important directions for further study. For instance, equity concerns may receive inadequate consideration in standard benefit-cost analyses. This omission is especially important to overcome for issues that have substantial distributional impacts over time. Similarly, information provided by ecologists about the complex and interdependent functioning of natural systems should be considered in economic policy analyses.

cations revolution, and on efforts to restructure Federal research and development programs.

## TELECOMMUNICATIONS

The telecommunications industry plays a crucial role in our economy. Like the railroad and highway infrastructures built by earlier generations, the telecommunications infrastructure brings people together and helps firms reach their customers and suppliers quickly and cheaply. As a result, our lives are enriched and our firms and workers are more productive.

The vast opportunities created by recent advances in communications and information services will likely transform the economy and the way we live and work. Innovation in this sector is continuing at a rapid rate. Within just the past decade, the facsimile (fax) machine and the cellular telephone have ceased to be curiosities and are now commonplace. Television news is now transmitted instantaneously from the field to the studio by satellite. Access to the Internet computer network is spreading beyond the government and academic researchers that were its original users, to involve private individuals, businesses, and other government functions as well. The number and variety of cable television channels continue to grow. More and more, people work from home or on the road by computer and modem, far from their offices. The power and sophistication of personal computers in homes and offices have grown by leaps and bounds.

Even more important advances in technology are on the horizon. Technical change will permit private industry to make new products and services available. Two-way, interactive, broadband service will someday be the norm, although it is not yet clear whether the emerging broadband network will be formed from wires, fiber optic lines, wireless technologies, or hybrids thereof. The computing power available to consumers of multimedia services provided by the emerging information infrastructure will undoubtedly rise, though it remains to be seen whether that power will be lodged in a server outside the house or office, or within the home or office through a personal computer or a set-top box connected to a television.

### *Legislative Proposals and the Prospects for Growth*

The Administration seeks Federal legislation to accelerate the progress of the telecommunications and information services revolution. The Vice President has articulated five principles on which legislative and administrative reform of telecommunications policy should be based: policy should encourage private investment in the national information infrastructure, should promote and protect competition, should provide open access to the infrastructure for consumers and service providers, should preserve and advance uni-

versal service to avoid creating a society of information “haves” and “have-nots,” and should ensure flexibility so that the newly adopted regulatory framework can keep pace with rapid technological and market changes.

New Federal legislation consistent with these principles can be expected to accelerate the development of the national information infrastructure in three ways: by reducing uncertainty about the course of national and State regulation, by promoting competition throughout the telecommunications and information services industries, and by providing a mechanism for removing existing regulatory restrictions as the development of competition makes them unnecessary. Private industry will thereby be encouraged to invest more aggressively in information infrastructure and to develop new services more rapidly. The new legislation sought would also reduce the likelihood that regulation will distort the choice of technology or other investment decisions. It would allow beneficial regulatory changes to occur more quickly, more consistently, and with greater certainty than would be achieved through market-by-market regulatory reforms in the States and by the Federal Communications Commission (FCC).

According to a study by the Council of Economic Advisers, reform of the Nation’s regulatory framework could add over \$100 billion (in discounted present value) to GDP over the next decade by encouraging greater private investment to develop and deploy new telecommunications services, and by spurring new entry and greater competition throughout the telecommunications and information sector. An acceleration of private investment and of the pace at which new services become available could increase GDP through three transmission mechanisms.

First, each new job in the telecommunications and information sector should produce greater output per hour worked than the average new job in the economy. Hence, when the economy shifts inputs, especially workers, into this high-value-added sector, national wealth will increase even at full employment. This process is impeded today because existing regulations restrict entry and otherwise create distortions that limit the sector’s output. Many of these regulations have been necessary in the past to prevent even worse distortions resulting from the exercise of market power by monopolists. But as developments in technology shrink the potential scope of this monopoly power, and as regulatory reforms encourage competition, the economy can shift resources into this more productive sector, and so increase social wealth. As this happens, however, the sector’s marginal productivity advantage over other sectors should eventually diminish.

Second, the new information infrastructure will boost productivity throughout the economy. Geographically distant firms will be

able to behave more like neighbors, and new ways of working will produce changes in the innovation process, increasing the likelihood of future discoveries. If new legislation can accelerate the investments needed to develop the national information infrastructure, so that new services come on line more quickly than they would have otherwise, these productivity gains will be realized more quickly.

Third, appropriate legislation is likely to encourage industry to invest in the new technologies sooner than it otherwise would. Should the economy exhibit a tendency to operate at less than full employment at any time during the next decade, the resulting higher level of overall domestic investment would tend to offset the loss of potential GDP.

### *Reinventing Spectrum Allocations*

The FCC allocates portions of the electromagnetic spectrum for each communications service—radio and television broadcasting, cellular telephone, and so on—and issues licenses to would-be service providers. For many years the FCC selected for licenses those applicants that it believed would best serve the public interest. It made this determination by holding hearings to compare applicants' business plans, experience, and backgrounds. Because the number of competing licensees allowed in a given geographic market is limited, successful applicants have frequently earned substantial profits.

Critics of the elaborate comparative hearing process argue that its length, administrative burden, and cost to applicants outweigh any benefit to the public. The reason for choosing the one winning candidate over the many losers, all of which may be basically qualified, is often obscure. Often the successful applicant earns profits not shared by the public, thus appropriating much of the value of the public resource.

About a decade ago, the Congress authorized the FCC to use lotteries to choose among competing applicants in licensing some services. Lotteries took much less time than comparative hearings. They were criticized, however, because often the lucky winner, having paid the government nothing for the license, would turn around and sell it for a high price. This process merely delayed getting licenses into the hands of the firms that would eventually build the communications facilities and operate the services. And, like the comparative hearings, the lotteries failed to compensate the public for the private use of the resource. To address these problems, the spectrum allocation process is being reinvented to substitute public auctions for lotteries in some cases.

Economists have long recognized the advantages of auctioning spectrum licenses. An auction puts the license directly in the hands of the applicant who values it most, and is thus likely to provide

the most aggregate value to the public. An auction also allows the public to share in the financial benefits that accrue from the use of the resource. Auctions are compatible with the pursuit of other societal goals: applicants can continue to be screened for basic qualifications, and license uses can be regulated as necessary to protect the public interest. Even with these restrictions, using auctions to license spectrum is more efficient and less costly than lotteries and comparative hearings.

In 1993 the Congress authorized the FCC to invite competitive bids for initial licenses for spectrum dedicated to commercial subscription uses. The first auctions, for spectrum devoted primarily to advanced and two-way paging, took place in 1994 and yielded substantially more revenue to the government than some industry forecasters had predicted. Auctions for spectrum devoted to personal communications services (PCS) are anticipated to generate billions of dollars over the next several years.

## SCIENCE AND TECHNOLOGY

Scientific discovery and technological innovation play central roles in increasing productivity and economic growth. In the long run, it is the discovery of new ideas—better “recipes,” as distinct from merely more cooking in the traditional way with more of the same limited supply of ingredients—that reduces the cost to society of producing any given amount of goods. Ultimately these cost reductions will translate into some combination of lower prices for consumers, higher wages for workers, and higher profits for investors. Over time these changes can lead to significant, cumulative increases in living standards. Today the pace of scientific and technological progress is accelerating in tandem with the pace of the product cycle in international markets. These twin accelerations blur the lines and shrink the intervals that formerly separated basic from applied research, fundamental science from engineering and technical progress, and technological innovations from their initial commercial applications.

Wherever they originate, in the laboratory or on the factory floor, new scientific and technological ideas are often expensive to discover, yet cheap to replicate. It still costs something to draft the blueprint that captures the new idea, and something to make each unit of the product that embodies it, but once created, the idea itself is easily and often beneficially copied. Thus the economic returns to one company’s investment in innovation can pass quickly to others. Economists have estimated that, because of this tendency of new ideas to become rapidly diffused, innovators typically capture less than half the total social returns to their investments in research and development (R&D). In short, the difficulty of establishing and enforcing property rights to new ideas reduces the eco-

conomic incentive for private companies to invest in a socially and economically optimal level of R&D. Bolstering that incentive is therefore an important efficiency-enhancing function of government. Government can do so through enhanced patent protection—while bearing in mind the potential inefficiencies in production and innovation that can occur with even temporary market power—and through public support for R&D.

Even before this Administration came into office, historic changes in the global distribution of wealth and power had sparked a public reexamination of the nature and extent of Federal support for the Nation's science and technology enterprise. Much of this attention focused on the implications for Federal R&D spending of the end of the cold war and the growing technical competence of foreign-based firms in areas where U.S.-based industry had traditionally been the world leader. To respond to these changes, this Administration has reoriented the Federal R&D effort from primarily defense-related investments toward investments in a broader set of national goals, including health, prosperity, environmental responsibility, and improved quality of life, in addition to national security. Although the United States is still in the midst of a major transition in the way both the public and the private sector manage the development and commercialization of science and technology, recent changes are beginning to show positive results.

### *Trends in National R&D*

Together industry, government, and universities in the United States have typically spent more money on R&D activities than their counterparts in any other country—an estimated \$176 billion in 1994, or 2.6 percent of GDP. Indeed, in 1992, the most recent year for which comparative data are available, the United States spent 28 percent more on R&D than did Japan, Germany, and France *combined*. However, these countries collectively spent nearly as much as the United States on nondefense R&D. As a percentage of GDP, U.S. spending for civilian R&D stood at 2.1 percent in 1992, compared with 2.4 percent in Germany and 2.8 percent in Japan.

Long-term real growth in U.S. R&D has also been slow: just 0.9 percent per year on average between 1985 and 1993, compared with 5.3 percent per year between 1975 and 1985. This slowdown of total R&D growth has been paralleled by slower growth in private R&D. In 1994 R&D spending by U.S. industry decreased by 0.5 percent in real terms; this followed an average annual real growth rate of only 1.2 percent between 1986 and 1993, compared with a robust real annual growth rate of 6.7 percent between 1976 and 1985.

Some of the slowdown in R&D spending may reflect the recent recession. The slowdown may also reflect recent corporate cost-cut-

ting drives that have shifted R&D spending toward in-house development of technologies closer to commercialization and that have prompted collaborative research, which is less costly to individual firms. (More than 350 multifirm collaborative research ventures, among them many R&D consortia, have been created in the United States since 1985, as well as more than 1,000 university-industry research centers, 72 percent of which were established with State or Federal support.) Finally, the slowdown in R&D spending reflects the end of the cold war. R&D spending by industry is highly concentrated in the United States—eight industries account for more than 80 percent of the total—and the top two, aircraft and communications equipment, are closely related to defense.

The deceleration of growth in spending for R&D has been accompanied by a shift in the sources of R&D funds and a shift in where the R&D is actually performed. Nongovernmental sources of funding have become increasingly important. Universities' share of R&D performance rose to 12 percent by 1993 from just 9 percent in 1985. Although Federal spending on all university research has risen, the share of university research funding that comes from the government has declined and recent financial problems of some universities may jeopardize their direct expenditures on research. Meanwhile industrial support for academic research has grown dramatically, from 3.9 percent of the total in 1980 to 7.3 percent in 1993. Industrial firms are still responsible for performing most of the Nation's R&D—\$125 billion worth, or 71 percent in 1994—but even if their increased support for academic research is included, their share of the total national R&D effort has fallen since 1985.

Recent trends in U.S. R&D investment leave some analysts concerned that the Nation is spending too little on the *basic* research that will drive tomorrow's revolutionary breakthroughs. This concern is supported by empirical evidence that suggests there are large unexploited economic gains to be realized from raising our society's level of scientific activity and technological research and development; in the past, the social rate of return on such investments has been high. As a central component and stimulus of U.S. innovation, Federal R&D investment can lead technological innovation nationwide and affect the Nation's military posture, a variety of important social objectives, and the competitive performance of U.S.-based firms in domestic and foreign markets.

### *Confronting the Cold War Legacy*

This Administration has realigned Federal spending for R&D so that it more equally balances civilian and military priorities. The purpose of this shift is not only to strengthen civilian industry, but also to promote the cost-effective development of new technologies for national defense and stimulate the creation of an integrated ci-

villian-military industrial base. The Administration is also reorienting the Federal Government's R&D portfolio toward the achievement of important social objectives that would otherwise be inadequately addressed. These include the development of cleaner and more efficient transportation systems, more rapid and widespread diffusion of technological and managerial innovations to small and medium-sized manufacturers, environmental remediation, and pollution prevention.

The Administration's R&D strategy relies on a combination of grant programs in which industry and government share the costs; national initiatives in areas such as manufacturing, transportation, high-speed computing and telecommunications, and environmental technology; defense reinvestment efforts; and enhanced technology-transfer mechanisms (for example, the increased use of cooperative research and development agreements, or CRADAs, which ease private companies' access to the scientific and technological resources in U.S. Government laboratories). These programs require Federal agencies to work more closely with commercial industry to strengthen the technological underpinnings of the entire economy.

Reflecting cold war concerns, national security long commanded the largest share of Federal R&D funds. Spending priorities shifted even further—dramatically so—toward defense programs in the 1980s. The defense share of Federal R&D spending reached its most recent peak in 1987, when it accounted for 69 percent of the total. The defense share declined from 59 percent to 56 percent between 1992 and 1994, indicating progress toward the Administration's goal of restoring a 50–50 split by 1998.

The national security focus of U.S. R&D spending during the cold war has also affected the agenda for government support of much industrial and university-based science. During the late 1980s, for example, the Defense Department provided 32 percent of all funds for academic engineering research. While Federal funds account for just one-fourth of the money private industry spends to support R&D, 76 percent of that Federal support goes to aerospace and communications equipment firms, primarily for development of weapons and related systems of military application. The cold war emphasis on defense also affected the structure and objectives of the Nation's Federal laboratory system.

In an era of increasing budget pressure—an era, too, in which commercial technology development defines the leading edge in key strategic areas—the maintenance of a defense industrial base separate from commercially oriented industry is in many areas economically inefficient. Recognizing this, the Defense Department is now working more closely with firms engaged in commercial and dual-use production than in the past (dual-use goods are those with both military and commercial uses). Dual-use R&D programs, in-

cluding the Administration's Technology Reinvestment Project (TRP), are a different—and more economically efficient—way of carrying out the Defense Department's traditional R&D activities. The TRP has played a role in facilitating new partnerships between defense and commercial industry. Combined with the procurement reforms discussed earlier, the program is expected to make the Defense Department a more attractive customer for civilian producers. It is also exposing traditional defense contractors to innovative management and production techniques that can lower their costs and encourage more rapid technology transfer from the commercial sector.

Other important examples of Defense Department dual-use R&D initiatives include the development of flat panel display technology (Box 4-7) and microwave and millimeter wave monolithic integrated circuit technology (MIMIC). Commercial applications for MIMIC devices include their use in collision avoidance systems for automobiles, satellite communications, and portable telephones. The development of dual-use components that can be built on the same production line as the military-only versions has resulted in lower cost devices for the military and new, commercially marketable products for U.S. firms. Commercial technology cannot supply defense needs in all instances—tanks and nuclear attack submarines, for example, require technology that is defense-unique. But a great many defense needs can be served more efficiently—and less expensively—by commercial firms and facilities. Indeed, as flexible manufacturing systems are developed and more widely adopted, it will be increasingly possible to produce in a single plant both low-volume military equipment and high-volume commercial equipment.

### *Private Innovation and Public Goods*

Beyond reorienting the government's own R&D portfolio, this Administration has worked on many fronts to increase the level of private innovation—by supporting public-private partnerships for the provision of industry-specific public goods, by supporting the extension of the R&D tax credit (discussed in Chapter 3), and by proposing changes in intellectual property law that will increase the incentives for efficient creation and use of private inventions.

*Industry-specific public goods.* It has already been noted that individual firms typically have too little incentive to invest in R&D, because an innovation and its payoffs may pass quickly to other firms and to consumers, who paid little or nothing to create the innovation in the first place. The constant creation and rapid diffusion of scientific discovery and technological innovation are good for the economy as a whole, but investment in innovation may not appear to be a prudent move for any individual firm.

#### **Box 4-7.—The National Flat Panel Display Initiative**

Today's computers display information in one of two ways: on cathode ray tubes, the bulky devices now used in television sets and most desktop computers; or on flat panel displays, the thin, light, rugged screens used in laptop computers. Flat panel displays are already key components in many consumer products: facsimile machines, portable telephones, compact disc players, and videocassette recorders, as well as laptops. They will also transform future battlefields, where they will be used to satisfy the huge demand for information from myriad sensors, providing real-time intelligence to combatants in aircraft, ships, tanks, and the infantry.

A recently completed interagency study of flat panel displays shows them to be increasingly important in military applications. But with 95 percent of supply controlled by foreign producers, whose willingness to work with the Defense Department cannot be taken for granted, access to the latest flat panel display technologies for timely incorporation into defense systems is not assured. The Department of Defense requires early, certain, and affordable access in order to integrate displays into systems and to work out tactics for their use in military situations.

To answer these national security concerns, the Defense Department is implementing the National Flat Panel Display Initiative, a 5-year, \$587 million program of support for research and development into flat panel displays, including research on their manufacture. Part of this precompetitive R&D funding is focused on ensuring that the research leads to actual products that will be used in important military applications. A portion will go to an innovative program in which firms with a demonstrated commitment to build current-generation displays share with the Pentagon the burden of developing dual-use technology for next-generation products and manufacturing processes. Matching funds will be awarded in competitions open to a variety of flat panel display technologies.

A similar logic is at work with regard to investments in industry-specific public goods. Investments in a particular technological breakthrough may create large economic benefits for the industry as a whole, from which no single producer or subset of producers can be excluded, even though the breakthrough was financed and achieved by others.

The Commerce Department's Advanced Technology Program (ATP) is a policy experiment to test whether government-industry

partnerships can overcome market barriers to the provision of industry-specific public goods. Take, for example, the barriers that have impeded some potentially lucrative technical improvements in the materials and manufacturing processes for printed-wiring boards (PWBs). PWBs comprise the backbone and much of the nervous system of virtually every modern electronic product. Each increase in the speed and complexity of electronic devices has increased the density of the PWB's lacework of copper lines, which must be embroidered to tiny plated holes. By the early 1990s, PWBs were beginning to reach the fundamental physical limits imposed by both materials and manufacturing processes. PWB market analysts understood that relatively minor material or process improvements could result in sizable cost savings for the entire industry, yet no single company or group of companies was willing to risk a large-scale investment.

The ATP stepped into the breach, agreeing to help finance a 5-year research plan developed by an industry consortium, as long as the consortium's members were themselves willing to put up at least half of the money. The \$28 million effort began in 1991. A study conducted in 1993 found that after 2 years the project had already saved the participants about \$13.5 million simply by helping them to avoid redundant research, to share results more rapidly, and to access each other's specialized know-how and facilities.

The ATP itself is only 4 years old, and the Administration is creating long-term and intermediate performance measures in order to rigorously evaluate its economic impact. This effort to promote innovation in the private sector is itself an innovation in the relationship between industry and the government, one that was begun during the previous Administration.

*Intellectual property.* Incentives for technological innovation are affected by the regime of intellectual property rights, including patents and copyrights. Absent well-defined and effectively enforced intellectual property rights, rivals could readily duplicate new inventions or writings without offering compensation; this reduces the innovator's likely profit and mutes the incentive to develop and market his or her creations in the first place.

The economics of patent protection have long been understood as posing the following policy tradeoff: patent protection encourages innovation, but that social benefit comes at the cost of allowing some successful innovators to price the resulting products well above marginal cost. In recognition of this tradeoff, patent protection is granted for a limited term of years. Yet appropriate public policy toward innovation must also recognize a second tradeoff, involving the scope rather than the term of patents.

The scope or breadth of patents refers to the extent to which a new innovation must differ from an existing one in order to avoid

infringing on the latter's patent rights. Under some circumstances, narrowing the scope of patent rights would increase aggregate innovation rates. When an inventor's patent rights are broad in scope, extending to a relatively wide range of similar innovations, later inventors will not be permitted to use their own innovations that fall within that broad penumbra of similarity, without the first inventor's permission. Recognizing that such permission will frequently involve negotiating a payment to the first inventor (a negotiation in which the second inventor will sometimes have little bargaining leverage), the second inventor may be discouraged from exploring his or her new ideas to begin with. Or, if the second innovation is produced but the first and second innovators dispute its value, and in consequence are unable to reach a bargain, the second innovation may not be used until the patent expires. Giving broad scope to patent rights may thus discourage potential innovators from undertaking R&D effort in areas likely to produce follow-on inventions. Yet in other cases, narrowing the scope of intellectual property rights would reduce aggregate innovation rates by lowering the value of initial innovations, thus reducing the incentive for initial innovation.

In part to promote innovation, the U.S. Patent and Trademark Office has proposed legislation to permit greater third-party participation in patent reexamination proceedings. Under this proposal, industry experts and rivals would have a greater opportunity to present information about novelty or obviousness to the patent examiner after a patent is issued. In addition, the Department of Justice has drafted proposed new antitrust guidelines for the licensing and acquisition of intellectual property. By clarifying the conditions under which trade restraints involving intellectual property, like those involving other forms of property, can harm competition and run afoul of the antitrust laws, the Justice Department seeks to explain how antitrust law and intellectual property protections can be harmonized to encourage innovation and efficiency, and so benefit consumers.

## CONCLUSION

Adam Smith published *The Wealth of Nations* in 1776, the same year Thomas Jefferson wrote the Declaration of Independence. Since that time the United States has become a vastly larger and more prosperous Nation. One reason is that, throughout our history, government has worked in partnership with the private sector to promote competition, discourage externalities, and provide public goods. The policy challenges that face us vary from generation to generation, and government institutions appropriate for addressing one era's problems must be reinvented for the next. But in every

era, the role of government in helping remedy market failures remains central for enhancing the Nation's well-being.

## CHAPTER 5

# Improving Skills and Incomes

BETWEEN 1973 AND 1994 the U.S. economy created 37 million additional jobs. This growth in employment absorbed an unprecedented number of new entrants, including millions of baby-boomers and women, into the work force and surpassed the record of the other large industrial nations. During this same period, however, slow productivity growth in the United States was reflected in slow growth in average real compensation. Indeed, real compensation per employed person increased more slowly in the United States than in the other large industrial countries (Chart 5-1). Even worse, income growth stagnated in the middle of the income distribution and declined sharply for those at the low end, causing insecurity and falling living standards for many Americans. The large declines in the real wages of less educated and lower paid workers were associated with increased inequality in family incomes and with growing rates of poverty among working families. For a growing number of workers without college degrees or significant on-the-job training, the American dream faded.

This chapter examines the factors that underlie the disappointing growth in the incomes of most American workers over the past 20 years and describes this Administration's policy responses.

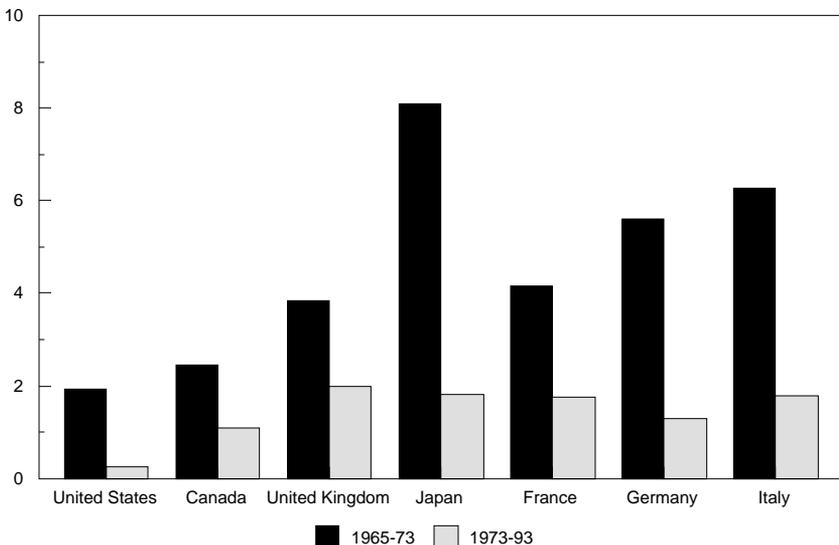
The sluggish growth of incomes is due to dramatic changes in technology and in global competition that have affected industrialized economies around the world, reducing the relative demand for workers with less education and training. Industrialized nations have differed in their response to these common changes. Since 1973, the U.S. economy has created more jobs than all of the European Community. But at the same time the other industrialized economies have experienced more rapid growth in wages and productivity and slower growth in inequality.

Although these differing patterns appear to suggest a trade-off between rapid job growth and high wage and productivity growth, this Administration believes that such a trade-off is not inevitable. To sustain rapid job growth while increasing growth in wages and productivity, the Administration has undertaken an ambitious agenda of lifelong learning to help American workers respond to the challenges and grasp the opportunities afforded by the new economic realities.

Chart 5-1 **Growth in Real Compensation per Person Employed**

Real compensation has grown more slowly in the United States than in the other major industrialized countries.

Average annual percent change



Note: Data for Canada begin with 1966.

Source: Organization for Economic Cooperation and Development.

## WHAT HAS HAPPENED TO WAGES AND INCOMES

Compared with the preceding decades, family incomes over the last 20 years have either grown more slowly or actually declined at all income levels. This discouraging picture emerges no matter what statistical measure of compensation or inflation one chooses (Box 5-1).

### SLOW GROWTH IN PRODUCTIVITY AND AVERAGE WAGES

Growth in average real compensation declined from 3.0 percent a year between 1948 and 1973 to 0.7 percent a year between 1973 and 1993. This decline parallels a similar drop in worker productivity growth, from 2.5 percent per year to only 0.9 percent. If real compensation had continued to grow at the same rate after 1973 as it had in the previous 25 years, the average compensation of a full-time worker in the United States in 1993 would have been \$62,400 instead of \$40,000.

The slowdown in wage growth can be seen within the span of a single individual's career. Sixty-two percent of men aged 22 to 26 in 1967 enjoyed earnings growth of over 40 percent by 1979; only 9 percent suffered earnings declines. In contrast, only 42 percent of young men in the 1980s enjoyed wage gains over 40 percent,

while the proportion of those with wage declines tripled to 26 per cent.

### **Box 5-1.—Measuring Trends in Pay and Inequality**

Measures of changes in real pay differ across a number of dimensions: how inflation is adjusted for; whether pay is measured as wages per hour or earnings per year; whether it is limited to cash wages or includes benefits (the latter is referred to as total compensation); and whether the mean or the median is chosen as the measure of central tendency. All standard measures of pay show both a slowing of overall growth and a concentration of the bad news among those with less than a college degree; nevertheless, different measures show somewhat different patterns over the last few decades (Chart 5-2).

*Mean and median wages differ.* The mean is the average of all wages earned, whereas the median is the wage of the worker who falls precisely at the middle of the distribution, with half of all workers earning more and half less. Because wages at the high end of the distribution have risen much more rapidly since 1973 than those in the middle, the mean wage has risen more rapidly than the median.

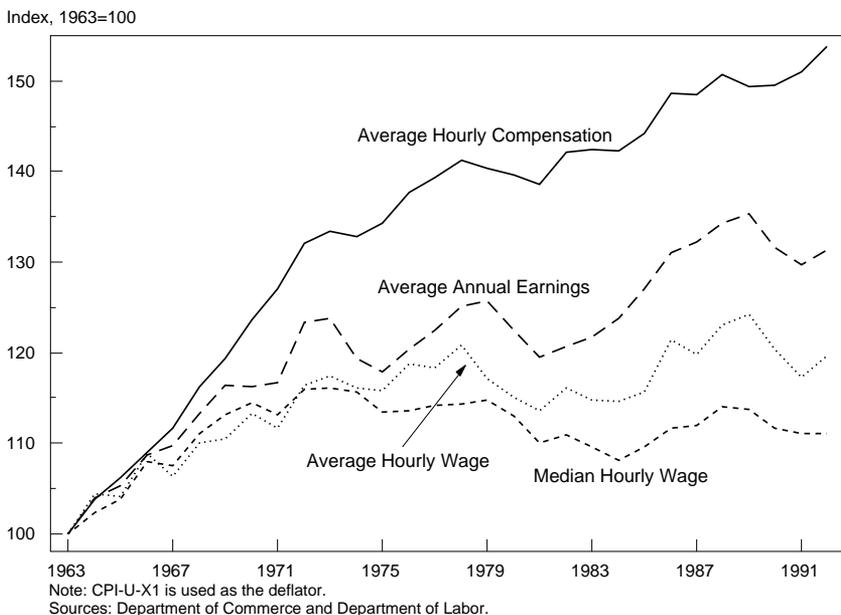
*Wages differ from total compensation.* Total compensation includes such benefits as health insurance and employers' contributions to pensions in addition to wages. Expenditures on these benefits, led by rising prices for health care, have grown rapidly since 1973. Thus, hourly compensation continues to grow more rapidly than wages, although both have slowed in the last 2 decades.

*Hourly wages differ from annual earnings* because the number of hours worked per year is not constant. The trend in overall hours is not clear, with employers, but not employees, reporting declining hours. This divergence may be due to an increase in unpaid overtime or work at home, but it remains an area of active research.

*The method of adjusting for inflation makes a difference.* As noted in Chapter 2, it is possible that actual increases in workers' cost of living have been smaller than trends in the consumer price index (CPI) would suggest. Consequently, standard measures that rely on the CPI may understate the growth in real pay. But the basic finding of slower wage growth since 1973 holds for all standard measures of inflation (although all suffer from possible mismeasurement of quality changes). In any case, the finding that wage dispersion has grown holds regardless of how inflation is measured.

Chart 5-2 **Growth in Various Measures of Real Pay**

Most measures of wages and earnings show a flattening of growth after 1973.



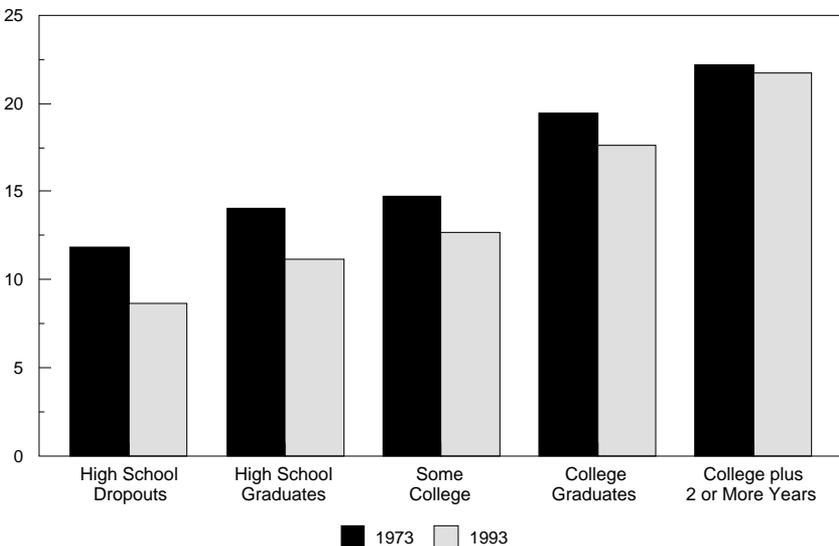
## SLOWDOWN FOR MOST, STAGNATION FOR MANY

What growth there has been has not been shared by all Americans. The median real hourly wage fell by 6 percent from 1973 to 1993. The middle of the income distribution was hurt more by the slowdown than the top, largely reflecting a dramatic shift in the rewards offered in the labor market against those without a college degree or a high level of skill (Chart 5-3). For example, the average real wage of male high school graduates fell 20 percent, from \$14.02 per hour in 1973 (measured in 1993 dollars) to \$11.19 per hour in 1993. The decline was even steeper for male high school dropouts, whose average wage fell 27 percent over the same period, from \$11.85 to \$8.64 per hour. At the same time, the average hourly wage for males with a college degree but no further education fell by 9 percent, from \$19.41 to \$17.62. Hourly wages of those with a college degree and 2 or more years of additional education fell by only 2 percent, from \$22.20 to \$21.71. Trends for women show a similar though less extreme widening in the wage differential between those who went to college and those who did not (Chart 5-4). Wage dispersion also increased within demographic and skill groups. The wages of individuals of the same age, education, and sex, working in the same industry and occupation, were more unequal in the early 1990s than 20 years earlier.

### Chart 5-3 Real Hourly Wages for Men by Level of Education

Real wages have fallen for men of all education levels, but those with the least education have been hurt the most.

1993 dollars

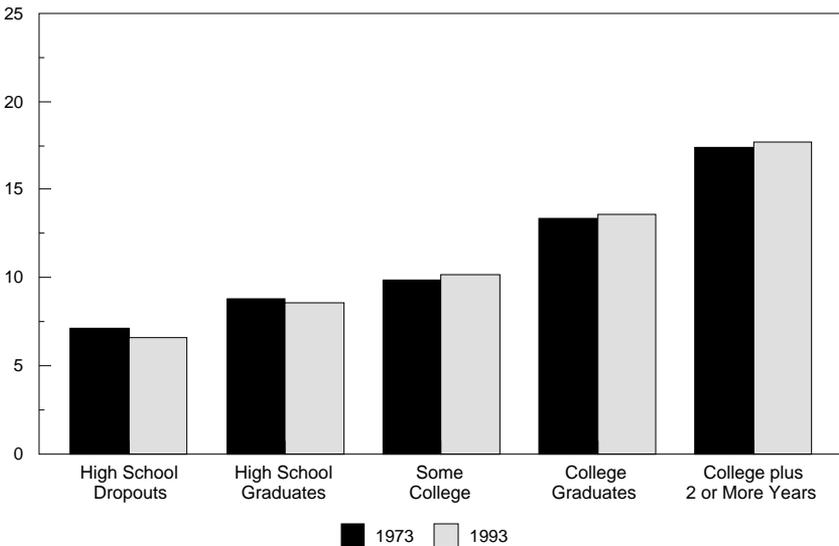


Source: Economic Policy Institute.

### Chart 5-4 Real Hourly Wages for Women by Level of Education

Women with at least some college education have seen modest wage gains, while wages have fallen for those without.

1993 dollars



Source: Economic Policy Institute.

Another perspective on the decline in real wages can be seen by examining trends at points in the wage distribution other than the median (Chart 5-5). Between 1973 and 1993 real hourly wages of full-time male workers at the 10th percentile (that is, those whose wages are just above those of the lowest-paid 10 percent of workers) declined 16 percent, while real hourly wages at the median fell 12 percent. Over the same two decades, workers at the 90th percentile eked out a wage *gain* of 2 percent. The net effect is that levels of wage inequality for men have been greater in recent years than at any time since 1940. Women received wage increases throughout the wage distribution, but the gains were concentrated at the top. Women at the 10th percentile earned 6 percent higher wages, while those at the 90th percentile had gains of 24 percent (Chart 5-6).

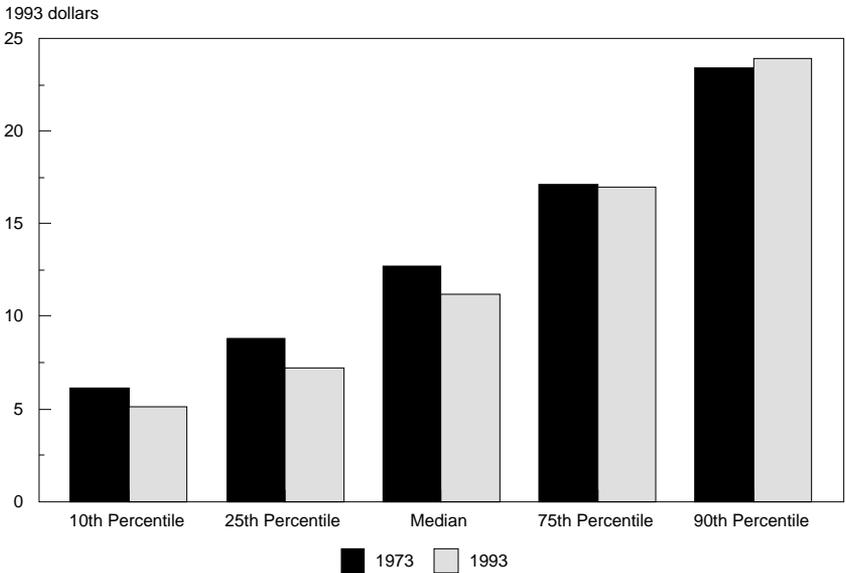
The decline in wages for high school graduates was matched by a decline in benefits coverage. For example, whereas the proportion of the work force with education past college who have company- or union-provided health insurance has remained almost constant at over 75 percent since 1979, the comparable proportion of those with less education has declined markedly. In 1992, only 60 percent of high school graduates and fewer than 40 percent of those who did not graduate from high school had company- or union-provided health insurance.

As already noted, women were an important exception to the broad pattern of wage declines. Overall, the median real hourly wage of women who worked full time, year round, rose by 9 percent from 1973 to 1993, and rose as a proportion of the median wage for men from 63 percent in 1973 to 78 percent in 1993. Much of the improvement in women's earnings relative to those of men was due to the growing labor market experience of working women. In 1975 the average working woman had put in not much more than half (57 percent) the years of full-time work that the average male worker had; by 1987 that figure had risen to 73 percent. A second important factor was that women increasingly went to work in higher paid occupations that had previously been dominated by males. Statistics from several traditionally male professions reveal the size of the shift: from 1970-92 the proportion of female graduates from medical schools rose from 8 percent to 36 percent; the proportion graduating from law schools rose from 5 percent to 43 percent; and the proportion from dental schools from less than 0.1 percent to 32 percent.

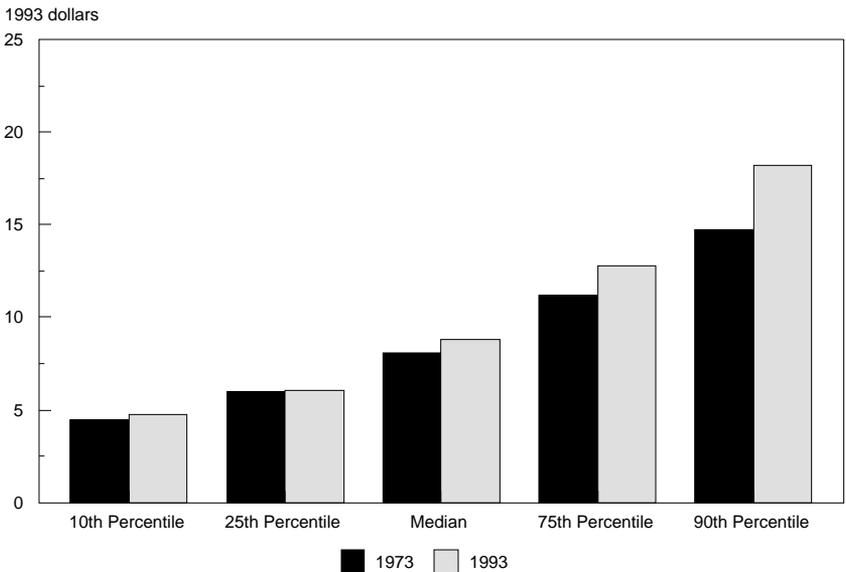
## FAMILY INCOMES

Incomes have stagnated for many American families as well as for individual workers. Family income as reported in U.S. statistics differs from annual earnings per worker both because there can be

**Chart 5-5 Real Hourly Wages for Men by Wage Percentile**  
 Real wages have declined for all but the highest-paid male workers.



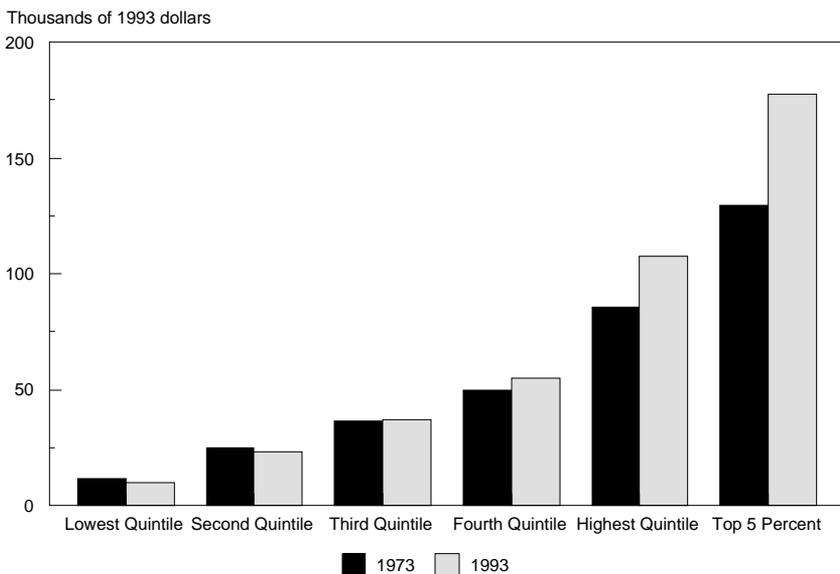
**Chart 5-6 Real Hourly Wages for Women by Wage Percentile**  
 Women at all wage levels received increases in pay, but those at the top gained the most.



more (or fewer) than one wage earner in a family and because family income includes nonwage income such as interest, dividends, profits, and government transfer payments.

The median family income in the United States grew a meager 0.2 percent in the entire 20 years between 1973 and 1993—although hardly impressive, this performance at least was better than the outright decline in median hourly wages. In addition, there was a significant widening in the family income distribution. Average incomes rose 25 percent for those families in the upper fifth of the distribution, but fell by 15 percent among the poorest fifth of families (Chart 5–7). An important reason why median family incomes rose slightly while the median wage was declining is that married women now work more hours for pay. Between 1973 and 1992 the proportion of married couple families in which the wife worked for pay grew from 42 percent to 59 percent and those wives who worked for pay worked more hours.

Chart 5-7 **Average Family Income by Quintile**  
 Incomes have fallen for the poorest forty percent of families.



Source: Department of Commerce.

## RISING POVERTY

From 1960 to 1973 the Nation's overall poverty rate fell from 22 percent to 11 percent; it then rose to 15 percent by 1993. Poverty rates for children have been even higher: 27 percent in 1960, 14 percent in 1973, and 23 percent in 1993. The observed rise in poverty remains even after taxes and transfers are accounted for: pov-

erty rates by this measure rose from 9 percent in 1979 to 12 percent in 1993 (comparable figures are not available prior to 1979). The increase in poverty has occurred in spite of slow growth in average income over the last 20 years.

A large portion of the rise in poverty is due both to the increase in wage inequality discussed above and to a rise in the proportion of female-headed households. The proportion of children under 18 who live with one parent has nearly tripled, from 9 percent in 1960 to almost 27 percent in 1992. More than half of the children born in America today will spend time living in a single-parent home, either because of divorce or because the parents were never married. Because the poverty rate in female-headed families with children is higher, at 46 percent, than in other families, increases in the proportion of families headed by a single parent increase the poverty rate.

Many explanations for the increase in single parenthood have been proposed, ranging from the rise in women's labor force participation (which has increased women's ability to live without a husband), to the falling wages and employment of the men they might marry, to cultural changes reducing the stigma of divorce and unwed motherhood.

Some have blamed the rise in female-headed households on the welfare system. Although the current system has a number of problems (discussed in Chapter 1), careful studies have concluded that it has not played a major role in the increase in female-headed households. Nationwide, average benefits under the aid to families with dependent children (AFDC) and food stamp programs rose from 1964 to 1972, and during those years single-parenthood rates did rise; however, those rates continued to rise over the next 14 years even as the level of benefits fell by 20 percent in inflation-adjusted terms. In addition, States with more generous AFDC benefits do not have a higher proportion of children in single-parent households. Although welfare has not caused most of the changes in family structure, the welfare system does have aspects that discourage marriage—elements of the Administration's welfare reform proposal, discussed in Chapter 1, address these problems.

## THE DECLINING FORTUNES OF BLACK AMERICANS

Black workers have been particularly harmed by recent earnings trends. After a decade of progress following the Civil Rights Act of 1964, the trend in the relative earnings of blacks to whites reversed. In the early 1960s, the wage gap between black and white men of similar age and with similar education was over 20 percent. This gap closed to less than 10 percent in the mid-1970s, but a significant proportion of this gain has since eroded. In addition, the employment-to-population ratio for black men over 20 years old has

declined, from about 6 percentage points less than the rate for whites to about 9 percentage points, over the last 20 years. The drop in employment is due to a decline in black labor force participation as well as increases in black unemployment. In some inner-city neighborhoods as few as 40 percent of black men are employed—that is less than three-fifths the male employment rate for the Nation as a whole.

In contrast to the decline in relative earnings, years of school completed and test scores among blacks have risen relative to whites. The difference in high school dropout rates between blacks and whites has narrowed sharply. From 1973 to 1992, dropout rates for blacks fell from 12.3 percentage points more than for whites to only 4.1 percentage points more. Black educational attainment (as measured by the National Assessment for Educational Progress) generally increased significantly from 1978 to 1992, while white test scores rose only slightly. But in many inner-city districts the dropout rate remains above 50 percent, and Hispanic dropout rates remain very high.

Inner cities have experienced poor job opportunities, more concentrated poverty, and low-quality schools. At the same time a majority of young black male high school dropouts have turned to illegal activities for income. Surveys indicate that young black men are more likely now than a decade ago to perceive greater rewards from crime than from regular employment. Young persons' participation in crime has adverse effects on their likelihood of future employment, especially if their activities lead to incarceration. These problems feed on each other: a child's chances of attending a low-quality school, becoming a teen parent, dropping out of school, living with only one parent, and having parents who do not work for pay are all associated with living in a poor neighborhood.

Racial and ethnic discrimination remains a significant barrier for minorities in the job market. Direct measures of discrimination in employment are available from experiments in which similarly qualified white and black candidates, or Anglo and Hispanic candidates, applied for the same job. In one such experiment, white applicants were found to be 24 percent more likely to receive significantly better treatment than black applicants, and Anglo applicants were 22 percent more likely to receive significantly better treatment than Hispanic applicants. In addition, among applicants who reached the interview stage, whites were over four times more likely to be offered a job than were blacks with similar qualifications.

Government antidiscrimination efforts became less aggressive in the 1980s, and this may account for some of the persistence of discrimination. An analysis of data collected by the Office of Federal Contract Compliance Programs (OFCCP) shows that enforcement

of affirmative action rules between 1974 and 1980 improved the job opportunities of black men and women as well as white women with Federal contractors. In the 1980–84 period the activities of the OFCCP were not as spirited as previously, and coverage by Federal affirmative action policies was no longer associated with gains in black and female employment.

## CHANGES IN THE ECONOMY

Although a complete explanation of the declining economic fortunes of so many American workers and families is lacking, most economists believe that a shift in the demand for labor in favor of more highly skilled, more highly educated workers has played a key role. Such a shift is consistent with the fact that even though the percentage of the labor force with a college degree increased from 16.4 percent in 1973 to 27 percent in 1993, the same period saw a pronounced increase in the relative wages of college graduates (Charts 5–3 and 5–4).

In part, the shift in demand in favor of more educated workers reflects a shift in employment away from those goods-producing sectors that have disproportionately provided high-wage opportunities for blue-collar men, toward medical, business, and other services that disproportionately employ college graduates and women. In addition, employment has grown in such low-wage sectors as retail trade. These interindustry shifts appear to explain some of the decline in the wages of high school graduates over the last 20 years.

Intensifying global competition is also cited as a factor in putting downward pressure on the wages of less educated workers. However, a number of studies have found that the easily measured direct effects of trade on the wage distribution were small, implying that the vast majority of the demand shift originated domestically.

These effects of trade may be larger if the internationalization of the U.S. economy also affects wages indirectly—for example, if the threat of increased import competition or of the relocation of a factory to another country undermines workers' bargaining power. It is not known how important such effects have been. Trade may also become a more important factor in the future, as international commerce continues to expand.

Immigration has increased the relative supply of less skilled labor in the United States and has contributed to the increasing inequality of income, but the effect has been small. One study found that immigration explained less than 1 percent of the change in the college-high school wage differential between 1980 and 1988. Although immigration flows were considerably larger in the late 1980s than the early 1980s, this study makes it seem unlikely that

the recent contribution of immigration could be more than a few percent of the total change.

Within-industry shifts in labor demand away from less educated workers are the most important factor behind their eroding wages, not the shift out of manufacturing. On the basis of current research—much of which remains anecdotal or indirect in nature—most economists believe that such shifts in turn are primarily the result of economy-wide technological and organizational changes in how work is performed. The computerization of work appears important. Recent empirical evidence indicates that workers who use computers are paid on average 15 percent higher wages than those who do not. And the use of computers in the workplace has increased significantly in recent years: between 1984 and 1993 the share of the labor force using computers on the job increased from 25 percent to 47 percent.

In addition to shifts in labor demand, two institutional factors appear to have contributed to the increase in earnings inequality over the last 20 years. One of these is the decline in the proportion of workers belonging to unions. Empirical evidence suggests that unions tend to raise wages for workers who would otherwise be in the bottom half of the wage distribution. The share of the labor force belonging to unions fell from 26 percent in 1973 to 16 percent (and only 11 percent of the private sector labor force) today. According to recent studies, the precipitous decline in unionization explains a modest but significant portion of the increase in wage inequality during the last 15 years, especially among men.

The decline in the real value of the minimum wage has further contributed to greater wage dispersion. Adjusted for inflation, by 1995 the minimum wage has fallen by about 50 cents since 1991 and is 29 percent below its 1979 level, leaving it at its second-lowest level since the 1950s. Because women are almost twice as likely as men to work at minimum-wage jobs, the erosion of its value has had its largest effect at the lower end of the female wage distribution. Recent empirical research finds that modest increases in the minimum wage from historically low levels in the late 1980s were associated with reductions in both wage and income inequality without significant adverse effects on employment.

Of workers affected by the most recent (April 1990) increase in the minimum wage, 36 percent were the only wage earner in the family, and the average minimum-wage worker contributed about half of his or her family's total earnings. Contrary to some press reports emphasizing the youth of minimum-wage recipients, 70 percent were aged 20 and over. In part because of the changes in the wage structure discussed above, workers affected by this change in the minimum wage were more likely to be poor than in the past. About 20 percent of minimum-wage earners were poor,

and another 13 percent were near poor (earning between 100 and 150 percent of the poverty line).

## IMPROVING EDUCATION AND TRAINING

It is becoming increasingly difficult for those without higher education to earn enough to support a traditional middle-class standard of living. Increasingly, however, a high school education is not enough. Fewer high-wage jobs remain for high school graduates, and even many workers with college educations face the prospect of stagnant wages. This is a fundamental change in the economy. Although government is not the cause, it has the ability and the responsibility to improve the way Americans are educated and trained so as to mitigate this adverse trend.

This Administration views education as, ideally, a lifelong process for all workers, particularly in the changing economic environment of today. Improved education and training opportunities not only should have a direct effect in increasing the incomes of those who take advantage of them, but may as a side effect improve the incomes of unskilled workers as well, as their relative supply is decreased.

In designing programs to promote lifelong learning, Federal policies operate in an environment where education is primarily the province of States and localities, and training is provided primarily by employers. Thus, the Federal Government's most effective role is often to serve as a catalyst for change.

Evaluations of many of the Federal Government's education and training programs have questioned their efficacy, although careful studies have found some programs to be highly successful. In designing new programs, the Administration has attempted to learn from these experiences, to imitate the successes and avoid the failures. In predicting future performance, it would be excessively pessimistic simply to extrapolate from the past failures; on the other hand, it would perhaps be overly optimistic to believe that we can bring all programs up to the level of the most successful just by replicating their best features. Yet there are certain features that many successful programs have in common—such as integrating different services to address problems with multiple aspects, and providing incentives that reward success—whose scope for broader application is far from exhausted.

## THE QUALITY OF AMERICAN EDUCATION

By many measures, the quality of education in the United States has improved in recent years. Test scores in reading, writing, mathematics, and science have generally risen over the past decade for almost all ages and racial and ethnic groups. As noted above,

dropout rates have fallen, declining most sharply for black students. Enrollments in both preschool and postsecondary school have increased. Preschool enrollment rates have risen since 1970 from 14 percent of children aged 3 to 4 years to one-third. The percentage of high school graduates who enrolled in college following graduation increased from 49 percent in 1980 to 62 percent in 1992. Few other countries have postsecondary enrollment rates as high as those in the United States.

The United States still has far to go, however, to ensure that all its young people are acquiring the knowledge and skills they need to obtain high-paying jobs and adapt to future changes in the economy. High school dropout rates, for example, are still high, nearly 13 percent overall, and the dropout rate for Hispanics is over twice as high. Comparisons of U.S. and foreign test scores give additional cause for concern. Although test scores are imperfect measures of school quality, scores of U.S. students have generally risen. However, in the math portion of the International Assessment of Educational Progress in recent years, the United States remains among the industrialized world's laggards. U.S. students at both the 9-year-old and 13-year-old levels not only trail their Taiwanese and Korean counterparts—the world leaders in this area—but also lag behind students in every other major nation participating in the test.

## THE IMPLICATIONS OF RISING RETURNS TO EDUCATION

Numerous studies have established that workers with more education earn substantially higher wages than workers with similar characteristics, such as age, experience, race, and sex, but with less education. However, this relation does not necessarily imply that raising the educational level of those who are now undereducated will lift their earnings substantially. It may be that those students who obtain the most schooling are those who start out with greater ability. Nevertheless, a number of innovative studies that address this problem still support the conclusion that, on average, students at all skill levels gain substantially from additional education. These results are consistent with the thesis that for many students growing up in low-income households, limitations on access to information and to funds for paying for education, not lack of payoff from further schooling, are major causes of their lower educational attainment.

## POLICIES TO PROMOTE A LIFETIME OF LEARNING

The Goals 2000: Educate America Act, enacted last year, sets eight ambitious national education goals to be achieved by the end of the decade:

- *School readiness.* All children will start school ready to learn.
- *Improved student achievement.* All students will demonstrate competence in challenging subject matter in core academic subjects.
- *Best in math and science.* U.S. students will be first in the world in mathematics and science achievement.
- *Safe, disciplined, and drug-free schools.* Every school will be free from violence, disruptive behavior, and illegal drugs.
- *Increased graduation rate.* The high school graduation rate will improve to at least 90 percent.
- *Teacher education and professional development.* All teachers will have the opportunity to acquire the knowledge and skills needed to prepare their students for the next century.
- *Parental involvement.* Every school will promote parent-teacher partnerships that will increase parents' involvement in the social and academic enrichment of their children.
- *Adult literacy and lifelong learning.* Every adult will be literate and possess the skills necessary to compete in a global economy.

These goals establish a framework for a lifetime of continuous learning, starting before kindergarten and continuing throughout adulthood. New opportunities for all Americans to engage in lifelong learning should help rebuild the American dream that working hard and playing by the rules will lead to a higher standard of living.

### *Readiness to Learn*

The first national goal is to ensure that all children start school ready to learn. Even good schools will have trouble educating children who come to school unprepared to learn because of poor nutrition or for other reasons. Some of these children will always find themselves struggling to catch up. The Administration is committed to expanding two programs that promote early cognitive and physical development and help prepare children for school. The first is the Special Supplemental Food Program for Women, Infants, and Children (WIC), which provides food supplements and health education to 6 million low-income pregnant women, new mothers, and their children up to age 5 annually. Funding for WIC increased from \$2.6 billion in 1992 to \$3.5 billion in 1995, with \$3.8 billion proposed for 1996. The WIC program has been shown to save the government money as well as increase children's health (Box 5-2). The second program, Head Start, also has a proven track record. Head Start is an intensive preschool program designed to improve the cognitive and social functioning, health status, and school readiness of low-income youth. Head Start funding has increased from \$2.2 billion in fiscal 1992 to \$3.5 billion in fiscal 1995, with \$3.9 billion proposed for 1996. The new funding has

been focused on improving program quality for children already in the program and in expanding the new “Early Head Start” program for children in the first 3 years of life.

**Box 5-2.—What Works: Preparing Students to Learn**

WIC has been shown by many studies to be highly effective in improving the health status of infants. In addition, WIC appears to be a money *saver*: for every dollar spent on the prenatal WIC program, approximately \$3.50 is saved in medicaid and other costs due to lower incidence of low-birthweight births and improved health. To the extent that poor prenatal care and infant health are associated with future behavioral and academic problems, the benefits of WIC are even greater.

Head Start and other preschool programs have also demonstrated their ability to improve preparedness for school. Numerous studies have found that participation in Head Start produces immediate gains in health and in scores on tests of intellectual ability, emotional maturity, and school readiness. They also find, however, that these gains in test scores decline over time. Nevertheless, some Head Start and other similar programs that have been evaluated over many years have found that participants are less likely to be assigned to special education classes, and are less likely to be held back a grade.

*Improving Student Achievement*

The Goals 2000 act provides a framework for comprehensive State and local efforts to improve both teaching and learning, based on clear and challenging academic standards for all students. The framework of Goals 2000 is meant to encourage the alignment of various aspects of the educational system including curriculum design, student assessments, teachers’ professional development, and instructional materials. These systemic reforms are voluntary, and their design in each State will be a group effort including parents, business people, educators, and others.

The 1991 reforms adopted in Kentucky are an example of the type of alignment Goals 2000 is intended to promote in other States. Kentucky adopted six broad goals and further refined these in 62 specific academic expectations. One of the goals, for example, is that students should be able to apply principles from mathematics, science, social studies, and other disciplines to real-life situations. In science, this goal translates into such concrete expectations as that students should be able to recognize and use patterns such as cycles and trends to understand past events and make predictions. The State’s major employers have been involved through-

out the reforms, helping to ensure that the schools' expectations match the needs of employers and future graduates.

The State's new goals are accompanied by new assessment procedures that combine traditional multiple-choice questions with tests requiring students to solve practical problems, and with evaluations of each student's best classroom work collected throughout the year. This new assessment better measures the full range of each student's progress. The assessment also is used to evaluate schools' success in improving student performance; schools that do well will receive monetary rewards, while unsuccessful schools will be required to develop plans for improvement. Coupled with the increased accountability, Kentucky is decentralizing decision making to school-based councils of teachers, parents, and principals on matters such as curriculum and assignment of staff. In addition, resources for professional development have been increased and family and youth service centers have been established at low income schools to provide and coordinate services for families such as child care, family counseling, and referrals to service agencies.

Results in Kentucky are preliminary so far, but encouraging. After 2 years, average test scores in core academic subjects increased markedly at all grade levels tested. Time will tell if these results are sustained and translate into better careers for Kentucky's graduates.

The reforms embedded in Goals 2000 and its companion legislation, the Improving America's Schools Act, are part of the Administration's effort to move away from rigid rules to a new model where the Federal Government provides seed money and technical assistance for States and local school districts to engage in their own reform efforts, keyed to high standards. The acts enhance local flexibility by providing States and local school districts the opportunity to better coordinate the activities of federally funded programs in their areas. Both acts allow States and school districts to apply for waivers of Federal rules that impede their plans for school improvement. The objective is to create a system in which highly skilled teachers can focus on achieving clear, widely agreed-on goals, assisted by parents and the community, who in turn can look to a set of well-defined standards by which to hold educators and school systems accountable.

### *Increasing Graduation Rates*

Goals 2000 also focuses on reducing dropout rates. In addition, the Improving America's Schools Act ensures that Federal funds will be available to middle and high schools with very high poverty rates—schools that also have a high proportion of students at risk of dropping out.

This goal is important both to students at risk of dropping out and to society as a whole. On average high school dropouts earn

35 percent less per year than high school graduates with no additional education, and 70 percent less than college graduates, leading the average high school dropout to pay far less in taxes over the course of his or her working life than the average high school graduate. Dropouts are also more likely than graduates to end up on welfare or in prison. For example, on any given day in 1992 almost one-quarter of all males between 18 and 34 who had not received a conventional high school diploma—but less than 4 percent of those who had—were either in prison, on probation, or on parole. According to preliminary Department of Labor estimates, the typical young female high school dropout receives on average more than twice as much in food stamps and public assistance payments as high school graduates and almost five times as much as those with at least some college.

The present value of total welfare, prison, and parole costs averages about \$69,000 over the course of an adult lifetime for each individual who does not graduate from high school, but only about \$32,000 for each high school graduate who does not attend college, and only \$15,000 for those who attend college. (These figures are calculated as the net present value at age 18 of the costs of criminal justice and welfare incurred between the ages of 18 to 54, using 1992 data. Costs are discounted at a 4-percent annual rate.) Thus, ignoring differences in taxes paid, a program capable of influencing young people who would otherwise drop out of high school to graduate and behave like other high school graduates would reduce spending on welfare and the criminal justice system by about \$37,000 in present value terms for each youth induced to graduate. These figures are almost the reverse of public spending on education and training: on average, the typical college graduate is the beneficiary of over \$29,300 in public spending between the ages of 16 and 24, while the typical high school graduate receives about \$13,900 and the typical high school dropout less than \$6,500.

However, because high school dropouts differ from graduates along many dimensions other than the fact of dropping out, these calculations do not necessarily translate into potential gains for society whenever a student is kept in school to graduation. Furthermore, many dropout prevention programs are too new to have accumulated a substantial record of long-term results, and the current, incomplete state of research makes conclusions somewhat premature. Nevertheless, a number of programs for at-risk youth have been reliably evaluated and found to dramatically reduce dropout rates over several years of operation; in addition, the best of these programs appear to save the government money.

The evidence suggests that many students at risk of dropping out are helped by guidance, academic assistance, career information, and general support in order to stay in school and succeed. After-

school and summer programs and linkages to postgraduation jobs and schooling can be effective in keeping children in school and in improving academic achievement and other outcomes. The difficulty in improving the poor labor market prospects of youth once they have dropped out underscores the importance of efforts to reduce the number of dropouts. Although the current, incomplete state of research makes conclusions somewhat premature, two general observations may be hazarded.

First, it is possible to prevent students from dropping out, but it is difficult. A number of programs for at-risk youth have been reliably evaluated and found to reduce dropout rates substantially; many others, however, have not been so successful. Second, it is difficult to make initial gains last. Several programs have shown a pattern of marked improvement in attendance and academic achievement during their first year, but these initial gains often disappear over the next few years. Fortunately, there are models of integrated programs that have been effective in dramatically reducing dropout rates over several years of operation (Box 5-3).

### *From School to Work*

The School-to-Work Opportunities Act, proposed by the Administration and passed by the Congress in 1994, addresses the increasingly poor job prospects of high school graduates by providing States and localities with venture capital to build systems that prepare young people to pursue a variety of options after completing high school: a good first job, career-oriented training, or college. The School-to-Work initiative funds partnerships among businesses, labor representatives, and educators to offer young people learning experiences in both school-based and work-based settings that will help provide them the knowledge and skills they will need to make a smooth transition into the world of work.

The School-to-Work initiative creates the opportunity for students to learn in a setting that connects academics with problems in a real workplace. The program integrates classroom instruction with work experience, structured training, mentoring at job sites, and matching of students with participating employers. Whenever possible, students are paid for their work. School-to-Work opportunities bring the workplace into the classroom, combining quality coursework at school with hands-on learning and training in a work environment. By the end of a course of study, students will have received a high school diploma, an industry-recognized skill certificate, and, for some, a diploma for completion of 1 or 2 years of postsecondary education.

In 1994 all 50 States received Federal funding to plan and develop School-to-Work Opportunities systems, and 8 States were already implementing comprehensive systems. In almost all cases, employers are directly contributing to the development of industry-

### **Box 5-3.—What Works: The QUOP Experiment**

The Quantum Opportunities Program (QUOP) is an experiment in the use of community-based organizations to improve the academic and social competencies of disadvantaged students by providing continuing adult support throughout their high school years. In each of several cities, QUOP programs offer tutoring, adult mentoring, career and college planning, and other services and activities to children from families receiving AFDC, starting in the ninth grade. There is also a financial incentive: participating students receive small stipends and bonuses for completing segments of program activities, as well as payments into a trust fund for their eventual post-secondary education. Because participants were randomly chosen, the program provides a test of whether the combination of a rich array of services and tangible financial rewards for success, sustained over the whole of a high school career, can induce students to stay in school and out of trouble, and go on to college.

Over 4 years the average QUOP student participated in 1,286 hours of educational activities beyond regular school hours and accumulated \$2,300 in his or her postsecondary account. Overall 4-year costs of the program were \$10,600 per enrollee. At the end of the program's demonstration period an evaluation comparing randomly selected participants and nonparticipants (controls) found that 63 percent of QUOP students, but only 42 percent of controls, had graduated from high school. Only 23 percent of QUOP students had dropped out, versus 50 percent of the controls. And 42 percent of QUOP students, compared with 16 percent of controls, were enrolled in postsecondary education. Participants were also half as likely to report engaging in criminal activity and one-third less likely to have had children. The experiment was small, following only 100 students at four of the sites, and results varied widely across sites, yet for the experiment as a whole all these differences in outcomes were statistically significant.

The results of integrated programs such as QUOP defy the common presupposition that disadvantaged youth will not take advantage of, or cannot benefit from, enhanced educational offerings. Rather they support the notion that many students need both academic help such as tutoring and the incentive of being assured that academic success has a payoff, in the form of better prospects for employment or college.

based standards in broad clusters of occupations. By 2000 almost half a million young Americans are expected to have entered School-to-Work programs during their last 2 years of high school. To the extent School-to-Work programs are successful, they should benefit many students by connecting academic learning with problem solving in an actual workplace, thus making learning more relevant; they should also provide valuable labor market experience and connections. These programs should also benefit businesses by increasing the number of trained workers with experience in specific fields.

### *Better Access to Education After High School*

Creating a system of lifelong learning for adults is another essential part of Goals 2000. The Administration is creating a system with a number of components, each applying not just to the traditional path of college education immediately following high school, but also to continuing education and training for those who have jobs or are between jobs.

Reformed student loans will reduce the burden of borrowing for college and for continuing education. Under the new Federal Direct Loan Program, individuals can borrow money for college directly from the Federal Government and can tailor their repayments to suit their financial circumstances. Borrowers will be able to choose from among four repayment plans—standard, extended, graduated, and income contingent—and to switch plans as their needs change. The standard plan, the one most widely used today, will continue to allow students to repay their loans in fixed monthly payments over 10 years. The extended plan provides for a smaller fixed payment but a longer term, from 12 to 30 years. Under the graduated plan, also with a 12- to 30-year term, the size of the monthly payment starts smaller than in the first two plans and increases over time according to a predetermined schedule; this should reduce the repayment burden in the early years when incomes are likely to be modest. Finally, the income contingent (or “pay-as-you-can”) plan takes the notion of graduated payment a step further: monthly payments are determined by the borrower’s actual income. This choice of plans makes it easier for graduates to start businesses, work in their communities, or meet other family responsibilities by better matching their loan service to their varying incomes.

In addition to lightening the burden of loan repayment, the Student Loan Reform Act restructures the Federal student loan program itself, phasing in direct lending to students over the next few years. Direct lending will significantly reduce the costs of the loan program by eliminating middlemen, thus streamlining the system. The savings are estimated at approximately \$6.8 billion over a 5-year period.

AmeriCorps, the national service program, lets Americans earn money for education while gaining practical experience as they serve American communities. Twenty thousand participants entered the program in 1994. By 1996 an estimated 100,000 AmeriCorps members will have served American communities. AmeriCorps participants will devote themselves to community service projects, chosen by local nonprofit organizations, such as teaching in urban school districts, wildlife habitat restoration, immunization of children, crime deterrence, and low-income housing restoration. In 1994 participants earned a \$7,640 yearly stipend for living expenses and a \$4,725 yearly grant for college or graduate school.

Additional initiatives to make continuing education affordable include the proposed income tax deduction and expanded use of individual retirement accounts for educational expenses, as discussed in Chapter 1. Both of these proposed changes in the tax code are intended to further lower the financial burden of pursuing post-secondary education.

## FACILITATING LIFELONG LEARNING AND CAREER-LONG JOB MOBILITY

Training on the job or in a work-related setting tends to be especially well tailored to the requirements of the workplace. One study of work-related training, while not fully capturing the vital but hard-to-measure effect of informal on-the-job training, showed that the impact of such training on wages is of similar magnitude to that of more traditional schooling. (As with measures of the returns to education, these measures of the returns to training may be over- or understated if there are other, unobserved differences between those who do and do not receive training.)

Provision of on-the-job training is skewed in favor of those already relatively well educated. Among young college graduates 35 percent received training from their employers between 1986 and 1991, whereas only 19 percent of high school graduates and 9 percent of high school dropouts received any training during that time period.

Formal on-the-job training is considerably less common in the United States than in other industrialized nations such as Germany and Japan. Large Japanese companies train their workers far more than do their U.S. counterparts, partly because employees there are much less likely to switch employers. In Germany, high levels of training take place in formal apprenticeship systems that are supported by the government as well as by powerful industry and union federations.

## *Skill Standards*

Skill standards can play an important role in increasing the supply of highly skilled workers and smoothing their transitions between jobs. The United States is unique among its major competitors in lacking formal mechanisms for national certification of most worker skills. This lack diminishes the portability of training and reduces the incentives for employees to invest in increasing their skills.

The National Skills Standards Act creates a framework for voluntary development of work force skills standards in broad clusters of occupations. The law promotes standards that include both the skills needed in the high-performance workplace (such as problem solving and teamwork) and industry-specific skills. Many industry groups are already at work designing their standards for occupations in their industries. A blue-ribbon National Skill Standards Board is being established to stimulate the development and adoption of the new voluntary skill standards.

Skill standards can also help alleviate imperfections in the market for training. Often training provided by one employer is useful to another. Thus, when trained workers change employers, the benefits to the first employer of its investments in training may be captured by the second. This reduces employers' incentives to train. Skill certificates developed in cooperation with industry leaders should reduce this market imperfection, since employees would be more willing to pay for training if it leads to a certificate that another company recognizes and will pay a premium for. These payments to employers for training may take the implicit form of lower wages during the training period, just as they do for traditional union apprentices or medical residents. Because of this implicit or explicit payment, employers would take less of a risk when they provide training. Some economic theory predicts that making general training more visible to the market will increase turnover, but in fact turnover is *lower* at many companies that pay for publicly certified training. The reason for the divergence of theory and evidence is unclear, although it may be that company-sponsored education increases worker loyalty, or there may be a selection effect, whereby hard-working employees are both less likely to quit and more likely to take advantage of company-sponsored education.

## *Building a Reemployment System*

Each year more than 2 million U.S. workers permanently lose their jobs through no fault of their own, when plants close or there are mass layoffs. Although most dislocated workers find new jobs within 15 weeks of their job loss, it is estimated that 15 percent of all workers who were displaced between 1987 and 1991 remained unemployed for over 6 months. Older workers and those with less education were the least likely to find a new job after dis-

placement. Of those involuntarily displaced workers fortunate enough to find new employment, 47 percent suffered a decrease in their wages.

Just as the Administration's education policies focus on smoothing the transition from school to work, its labor policies focus on smoothing the transition from work to work and on increasing skills to avoid job loss. Workers often find the path from one job to the next beset with hurdles. Many do not know what other jobs are available, and having found out, discover they lack the skills to fit into any of them. And some who clear both those obstacles find that their new jobs do not work out, because for one reason or another employee and employer do not fit together well. These bad matches can increase turnover and reduce satisfaction and productivity.

To address these problems, the Nation's unemployment system is undertaking a transition of its own—to a reemployment system. A key element of the new system is one-stop career centers for all workers. The Administration is working with the States to create a nationwide network of local centers, offering job counseling and allowing workers to apply for jobless benefits and sign up for training programs all in one place.

An important element of the reemployment system is an easily accessible store of labor market information. The one-stop centers will build a data base of training providers. The data base could include such information as records of training providers' completion and placement rates and the average starting wages of their graduates. The centers will also provide information on job openings; on local employment trends, including the wages and skill requirements of occupations in demand; and on relevant Federal, State, and local programs.

The Extended Unemployment Compensation Act, passed in 1993, requires that all States establish and utilize a system for profiling all new unemployment insurance claimants to identify, and refer to job search assistance, those who are likely to exhaust their regular unemployment benefits and are at risk of experiencing long-term unemployment. In 1995 this program, similar to successful programs implemented in several States (Box 5-4), is expected to help an additional 150,000 Americans who have lost their jobs.

As one-stop centers, improved training and assistance between jobs, and improved labor market information come together to create a national reemployment system, movement between jobs should become smoother, and the economy should be able to operate at a lower rate of unemployment without the risk of pushing up inflation.

#### **Box 5-4.—What Works: Profiling and Job Search Assistance**

During the 1980s five States experimented with programs to change the focus of their unemployment insurance systems from passive provision of income support to active efforts at re-employment. The programs profiled unemployment insurance applicants and targeted those most at risk for long spells of unemployment for participation in intensive job search assistance and counseling. All of the experimental initiatives realized cost savings, the key to which proved to be finding new jobs for most newly unemployed workers quickly. The results demonstrated that it is cost-effective to focus job search assistance on those most at risk for long spells of unemployment.

The programs were rigorously evaluated through random assignment of clients to either an experimental group which participated in the program, or a control group which did not. On average, those receiving job search assistance found new employment from half a week to 4 weeks sooner than similar individuals in the control group. This reduction in unemployment not only benefited the workers themselves, but also saved the government between \$1.80 and \$4.80 for each dollar invested in profiling and job search assistance.

#### *Facilitating Retraining*

Needs for increased training are not well matched with the current complicated system of dozens of government-assisted training programs, each with its own rules, regulations, and restrictions. Therefore, the Administration has proposed replacing this complex system with a single coherent, choice-based system for adults. This proposal will consolidate nearly 70 current training or related programs. Dislocated or low-income workers would be eligible for “skill grants” of up to \$2,620 per year for 2 years, enough to cover tuition, supplies, and fees at a typical community college. Unlike the current system, in which government agencies often choose what training workers will receive and who will provide it, the new skill grants could be used at any eligible training provider, including community colleges and private technical schools.

An important element of this new system will be the labor market information system described above, in which users have access to the track records of local education, training, and job placement providers. With this information available, the power of the market and of informed consumer choice should work to weed out ineffective programs and reward those that help workers get the skills they need.

## POLICIES TO IMPROVE WORKPLACES

Policies to increase the supply of skilled workers are important but may not be sufficient unless jobs are available that utilize the enhanced skills. Skills alone may not lead to high wages, high productivity, or even interesting work. This Administration is pursuing a number of policies to enhance the trend toward workplaces that rely on high levels of skill, lifelong learning, and continuous skill improvement.

High-performance workplaces typically are quite different from traditional ones. They have been transformed so as to give employees greater ability and the incentive to improve their workplaces. Workers' ability to generate good ideas is often strengthened by high levels of training and of information sharing. Forms of worker empowerment vary widely but often include work teams and forms of representative participation such as elected committees of workers or union representatives. Incentive schemes vary as well but typically reward individuals for learning new skills, reward groups of workers for their collective success, and build cohesiveness and solidarity more than individualistic competition. Motivation is also supported when companies ensure that the efficiency gains achieved by implementing workers' suggestions do not end up costing them their jobs.

Although it is difficult to obtain reliable nationwide data on the extent of employee involvement in decisionmaking, the evidence is that employee involvement and other plans spread rapidly during the 1980s. By the early 1990s the vast majority of very large U.S. companies had experimented with at least a small amount of employee involvement in at least a portion of their organizations, and many smaller companies were experimenting as well. At the same time, however, only a minority of companies reported widespread implementation of an integrated set of high-performance workplace practices.

The effects of the high-performance workplace can be impressive. The Department of Labor recently reviewed a host of studies on the effects of high-performance work practices on organizational performance. The result is a collage of evidence that a coordinated change in work organization can pay handsome rewards. For example, a multiyear study of steel finishing lines identified four distinct human resource management systems. The more innovative production lines had introduced problem-solving teams, higher levels of training, innovative incentive compensation systems, and higher levels of employment security, while the most traditional lines had few or none of these practices. The more innovative lines enjoyed significantly higher productivity. The most innovative lines ran 98 percent of the scheduled time, while the untransformed plants ran

only 88 percent of the scheduled time; plants intermediate in their introduction of innovative human resource policies were also intermediate in productivity. Plants with more innovative practices also produced higher quality steel. A separate study of steel mini-mills found that high-involvement plants not only excelled in quality and productivity, but also enjoyed lower turnover. These results have been replicated in a number of other industries, as well as in multi-industry studies. Several studies find that these innovative workplace practices are associated with financial gains, such as higher cash flow and stock market value.

## MARKETS AND THE HIGH-PERFORMANCE WORKPLACE

If high-performance workplaces are so productive, why do they remain relatively rare in the United States? A number of factors can inhibit their spread, even when they hold the promise of improved outcomes for both workers and employers.

One problem is imperfect information in financial markets. Relative to other companies, high-performance workplaces usually invest heavily in employees' skills and in the company's reputation as a trustworthy employer and business partner. These investments frequently take years to pay off. Managers are able to inform investors about their investments through many avenues. Yet investors will almost always have better information on, and thus likely pay more attention to, investments that are reported in publicly available financial statements, comparable across time and between companies. Informing investors about investments in human resources is more difficult because no common language exists to describe them in a way that allows outsiders to assess their value. Partly because of these communication problems, corporate managers in a recent survey rated employee satisfaction, turnover, and training expenditures the 3 least important out of 19 measures of financial and nonfinancial performance to report to outside investors. These measures not only lagged earnings (ranked first) and capital expenditures (14th), but even lost out to corporate ethics statements (16th).

Because human resource investments are so hard to monitor, they may be especially sensitive to cutbacks during downturns in a corporation's cash flow. These information problems, plus the general difficulty that investors have in knowing whether managers are investing for the long run, can lead to inefficiently few high-performance workplaces.

The long-term commitment of high-performance organizations to their work forces can have favorable macroeconomic effects. Under reasonable assumptions, each firm that avoids layoffs helps stabilize demand for other firms' products, which the original firm's

workers, by keeping their jobs, are able to continue purchasing. High-performance organizations usually try to build trust and protect their investments in workers by minimizing layoffs. Thus, when an economy has many high-performance workplaces it may well find that its recessions become less severe.

The present system of unemployment insurance may well *encourage* layoffs. Employers in most States pay unemployment insurance premiums that are not closely related to their record of past layoffs. As a result, companies that avoid layoffs implicitly subsidize those that frequently lay off workers.

Another set of problems centers around deficiencies in the incentive system facing American managers. Many American managers have spent years in workplaces designed for top-down control, not for encouraging initiative from low-level workers. In addition, new work practices diffuse slowly partly for the same reason management initiatives often diffuse slowly—learning takes time. A number of innovations ranging from hybrid corn varieties to the divisional corporate structure have taken a generation or longer to spread to half the companies that would eventually adopt them, and employee involvement appears to be no exception.

A legal difficulty augments these problems: some high-performance work practices have been subject to challenge under U.S. labor law, which has developed within a decades-long adversarial system of worker-management relations. Some forms of substantive employee involvement have been found to be in violation of the National Labor Relations Act, because they are deemed the equivalent of “company-dominated unions” or blur the legal line between workers and managers.

The policy response of the Administration to the problems facing high-performance workplaces is to remove obstacles and to improve the quality and delivery of information that can facilitate private-sector initiatives. The Department of Labor has created a new Office of the American Workplace to reduce barriers that impede organizations from adopting high-performance work structures. Its initiatives include creating a clearinghouse of information on high-performance workplaces, creating educational programs for unions and for CEOs to learn how to work better together, and working with institutional investors such as pension funds to better measure which companies are investing in their people for the long run. To examine a broad range of workplace issues, including the legal difficulties mentioned above, the Administration appointed a Commission on the Future of Worker-Management Relations (Box 5–5).

The Administration is expanding the National Institute of Standards and Technology’s (NIST) Manufacturing Extension Partnership (MEP). MEP centers provide small- and medium-sized manufacturers with access to public and private resources, information,

### **Box 5-5: Reforming Workplace Regulation**

In March 1993 the secretaries of Labor and Commerce announced the formation of the Commission on the Future of Worker-Management Relations to study what, if any, changes should be made in U.S. workplace laws and regulations to facilitate employee participation and reduce labor-management conflict. In January 1995 the Commission released a number of recommendations. These recommendations, and the reasoning behind them, included the following:

- In the 1920s and early 1930s many companies created company-dominated unions, largely in an effort to keep out independent unions. In response, the 1935 National Labor Relations Act banned company unions. Its definition of illegal company unions is very broad, however, and encompasses many legitimate employee involvement groups.

*Recommendation:* Continue to ban company unions, but amend the act to permit employee involvement groups that improve productivity and safety and only incidentally discuss employment terms and conditions.

- A company must hold an election on union representation if 30 percent of its workers sign a petition calling for such an election. But often the election is delayed for months by legal challenges such as disputes about the size of the bargaining unit. In addition, in about one out of four companies holding elections, a worker is dismissed for being pro-union; companies face no threat of punitive fines or sanctions for these illegal acts.

*Recommendation:* Elections should generally take place within 2 weeks of the request, with disputes settled afterward. Speedy elections should reduce the number of labor law violations, hence reducing concerns about the lack of penalties.

- Millions of American workers are injured and thousands killed on the job each year, yet safety regulations are often burdensome and ineffective and do not permit companies and workers to tailor their decisions to local conditions.

*Recommendation:* Require all but the smallest workplaces to have a formal safety program, meeting minimum standards such as regular safety training and investigation of all serious accidents. In workplaces with high-quality safety programs, regulators should reduce penalties and the frequency of inspections.

and services designed to increase firms' use of appropriate technologies and modern manufacturing practices. Building work force skill and a work environment that fosters a culture of continuous improvement is a major factor in companies' ability to benefit from these technologies. Thus, the Administration's MEP program is helping U.S. industry to move toward adoption of the high-performance workplace model. NIST is working with the Department of Labor's Office of the American Workplace and its Employment and Training Administration to create linkages between the extension centers and training and modernization services. In the future, small manufacturers will be able to work with a local MEP center for needs ranging from new technology to redesigning the entire workplace.

One means of promoting high-performance workplaces is through recognition programs, most notably the Malcolm Baldrige National Quality Award (Box 5-6). Because of its past success in encouraging quality performance, the award program is being expanded to make schools and health care enterprises eligible.

**Box 5-6.—What Works: The Baldrige Award**

The Malcolm Baldrige National Quality Award measures companies' progress on a number of quality goals. The company (or division) must provide evidence that it incorporates a focus on quality into management practices, works closely with suppliers, trains workers in quality techniques, and meets customers' desires. The completed application must be less than 70 pages. The examination process begins with a board of examiners scoring the written application. The examiners are recognized quality practitioners themselves, whose feedback the contestants value. High scorers then have site visits led by a senior examiner, and winners are selected by a panel of judges.

The Baldrige Award has been an effective catalyst for managerial change. More than 1 million copies of the award criteria have been distributed, and the award serves as the model in many companies' internal evaluations of their move to high performance.

Although few companies have won the coveted award, its effects are more broadly felt. For example, one truck engine manufacturer that was having serious quality problems applied for the Baldrige Award as a way of "turning a harsh spotlight on itself." Although the company did not come close to winning, the feedback it received led to valuable new practices concerning worker training and listening to truckers' complaints. Defect rates plunged from 10 percent to below 1 percent in only 2 years.

## REINVENTING GOVERNMENT AS A HIGH-PERFORMANCE WORKPLACE

Reinventing government, as noted in Chapter 1, is crucial for creating a government that works better and costs less. One key element of this reinvention is to turn the Federal Government itself into a high-performance employer, one that relies on the skills and motivates the creativity of its employees (Box 5–7).

### **Box 5–7.—What Works: Empowering Civil Servants to Better Serve Citizens**

One goal of the Vice President's reinventing government initiative is to empower Federal employees. Simply by listening to their good suggestions, the government can become a better provider of services. An example of empowered civil servants making good policy at the front line involves the restoration of the Santa Monica Freeway after California's Northridge earthquake of January 1994.

The Santa Monica Freeway is one of the most important transportation corridors in the United States, and for each day that it was shut down the local economy suffered about \$1 million in lost output. However, the highway administration often takes over a year just to develop a plan, solicit bids, review proposals, and award funding for a major project such as rebuilding the Santa Monica. Fortunately, the Chief of District Operations for the Federal Highway Administration in Sacramento had some ideas for improving the process.

The main ideas were to speed up the bidding process and to award large bonuses to contractors who finished ahead of the date proposed in their bid (and impose equally large penalties on contractors who missed deadlines). By accelerating the competitive bidding process and rewarding speedy completion, the Chief of District Operations and other empowered Federal employees helped finish in 84 days projects that would normally have taken 2 years. In addition, thanks to cooperation between groups ranging from Amtrak and the Army Corps of Engineers to the city's transportation department, traffic patterns were quickly rerouted, averting gridlock.

Reinventing procurement, as described in Chapter 4, is another key aspect of reinventing government. Part of reinventing procurement involves purchasing more goods and services on the basis of expected quality as well as low price. In the private sector many large customers have increasingly relied on certifications of the quality processes of their suppliers, often using certifications very similar—or even identical—to those of the Baldrige Award.

The Administration, drawing on successful private sector experience, is also beginning to use existing supplier certifications and awards to improve procurement. These efforts to promote purchasing from high-quality suppliers should not only save the government money but also increase the quality of U.S. jobs, because high-quality suppliers tend to rely on their workers for help in improving quality.

## CONCLUSION

The U.S. labor market is a leader among the industrialized nations in job creation. At the same time, however, wages have stagnated for many Americans and declined markedly for those at the bottom of the income ladder.

No single policy will reverse this disappointing performance, but taken together, the policies described in this chapter can enhance the chances of all Americans to live prosperous, middle-class lives. These policies will increase the likelihood that children will be born healthy, enter school ready to learn, and stay there long enough to learn the skills they will need in the workplace of the future. Policy innovations in the labor market promise new entrants better prospects for finding a satisfying first job, and all workers a greater likelihood of smoother transitions between jobs and of continued learning on their jobs and throughout their careers. If successful, these policies will promote higher productivity and rising living standards, as well as make work more interesting for all.

## CHAPTER 6

# Liberalizing International Trade

SINCE THE SECOND WORLD WAR the United States has taken the lead in championing liberalized trade and open markets. A series of trade negotiations at a variety of levels has produced a world economy that is far more open, integrated, and efficient than that of the 1950s. For the global economy this has meant an extraordinary expansion of income, not only in the industrialized world but shared by those developing countries that were willing to promote international trade. For producers, trade liberalization has meant access to lower cost supplies and the ability to reap returns on investment over a much larger market. For consumers it has meant wider choices, higher quality, lower prices, and higher real incomes.

In the 1950s almost all trade was in commodities or manufactured goods, transported by sea, and trade barriers consisted of tariffs and quotas. Levels of trade protection were high, and negotiating reductions was relatively easy. Trade negotiations today are severalfold more difficult. Tariffs, which are easily observed and compared, are now much less important. Tighter integration among economies has shifted the emphasis of negotiations to domestic practices that inhibit trade, while new, nontariff trade barriers have been devised to take the place of those reduced through negotiation. Trade in intellectual property, technology-intensive goods, and a wide array of services has changed the product landscape, and trade now takes place among a much wider group of countries. In the 1990s, firms regularly operate subsidiaries in their major overseas markets, blurring the definition of what is a national firm. Their foreign direct investment has both pushed the expansion of trade and, in many industries, been pulled by the necessity to be in close touch with customers, so that rules governing foreign investment now have a direct effect on trade. All of these changes have made the pursuit of effective trade liberalization more challenging.

This Administration, like its predecessors, has responded to these changes by pursuing liberalization and the promotion of exports at a variety of negotiating levels. The American approach has been that of nondiscrimination: negotiated reductions in trade barriers should apply to all trading nations; individual nations should not cut deals that benefit themselves at the expense of others. This

principle of U.S. diplomacy goes back to the Nation's early history as a new entrant in the trading world, but it has roots in both fairness and economic efficiency. Nondiscrimination as a goal received powerful support from the disastrous experience of discriminatory trade and payment regimes during the Great Depression. Often called the most-favored-nation (MFN) principle, since each participant receives the same treatment accorded the "most-favored nation," nondiscrimination formed the basis of the postwar trade order.

Even though nations will seek concessions by others in areas of most immediate interest to themselves, nondiscrimination makes trade liberalization a public good—what is produced by one country in negotiation with another is available to all. This gives rise to the coordination problem shared by all public goods, that of getting each party to participate rather than sit back and let others do the liberalizing, free-riding on their efforts. The solution to this dilemma requires commitment on the part of the major trading nations, coupled with ingenuity and the artful use of the fear of exclusion. Thus, while the United States has continued to support multilateral liberalization efforts, it has been forceful in bilateral negotiations as well, and has also pursued liberalization on a regional basis, both as a way of extending market opening and as a way of pressing for greater liberalization in the full multilateral arena.

This Administration has achieved remarkable success at each of these three levels of trade negotiations. After 7 years of negotiating and two missed final deadlines, the Administration brought the most ambitious of postwar multilateral negotiations, the Uruguay Round, to a successful conclusion. At the regional level the Administration brought about the enactment of the North American Free Trade Agreement (NAFTA) with Canada and Mexico, and has reached agreements to move toward free trade in the entire Western Hemisphere and in the Asia-Pacific region. At the bilateral level the Administration has concluded a number of agreements, the most important of them within the Framework for a New Economic Partnership with Japan.

In its first 2 years in office the Administration has achieved more in international trade policy than any other postwar administration. The agreements it has reached and implemented change the landscape of future trade issues. This chapter reviews those agreements and their consequences for the United States and the world trading order, and then explores the issues that will govern future trade relations.

## MULTILATERAL INITIATIVES: THE URUGUAY ROUND AND THE WORLD TRADE ORGANIZATION

The Uruguay Round took a full 7 years (1986–93) to complete, and the resulting agreement is by far the most extensive and comprehensive yet concluded under the General Agreement on Tariffs and Trade, or GATT (Table 6–1). It goes beyond all previous GATT agreements in three respects (Box 6–1). First, it deals more directly and extensively with nontariff barriers to trade than any past agreement. Second, it brings several major product sectors under international trade rules for the first time. Finally, the agreement goes a long way toward establishing a single set of trade rules applicable to all member countries, limiting the ability of countries to pick and choose what trade obligations they will accept. The Uruguay Round agreement offers huge benefits for the United States and for the other signatories and will shape the future of multilateral trade negotiations.

TABLE 6–1.—*GATT Negotiating Rounds*

Negotiating round	Dates	Number of participants	Tariff cut achieved (percent)	Comments
Geneva .....	1947	23	} 73	
Annecey .....	1949	13		
Torquay .....	1951	38		
Geneva .....	1956	26		
Dillon Round .....	1960–61	26		
Kennedy Round .....	1964–67	62	35	Antidumping agreement signed
Tokyo Round .....	1973–79	99	33	Addressed nontariff as well as tariff barriers; codes (optional) on government procurement, dumping, subsidies, standards, and customs valuation
Uruguay Round .....	1986–93	125	40	Addressed nontariff as well as tariff barriers; covered new areas of agriculture, services, intellectual property; strengthened dispute settlement

Note.—Tariff cuts achieved are those agreed to by the major industrial countries on industrial products. The tariff cut achieved in the first five negotiations is an estimate. Tariffs fell from an average of about 40 percent at the time of GATT's founding to 7 percent by the beginning of the Tokyo Round.

Source: General Agreement on Tariffs and Trade.

### TARIFF AND NONTARIFF MEASURES

Even in the traditional areas of trade negotiation the Uruguay Round marks a significant achievement. The agreement reduces average industrial product tariffs by 34 percent overall, and by 40 percent for industrial countries. Tariffs were eliminated entirely in “zero-for-zero” agreements in several sectors, including pharmaceuticals, steel, construction equipment, medical equipment, and paper. Overall, the Round is estimated to result in a \$744 billion cut in world tariffs over the next 10 years. In addition, many countries agreed for the first time to bind (cap) a significant portion of their tariffs, giving up the possibility of future rate increases above the bound levels. The increase in tariff bindings among less devel-

### **Box 6-1.—Uruguay Round Highlights**

*Tariffs.* The Uruguay Round agreement achieved a 34-percent average reduction of industrial product tariffs. Most of these tariffs are now bound (capped).

*Agriculture.* The agreement converts quotas and other trade restraints to bound tariffs. It requires cuts in export and domestic subsidies and minimum market access commitments.

*Textiles and clothing.* The agreement eliminates quotas on textile and clothing imports over a 10-year period.

*Services.* The agreement extends MFN treatment, national treatment, and other principles to service sectors in which countries make specific market-opening commitments. Specific sectoral commitments were negotiated or are being negotiated.

*Intellectual property.* Patent, trademark, and copyright protections are recognized as trade obligations and strengthened.

*Rules governing trade.* So-called voluntary export restraints are forbidden, and country-specific import safeguard measures are allowed only in limited circumstances. Antidumping procedures become subject to limited duration ('sunset') provisions and improved standards of transparency and procedural fairness. Subsidies are divided into categories: those prohibited outright, those subject to countervailing duties if they cause injury to producers in other countries, and those explicitly declared exempt from such duties.

*Trade-related investment measures.* Measures requiring foreign subsidiaries to achieve a specified minimum level of domestic content in their production or requiring that imports be balanced by equivalent exports, as well as certain other measures, are to be eliminated within 2 years for developed countries, and within 5 years for less developed countries.

*"Single undertaking."* With the exception of a few sectoral agreements, a single set of trade rules applicable to all signatories is established.

*World Trade Organization (WTO).* The agreement ends the ambiguous foundation for world trade that the GATT had provided, regularizing and creating a legal basis for previous GATT practice. The WTO provides a single umbrella for trade agreements in goods, services, intellectual property, and other areas.

*Dispute settlement.* Disputes involving all WTO matters are subject to a single dispute settlement process. Losers in a panel decision may take the matter to a new Appellate Body but no longer have the ability to block panel decisions. Retaliation is authorized in the absence of a settlement.

oped countries was striking: by the end of the Round 73 percent of their industrial product tariffs, covering over 60 percent of total imports, were bound.

The Round made significant progress in reducing or eliminating nontariff barriers. The government procurement agreement strengthens the provisions of the earlier Tokyo Round code, opening a wider range of markets for signatory countries. In addition, the Round made extensive efforts to eliminate quantity restraints on trade and require countries to rely instead on price (tariff) measures. In the textile and apparel sector, the various bilateral quotas that have arisen to control international trade are to be raised, and phased out entirely by 2005. In agriculture, quantitative restraints and other nontariff barriers to trade are to be replaced by tariffs of equivalent restrictiveness. Finally, the safeguards agreement prohibits the use of voluntary export restraints.

The elimination of quantity restraints on trade, even when replaced by tariffs that reduce trade by the same amount, is an important liberalizing step. With a quota, when imports reach the quota limit, the domestic market is completely insulated from foreign competition. Quotas effectively carve up the market, whereas tariffs maintain competition. The anticompetitive effect is most striking if domestic producers collude to raise prices. Under a quota, imports cannot respond and thus provide no brake on domestic price increases, whereas under a tariff, imports increase at the tariff-inclusive price, limiting the ability of producers to raise prices.

## NEW SECTORS

The Uruguay Round achieved significant liberalizations in the traditional areas of trade negotiations, but what made it a breakthrough agreement was its extension of trade disciplines to three new areas: agriculture, services, and intellectual property.

### *Agriculture*

The Uruguay Round for the first time brings agriculture, a sector that accounts for 13 percent of world trade, under international trade rules. Measures to support farm incomes in the industrial countries have led to a variety of trade-restraining measures, excess production, and an expensive system of export subsidization that has done little to increase world demand for agricultural products but has greatly depressed world agricultural prices.

The agriculture agreement requires that nontariff barriers to agricultural trade be converted to their tariff equivalents, and that the resulting tariffs be reduced by a minimum of 15 percent in each tariff line and by an average of 36 percent overall. Countries are also required to grant minimum market access in products where there has been little or no trade. This means the end of the bans

on rice imports in Japan and the Republic of Korea, and commitments by all countries to increase wheat, corn, rice, and barley imports by a total of 3.5 million metric tons.

The agreement also contains first steps to reduce agricultural subsidies. Export subsidies must be reduced by 36 percent in value from 1986–90 levels over 6 years, and the volume of subsidized exports by 21 percent. Since current U.S. and European subsidy levels exceed this base, the actual reduction will be considerably higher. Domestic subsidies that increase output must be reduced by 20 percent from their 1986–90 levels.

Since the United States has a strong underlying comparative advantage in agriculture, the mutual reduction in trade barriers and subsidization will be to the distinct advantage of U.S. producers. Because European export subsidization in the base period used for calculating reductions was 14 times that of the United States, and domestic support 4 times as great, the European Union's subsidy reductions will dwarf those of the United States. As a result of world income gains and the realignment of world sales due to the Uruguay Round agreement, annual U.S. agricultural exports are expected to increase by somewhere between \$4.7 billion and \$8.7 billion by 2005.

### *Services*

The second new area opened by the Uruguay Round is international trade in services. This trade has grown to \$1 trillion per year and now accounts for over a fifth of all international trade. Services trade liberalization is of major concern to the United States, the world's largest services exporter, with annual exports of over \$170 billion and a surplus of \$59 billion in 1993.

The General Agreement on Trade in Services (GATS) is the first multilateral agreement covering services trade issues. The GATS has two distinct components. The first is a general statement of principles, such as national treatment and MFN treatment, that cover trade in services, along with descriptions of how these are to be interpreted in individual sectors (Box 6–2). Recognizing the differing ways in which services trade can take place, the GATS covers cross-border trade, movement of persons, and investment issues. The agreement creates a general obligation to offer MFN treatment to signatories, requires transparency in regulation of services, and brings services trade disputes under the general dispute settlement mechanism of the WTO.

The first component of the services agreement does not in itself create any liberalization of services trade. Liberalization is provided in the second component, where each country lists the sectors to which it will apply GATS obligations, as well as any exceptions to those obligations that it will maintain in each sector. Once a sector and its exceptions are listed, those commitments are bound,

**Box 6-2.—National Treatment, MFN, and Market Access Under the GATT and the GATS**

The fundamental principles on which the GATS is based mirror in many ways those applied to goods within the GATT, but there are some important differences.

**Most-Favored-Nation Treatment**

*GATT*: A country agrees to treat goods from other GATT members no less favorably than it treats those from any other foreign supplier, on tariffs and other measures that affect the import or export of goods.

*GATS*: Identical, except that there is a one-time opportunity to exempt specific service sectors from MFN obligations, for a period of up to 10 years.

**National Treatment**

*GATT*: Once foreign goods have entered a country and paid any tariffs or other customs duties, they must be treated no less favorably than domestically produced goods, and subject to no taxes or charges that are not also levied on domestically produced goods.

*GATS*: The same, but only for sectors listed by countries in their sectoral commitments, and subject to any exceptions listed in those commitments.

**Market Access**

*GATT*: No obligation.

*GATS*: No explicit definition. However, countries agree *not* to impose various limitations (on total value or quantity, extent of foreign investment or ownership, or number of persons employed) in sectors in which they make commitments.

and no further limitations on trade may be applied. The sectoral commitments, although neither as extensive as originally sought by the United States nor as far-reaching as those under NAFTA, do contain important liberalizations. Most country commitments include a standstill on new barriers, which is significant in many countries where services sector regulation is just beginning to develop. Countries made broad commitments in trade in professional services and tourism and agreed not to restrict access to telecommunications services to resident foreign-owned service providers. Negotiations on specific commitments in financial services, basic telecommunications, and maritime transport services were not completed by the end of the Round and are to continue. Despite

the negotiations that remain, the GATS is a breakthrough, not only for the specific liberalizations that it contains but also because it establishes the framework for further liberalization of trade in services, just as the GATT did for goods in 1947.

### *Intellectual Property Protection*

The extension of multilateral trade rules to intellectual property protection is a further area where the Uruguay Round broke new ground. The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) adopts and strengthens existing conventions on intellectual property, adds protection for several new areas including integrated circuits and computer software, and provides a mechanism to enforce intellectual property rights. It also extends national and MFN treatment to intellectual property holders. The agreement, with just a few exceptions, eliminates the ability of countries to deny patentability to certain categories of inventions such as pharmaceuticals and restricts forced licensing of technology.

Enforceability was a major concern in the negotiation. Principles of intellectual property law are set out in the agreement, along with requirements for transparency in application procedures, and disputes are covered in the general WTO dispute settlement mechanism. In return for substantial concessions on protection and enforceability, less developed countries received a lengthy transition period: 5 years for most of these countries and 11 years for the least developed ones.

### WIDENING PARTICIPATION

A failing of past trade negotiations was the limited number of countries that were active negotiating participants—many countries remained on the sidelines as free riders on others' liberalizations. Moreover, by the time the Uruguay Round was launched, GATT obligations had become a kind of a la carte system, where countries were free to subscribe to the agreements they chose and abstain from others. The Uruguay Round reversed this trend, both increasing the number of countries making concessions and achieving a much greater uniformity in the rights and obligations of GATT (now WTO) members.

The increased participation of countries in the negotiations was in large part due to a sea change in ideology in developing countries in favor of privatization, economic liberalization, and competition, as described in more detail below. But it also had much to do with the fact that the Uruguay Round was a "grand bargain," linking concessions by less developed countries on tariffs, services, and intellectual property with liberalization of trade in textiles, apparel, and agriculture.

The Uruguay Round has also done much to establish a single rulebook for international trade competition. In contrast to previous negotiations the outcome of the Uruguay Round, and WTO membership, is a single undertaking. With few exceptions (notably the agreement on government procurement), countries joining the WTO agree to all of its obligations—the GATT itself, the GATS, the TRIPs agreement, dispute settlement procedures, and others. Finally, the increasing perceived value of trade liberalization in many market economies and the breakdown of central planning in the economies in transition have resulted in a large number of new applicants for WTO membership, including China and Russia. Their accession negotiations require both adoption of WTO obligations and initial liberalization of trade, expanding the number of countries trading by a single set of rules.

## DISPUTE SETTLEMENT

Strengthening the GATT dispute settlement mechanism has been a longstanding goal of the United States; indeed, it was listed first among the principal U.S. negotiating objectives in the Omnibus Trade and Competitiveness Act of 1988. The previous GATT dispute mechanism suffered from long delays, the ability of accused parties to block decisions of GATT panels that went against them, and inadequate enforcement. The dispute settlement agreement addresses each of these issues. It guarantees the formation of a dispute panel once a case is brought and sets time limits for each stage of the process. The decision of the panel may be taken to a newly created Appellate Body, but the accused party can no longer block the final decision. A country that loses a dispute must either bring the offending practice into conformity, offer suitable compensation to the aggrieved parties, or face retaliation, which is now authorized under the agreement. Furthermore, this strengthened mechanism now becomes the single dispute settlement mechanism for the WTO, covering the GATT, the GATS, the agreement on intellectual property, and other agreements.

The dispute settlement issue has been important to the United States because this country has been the most frequent user of the GATT dispute mechanism. Frustration with the old mechanism was one of the factors behind the development and use of Section 301 of the Trade Act of 1974, which allows the United States to retaliate against “unjustifiable” or “unreasonable” foreign practices that hinder U.S. commerce. The new dispute settlement mechanism changes the sequence in which Section 301 is used but does little else to limit its use. Section 301 requires that, if a case involves an existing trade agreement, the United States must use the dispute settlement provisions of that agreement. If the United States wins a WTO case, and if the losing party does not then

change its practice or offer suitable compensation, Section 301 retaliation is authorized by the WTO.

Perhaps the most important use of Section 301 has been in the promotion of U.S. interests in cases not covered by multilateral trade rules, such as services and intellectual property in the past. Here Section 301 can be used as before both to promote U.S. interests and to prompt multilateral negotiations on new liberalization. Even with modifications in the use of the legislation, the *package* of the new dispute settlement mechanism plus Section 301 is a far stronger vehicle for defending U.S. interests. A strengthened dispute settlement mechanism and multilateral backing for retaliation greatly increase the leverage the United States will have in protecting its trading rights.

## THE WORLD TRADE ORGANIZATION AND U.S. SOVEREIGNTY

The GATT of 1947 was unusual in that it started out as a trade agreement, not an organization. Through improvisation and experience its small secretariat became an effective coordinating body for multilateral trade negotiations. The Uruguay Round establishes a World Trade Organization to bring under a single umbrella a variety of trade agreements negotiated under GATT auspices along with the single dispute settlement mechanism, and to regularize and clarify the practice that had been built up under the GATT. Although both the single undertaking and strengthened dispute settlement were U.S. objectives in the Round from the beginning, their achievement and the creation of the WTO have raised fears in some quarters that the United States might be surrendering sovereignty to an international organization over which it would have little control.

These fears are unwarranted. The WTO is an administrative body, designed to facilitate trade negotiations and dispute settlement among its members, not a legislature for creating obligations. Its charter explicitly links it to the decisions and customary practice under the GATT, including the dependence on consensus in reaching decisions. Although the principle of one country, one vote has always characterized the GATT, in fact GATT votes were almost never taken; decisions were reached on the basis of consensus among members. In practice, the United States has always had a major influence over the course of GATT policy, not because it has had a larger formal vote but, in baldest terms, because it brought the largest market to the table. The WTO does not change this. What the WTO does is to define fallback requirements if consensus is not reached. These are both limited in scope and stringent. Interpretations of agreements and waivers of obligations require a three-fourths majority of the entire membership (not just of those

voting), and the creation of a new obligation on a country is possible only if that country accepts it. In any case, each member has the ability to leave the WTO with 6 months' notice.

The most fundamental reason why U.S. sovereignty is not diminished by the WTO is that WTO agreements and dispute panel decisions do not have legal force in the United States (or in other member countries)—they are not “self-actuating.” In situations where existing U.S. legislation is contravened or new legislation required, it is up to the Congress whether to take that action. If the United States were to lose a dispute panel decision on a matter of fundamental national interest, it need not bring U.S. law or practice into conformity. The United States could instead offer compensation through liberalization in other areas, or accept equivalent foreign retaliation through increased barriers to U.S. exports. Panels rule on disputes that arise on rules and disciplines that WTO members have agreed to; they do not create new obligations. Furthermore, U.S. negotiators were particularly careful to limit the scope of panel review in cases involving national health and safety standards.

To allay concerns about the operation of the WTO, the Administration supports the establishment of a WTO Dispute Settlement Review Commission. The commission, which will consist of five Federal appellate judges, will review all final WTO dispute settlement reports adverse to the United States to determine whether the panel has exceeded its authority or acted outside the scope of the agreement. Following three determinations by the commission in any 5-year period that panels have so exceeded their brief, any member of the Congress may introduce a joint resolution to disapprove U.S. participation in the WTO. If the resolution is enacted by the Congress and signed by the President, the United States would withdraw from the WTO. By focusing informed, high-level attention on the operation of the WTO, the review commission should help develop a fair, effective, and widely accepted dispute settlement system within the organization.

Of course, the Uruguay Round agreement and the WTO do place obligations on the United States, but the balance of obligations in this accord is favorable, both because the United States had considerable influence on the Uruguay Round outcome, and because this country has a transparent, rules-based system and the WTO represents a convergence toward a system of this type. This point is important to consider when weighing the strengthened dispute settlement apparatus of the WTO. As with any legal institution, the force of dispute settlement will be established through use and experience. The U.S. interest in strengthening a rules-based international trading system implies that the United States should actively bring cases to dispute settlement and, in general, abide by

the results. This is not to say that the United States should ignore fundamental national interests in deciding whether to implement a WTO panel decision, but simply that our willingness to be bound by international trade disciplines will in large part determine whether those disciplines will be observed by others.

## FUTURE MULTILATERAL NEGOTIATIONS

The Uruguay Round of multilateral trade negotiations was such an ambitious and far-reaching undertaking that much of the multilateral trade agenda for the next few years will consist of developing experience with the agreement. Nonetheless, there are a few sectors where negotiations still need to be completed, new areas opened up by the agreement that need to be fleshed out, and areas that were not covered in the Round that will clearly form the basis of the future multilateral trade agenda.

Four sectoral negotiations in services were incomplete at the end of 1993 when the Round was drawn to a close: financial services, basic telecommunications, audiovisual services, and maritime transport services. In both financial services and basic telecommunications, a U.S. commitment to national treatment under the services agreement and a standstill on new measures would commit our vast and generally unrestricted markets to foreign competition. Therefore, in exchange, the United States has insisted on a relatively high level of liberalizing commitments by its trading partners as part of any agreement.

Although agreements were reached in other service sectors, liberalization in services generally is still in its infancy. Further bargaining on specific service sector liberalizations will take up much of the trade agenda for the next several years. The Uruguay Round agreement also sets the stage for continued negotiations on agriculture, covering further reductions in subsidies and tariff rates, and expansion of the volume of imports subject to lower duties under tariff-rate quotas.

The trading world rarely stands still for a negotiation to conclude, and certainly not for one that lasted as long as the Uruguay Round. New trade issues have arisen in the interim that will occupy trade negotiators. The most prominent of these—trade and the environment, competition policy, investment rules, and labor standards—are described in more detail below. In many cases these issues arose in regional and bilateral negotiations, to which this discussion now turns.

## PLURILATERAL INITIATIVES

Possibly the most distinctive legacy of this Administration in international trade is the foundation it has laid for the develop-

ment of open, overlapping plurilateral trade agreements as stepping stones to global free trade. The Administration's plurilateral initiatives in North America, the rest of the Western Hemisphere, and Asia embody principles of openness and inclusion consistent with the GATT. They will serve as vehicles for improving access to foreign markets and easing trade tensions, and as models for future multilateral liberalization through the WTO in areas such as intellectual property rights, services, investment, and environmental and labor standards.

## DYNAMIC EMERGING MARKETS

The recent U.S. emphasis on regional agreements responds to a massive shift taking place in the global economy. The economies of the world have long been categorized as either industrialized or less developed economies. Today, however, these distinctions are becoming obsolete as emerging economies in Asia, Latin America, and elsewhere are quickly approaching the ranks of the rich, industrialized countries. In the future these emerging economies are expected to grow rapidly and generate a larger share of world output and trade. The World Bank forecasts that developing economies will grow by 60 percent over the next decade, double the growth forecast for the industrialized countries. The share of gross world product produced in developing countries is expected to reach one-quarter by 2002, up from roughly one-fifth in 1972 (Chart 6-1). And purchasing-power-parity estimates, a more accurate method of making comparisons across countries, would attribute an even greater share of world output to developing countries.

Export and investment opportunities in emerging markets in Latin America and Asia will be a key engine of growth for the U.S. economy over the next decade. Exports are projected to grow far faster than other components of U.S. national income over that period. And this trend is already apparent. Over the last 7 years, U.S. exports of goods and services accounted for over one-third of economic growth, and export-related jobs grew over five times faster than total employment.

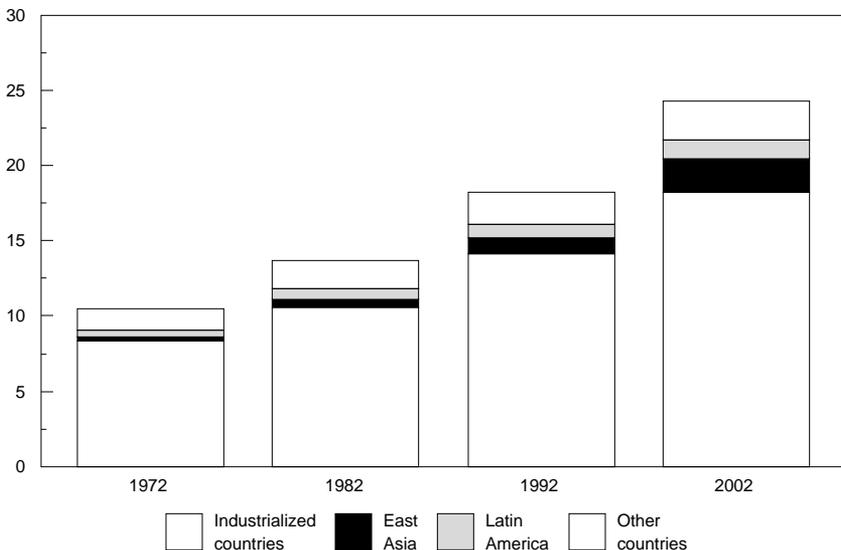
Much of this dynamism is driven by demand from newly industrializing and developing countries. Exports to emerging markets in Latin America and Asia are growing much faster than those to our traditional export markets. Already, U.S. exports to developing countries exceed exports to our traditional customers, Europe and Japan. This trend will continue, since emerging Asian and Latin American economies are expected to grow more than twice as fast as Europe and Japan.

Both Latin America and Asia are seeing a virtual explosion in the number of households with middle-class incomes and consumption patterns. By one estimate, China, India, and Indonesia will to-

### Chart 6-1 Income Growth in Industrialized and Developing Countries

The share of world income received by developing countries is expected to reach one-fourth by 2002.

Trillions of 1987 dollars



Source: International Bank for Reconstruction and Development.

gether have over 700 million middle-class consumers by the year 2010. That is roughly the current population of the United States, Europe, and Japan combined. As consumers in emerging markets join the middle class, their demand for household goods will soar, whereas in the United States and Europe most households already own such goods.

The rapid growth rates of emerging economies reflect a combination of factors, including technological catch-up to the most industrialized countries and, in many Latin American countries, recovery from the recessions associated with overindebtedness in the first half of the 1980s. More generally, economic theory predicts that lower income countries will grow faster than those with higher incomes, provided they are following sound economic policies. Because lower income countries have less infrastructure and plant and equipment, additional investments will be particularly productive. Less developed countries can also adopt and adapt technology that has already been discovered and developed in the rich countries. But there are prerequisites to taking advantage of additional capital and technology, among them stable political systems and sound economic policies. Broad access to primary education, an open economy, and sound macroeconomic policies all contribute to strong growth.

The most dynamic emerging economies have generally embraced market-oriented economic policies and opened themselves to the world economy. Not only have they lowered barriers to trade and investment, but they have adopted stable fiscal and monetary policies and transparent regulations. Many have also succeeded in improving the educational attainment of their work forces and have benefited from high rates of saving and accompanying high rates of investment. Sound economic policies will enable these countries to continue to take advantage of world capital flows and technological advances from abroad.

This rapid economic growth creates a number of opportunities for the United States. First, demand for U.S. products rises as the worldwide market grows. Many of these emerging economies will have particularly large demands for investment goods, transportation systems and products, infrastructure, environmental technologies, information systems, energy technologies, and financial services. These are all sectors in which the United States is particularly competitive.

In addition, countries that are growing rapidly are likely to invest more than they save. As long as they enjoy high growth rates and pursue sound economic policies, foreign capital will be readily available to finance this excess of investment over saving. Greater capital inflows in turn will permit greater imports from strong exporting countries such as the United States. Larger markets will also allow firms both in the United States and abroad to exploit greater economies of scale, as their fixed costs are spread across greater sales.

The Administration's regional initiatives in the Americas and in the Asia-Pacific community are critical for placing the United States squarely at the fulcrum of two of the most dynamic regions in the world.

## REGIONAL BLOCS AS BUILDING BLOCKS

From a purely economic point of view, the effects of increased regional integration are well understood. The establishment of principles and dispute resolution procedures governing international transactions regularizes and improves the environment for intraregional flows of goods, services, and investment. A plurilateral trade agreement generates an increase in trade among member countries, due to reductions in the cost of importing from each other that are associated with lower tariffs and enhanced market access. Thus, for example, in 1993, 55 percent of the trade flows of countries that belong to the European Union (EU) involved other EU member markets. In general, cheaper imports and more efficient production patterns should improve the well-being of the participating countries. But plurilateral liberalization may also re-

duce trade with countries that are not members, since imports from nonmember countries do not benefit from the reduction of trade barriers. Trade diversion arises when members of a plurilateral trade arrangement switch from importing goods from the lowest-cost nonmember market to importing from members, even though the tariff-free cost of the goods in nonmember countries is lower than that in member countries. The beneficial trade creation effects are more likely to outweigh the harmful trade diversion effects if barriers to imports from nonmember countries are not allowed to rise—a condition that is codified in Article XXIV of the GATT.

Trade creation is also more likely to outweigh trade diversion when the “natural” costs of trade such as freight and insurance are low among members, because of geographical proximity or shared borders, and high between members and nonmembers. In general, countries trade the most with countries that are geographically close: proximity and shared borders lower transportation costs and thereby lower the total cost of imports. It is for this reason that plurilateral agreements are so often regional in nature.

Plurilateral trade initiatives generally take one of two forms. Customs unions, like the European Union, require members to remove all barriers to trade with other member countries and to maintain a common external tariff toward nonmember countries. As a member of a customs union, when Germany wants to change its tariffs on imports from nonmembers, it must first persuade France, Spain, and all the other EU members to do the same. In contrast, free trade areas such as NAFTA liberalize internally but do not impose any restrictions on members’ external trade policies.

### *Stumbling Blocks*

Traditionally, economists have voiced concerns that an increased emphasis on plurilateralism might divert attention and energy away from multilateralism and result in harmful trade diversion. And indeed, certain types of preferential trade agreements can undermine the multilateral system.

In general, preferential trade agreements that reduce the discretion of member countries to pursue trade liberalization with nonmembers are more likely to become stumbling blocks. Thus, for instance, members of customs unions are unable either to negotiate tariff reductions with nonmembers individually or to reduce external tariffs unilaterally. In contrast, NAFTA allows its members to enter into trade agreements with outsiders, and indeed Mexico has negotiated separate free trade agreements with several other Latin American countries since signing NAFTA.

In addition, as a bloc expands, its bargaining power in international negotiations and its market power in international commerce grow, especially if it imposes a common external tariff. This may have the undesirable effect that the bloc finds it advantageous

to increase barriers to outsiders. These harmful effects are unlikely to arise in a free trade area as opposed to a customs union, and when external barriers are constrained by WTO disciplines.

### *Building Blocks*

When structured according to principles of openness and inclusiveness, regional blocs can be building blocks rather than stumbling blocks for global free trade and investment. Seen in this light, carefully structured plurilateralism is a complement rather than an alternative to U.S. multilateral efforts.

There are a variety of ways in which plurilateral agreements can serve as building blocks for multilateral market opening. First, plurilateral accords may achieve deeper economic integration among members than do multilateral accords because the commonality of interests is greater and the negotiating process simpler. The multilateral framework of the WTO achieves liberalization by requiring each member to extend any new trade preferences to all trade partners on a nondiscriminatory basis. Although this principle is intended to generate broad liberalization across countries, it may have the unintended effect that countries are less willing to offer concessions to certain of their trade partners because they must then offer the same concessions to over 100 other countries. Plurilateral agreements, by achieving both greater depth and breadth in their disciplines, can support the multilateral system by forging ahead on issues that are likely to be incorporated in future multilateral negotiating rounds.

Second, a self-reinforcing process is set in place by the creation of a free trade area. As the market encompassed by a free trade area expands, it becomes increasingly attractive for outsiders to join in order to receive the same trade preferences as member countries. Companies from nonmember countries find themselves at an increasing competitive disadvantage as the free trade area expands, and they petition their national governments to apply for membership.

Third, plurilateral liberalization encourages partial adjustment of workers out of the import-competing industries in which the country's comparative advantage is weak, and into exporting industries in which its comparative advantage is strong. As adjustment proceeds, the portion of the work force that benefits from trade expansion and liberalization rises, and the portion that loses out declines, which in turn builds political support for liberalization in a self-reinforcing process.

For all of these reasons, when plurilateral agreements are structured according to principles of openness, they tend to overlap and expand, building toward global free trade from the bottom up.

## *Open Regionalism*

Open regionalism refers to plurilateral agreements that are nonexclusive and open to new members to join. It requires first that plurilateral initiatives be fully consistent with Article XXIV of the GATT, which prohibits an increase in average external barriers. Beyond that, it requires that plurilateral agreements not constrain members from pursuing additional liberalization either with nonmembers on a reciprocal basis or unilaterally. Because member countries are able to choose their external tariffs unilaterally, open agreements are less likely to develop into competing bargaining blocs. Finally, open regionalism implies that plurilateral agreements both allow and encourage nonmembers to join. This facilitates the beneficial domino effect described above.

To ensure that its plurilateral initiatives strengthen the multilateral trading system and enhance market opening globally, the United States is pursuing a policy of open regionalism. The Administration is working to lay the foundations for a world with several overlapping, open plurilateral arrangements, with the United States playing a leadership role in North America, Asia, and Latin America, rather than two or three competing blocs.

## THE NORTH AMERICAN FREE TRADE AGREEMENT

On January 1, 1994, a historic trade agreement between the United States, Canada, and Mexico went into force. In both the level and the scope of the disciplines covered, NAFTA is the most far-reaching and forward-looking trade agreement ever adopted by these three countries. NAFTA provides for phased elimination of tariff and most nontariff barriers for both industrial and agricultural products, protection of intellectual property rights, investment rules, liberalization of services trade, and an innovative dispute settlement mechanism (Box 6-3).

### *The Economic Effects of NAFTA*

It is far too early to evaluate the full economic impact of NAFTA, since the provisions have been in place for only 1 year and many of the measures are being phased in over 10 to 15 years. There is a widespread consensus that NAFTA's overall net impact will be positive. But it is important to keep in mind that Mexico's GDP is only about 4 percent that of the United States, and that the United States had a preexisting free trade agreement with Canada when NAFTA was signed.

There are a number of reasons why NAFTA will benefit the United States. First, prior to NAFTA, Mexico had trade barriers that were 2.5 times higher on average than those in the United States. Thus it is Mexico that will undertake the greater reduction in trade barriers. Second, although investment barriers in Mexico have been

**Box 6-3.—NAFTA Highlights**

- Phaseout of most tariffs and nontariff barriers in industrial products over 10 years, including for all textiles and apparel that have substantial regional content
- Phaseout of tariffs and most nontariff barriers in agricultural products over 15 years
- Investment rules ensuring national treatment, eliminating most performance requirements in all sectors, and reduced barriers to investment in the Mexican petrochemicals and financial services sectors
- Liberalization of financial, land transportation, and telecommunications services markets
- Mechanisms for enforcement of national labor and environmental laws
- A dispute resolution mechanism
- Protection of intellectual property rights
- Funds for environmental cleanup and community adjustment along the border

lowered, making it easier to establish operations there, the fact that trade barriers are also being reduced makes investment in Mexico less necessary. Evidence suggests that most U.S. direct investment abroad is intended to gain market access, not to exploit low-wage workers or lax regulations. And indeed, some U.S. investments in Mexico have already increased U.S. exports dramatically. For instance, one major U.S. discount store chain has opened 9 stores in Mexico. The chain's Mexico City store alone sells \$1 million worth of merchandise on an average weekend, most of which is imported directly from the United States.

Third, although wages are lower in Mexico than in the United States, the productivity of Mexican workers is also lower than that of U.S. workers. Moreover, companies make plant location decisions based on a variety of factors in addition to wages, including telecommunications and transportation infrastructure and business services, all of which are more sophisticated in the United States.

Perhaps most important is the simple fact that trade liberalization encourages specialization that benefits both countries. Thus, while NAFTA is expected to raise production in Mexico of goods that require a lot of low-skilled labor hours, there should be a concomitant increase of production in the United States of goods that require highly skilled labor. Specialization allows both types of goods to be produced more cheaply, lowering the cost of living for the population on both sides of the border. Moreover, increased trade and investment associated with NAFTA should result in higher income in Mexico, which in turn will translate into greater

demand for U.S. exports, and increased investment and employment in export industries in the United States.

Although the beneficial effects will take years to manifest themselves fully, the results to date confirm the view that NAFTA is good for the United States, Mexico, and Canada. So far there is little evidence of the sucking sound that critics had alleged would accompany NAFTA. Indeed, the sounds most associated with NAFTA are those of trains, trucks, and ships loading cargo bound for destinations across the border. Overall, U.S. exports to Mexico grew by 21.7 percent in the first three quarters of last year over the same period in 1993—more than twice the growth rate of U.S. exports overall. Imports from Mexico have also increased by 22.8 percent, but much of this import growth is associated with the strength of the economic recovery in the United States during the period, and would most likely have taken place in the absence of NAFTA, since U.S. barriers on many Mexican imports were already low.

While the rapid growth in trade between the United States and Mexico testifies to the opportunities created by NAFTA, it is important to emphasize that the bilateral balance of trade is not a scorecard by which to judge the success or failure of the agreement. The United States gains from its imports from as well as its exports to Mexico, from the ability to specialize and compete more effectively in world markets, and from the opportunities opened up to U.S. firms in Mexico as it develops. Trade between the two countries will grow rapidly, but the trade balance will fluctuate, depending on macroeconomic conditions in the two countries, just as the rapid growth in the U.S. economy boosted U.S. imports during the past year.

The NAFTA also benefits the United States through the more prosperous and stable Mexico that it fosters. This is particularly important, since the United States and Mexico are so closely linked by geography as well as economy. As Mexican wealth and political stability increase, the result is not only a larger market for U.S. exporters, but also higher environmental standards and reduced illegal immigration.

### *NAFTA and the Peso*

On December 22, 1994, the Mexican Government decided to abandon the fixed exchange rate between the Mexican peso and the dollar, allowing the peso to float. The decision came after intense pressure on the peso in foreign exchange markets had severely depleted Mexico's international reserves. The pressure resulted from Mexico's inability to finance its large current account deficit, which reached almost \$30 billion in 1994, or about 7.6 percent of GDP.

Following Mexico's debt repayment problems in the early 1980s, its government pursued a course of macroeconomic stabilization that included fiscal restraint, wage and price restraints, and a tar-

get range for the dollar value of the peso. As part of its inflation-fighting measures, starting in the late 1980s, the government adjusted the target range for the peso more slowly than the rate of inflation. By 1994 the peso had appreciated significantly in real terms, making foreign goods cheaper for Mexican consumers. Real appreciation was accompanied by increasing trade and current account deficits, which were financed by borrowing from foreign investors, a large portion of which took the form of short-term portfolio investment. As the Mexican presidential election approached in 1994, an uprising in the State of Chiapas and the subsequent assassination of the ruling party's candidate contributed to investor uncertainty. As investors lost confidence and the inflow of portfolio capital dried up, the government found it increasingly difficult to maintain its exchange-rate policy, and eventually it decided to let the market determine the value of the peso.

Shortly afterward, the Mexican Government announced a comprehensive economic plan to restore confidence and stabilize the economy. At the request of the Mexican Government, the United States organized a financial stabilization package of \$18 billion designed to restore investor confidence and give the Mexican Government breathing room to implement its economic package. The package included multilateral and private sector participation.

However, despite the decision to float the peso and the announcement of the international support package, pressures on the peso continued. Investors became increasingly reluctant to roll over maturing short-term obligations of the Mexican Government and, in some cases, of Mexican banks. The flight from Mexican assets also showed signs of spreading to other emerging markets.

In order to restore confidence in emerging financial markets, the President decided to expand U.S. financial support for Mexico to \$20 billion. The U.S. support includes short- and medium-term swaps (an exchange of dollars for pesos for a specified period of time) and longer term loan guarantees. The Treasury's Exchange Stabilization Fund is providing a substantial portion of this support. In addition, the Federal Reserve is providing a part of the support, in the form of short-term swaps. These guarantees and swaps are structured to provide maximum protection for U.S. assets and to encourage the Mexican Government to return to private sector financing as soon as possible. In order to make use of the guarantees, the Mexican Government will be required to pay large up-front insurance fees. All drawings will be backed by claims on the proceeds from oil exports. The swap facility must be fully repaid; it is not a grant. The United States has had a swap line with Mexico for over 50 years, and Mexico has repaid all of its drawings.

Additional financial support will come from a variety of sources. The International Monetary Fund (IMF) made a commitment to

provide a total of \$17.8 billion, from a combination of its own resources and contributions from member countries. The Bank for International Settlements committed \$10 billion in short-term financing, Canada committed itself to provide a \$1 billion swap facility, and Argentina and Brazil committed themselves to arrange \$1 billion in financial assistance to Mexico.

Together, these resources will enable the government of Mexico to refinance its debt and shift to longer term maturities, thereby easing the current liquidity squeeze. The support package imposes stringent financial conditions. Mexico must implement an economic plan that includes reductions in government spending, an incomes policy to reduce inflation, and tight control of credit. Mexico has also pledged to accelerate the privatization of key industries and increase access for U.S. and other foreign investors. These measures are designed to ensure that Mexico will be able to restructure and service its debt and to restore economic stability and growth.

It is also important to understand that NAFTA neither contributed to the peso devaluation nor in any way affected the U.S. Government's response. Indeed, the NAFTA measures adopted by Mexico to lock in market reforms and provide safeguards for foreign investors have, if anything, shored up investor confidence and mitigated the peso depreciation. The United States is providing support to Mexico because we have a stake in the stability of a country with whom we share a 2,000-mile border and important commercial ties. There is no commitment under NAFTA to do so.

### *NAFTA Side Agreements*

NAFTA includes three innovative side agreements that reflect the Administration's commitment to ensure that expanded trade does not result in deterioration of environmental or labor standards on either side of the border or in damaging import surges. The labor and environmental side agreements define guiding principles and create institutions to ensure that each member country enforces its own laws protecting labor and the environment. They are described in detail below. The side agreement on import surges creates an early warning mechanism to identify sectors where rapid growth of imports is likely to generate significant dislocation of domestic workers. If a domestic industry is threatened by serious injury from an import surge during the NAFTA transition period, a temporary snapback to pre-NAFTA duties is permitted as a safeguard. However, if exports from a NAFTA member do not account for a substantial share of total imports or do not contribute significantly to the threat of injury, the member country's exports must be excluded from safeguard actions.

## *Adjustment*

Although the United States chose to join NAFTA because it will benefit U.S. consumers, shareholders, farmers, and workers generally, it was also recognized that some jobs in some industries would be threatened by increased imports from Mexico. NAFTA contains a number of provisions intended to mitigate these adjustment costs. First, the elimination of trade barriers is phased in over 10- to 15-year horizons in industries where liberalization is expected to require significant adjustment. Second, there are safeguard provisions (described above) permitting the temporary imposition of trade restrictions when surges in imports cause serious injury to a domestic industry. Third, the U.S. implementing legislation established a Transitional Adjustment Assistance (TAA) program for workers who experience or are threatened with job loss or reduction to part-time status as a direct result of either increased imports from or a shift of production to Mexico or Canada, to help them retool and reengage. There is no requirement that the dislocation be directly related to NAFTA, although it must have occurred after NAFTA went into effect. Assistance includes employment services, training, income support following exhaustion of unemployment insurance, job search allowances, and relocation allowances.

As of November 1, 1994, the NAFTA-TAA program had approved assistance for over 12,000 workers. In two-thirds of these cases, the dislocation was associated with either a shift of U.S. production to or increased imports from Mexico. Eighty-eight percent of the NAFTA-TAA-certified layoffs were in manufacturing firms, 9 percent were in agriculture, and 3 percent were in services industries. Within manufacturing, the apparel, industrial machinery and equipment, electronic and other electric equipment, and instruments and related products industries accounted for 72 percent of the certified layoffs. Most of the firms that have qualified for NAFTA-TAA so far are smaller manufacturers producing apparel or parts and components with either less skilled workers or less sophisticated factory equipment.

The NAFTA-TAA program indicates that increased trade with Mexico and Canada has had an adverse effect on some workers, although the number of job losses has been small relative to the 100,000 jobs estimated to have been created through expanded exports to Mexico. Reemployment data on NAFTA-TAA-certified workers are not yet available, so it is too early to tell how long-lived the job displacement effects will be. However, it is important to recognize that layoffs and other displacements are a constant feature of the U.S. economy, and that relative to overall annual job losses for workers with over 3 or more years on the job (1.5 million

per year on average between 1991 and 1993), the displacement associated with NAFTA is very small.

### *NAFTA and Open Regionalism*

NAFTA is both the United States' most significant plurilateral initiative to date and a likely model for such initiatives in the future. As such, it is worth noting that NAFTA is consistent with open regionalism along all the dimensions discussed above. First, it explicitly prohibits any increase in external barriers, and indeed external barriers in all three of the member countries are scheduled to fall as part of the Uruguay Round agreement. Second, it imposes no constraints on the ability of member countries to lower their barriers to nonmember countries, and indeed Mexico has granted trade preferences to several nonmember countries since the agreement was signed. And third, NAFTA contains a provision specifying that the members can choose to admit additional members. Indeed, the President, together with the Prime Minister of Canada and the President of Mexico, announced the start of accession negotiations with Chile in December 1994.

### SUMMIT OF THE AMERICAS

On December 9, 1994, the President convened the first-ever hemispheric summit held in the United States—and the first to be attended solely by democratically elected leaders. The summit celebrated an unprecedented conjuncture in the hemisphere's history. For the first time, all 34 leaders share a common commitment to democracy and open markets. Many of the Latin American leaders have put their countries on a course of stable, sustainable economic growth by taking difficult steps to address the indebtedness, rampant inflation, and high unemployment that robbed this region of a decade of growth.

The cornerstone of the summit was the call by all leaders for the creation of a Free Trade Area of the Americas (FTAA) by 2005. This will create a market of over 850 million consumers with a combined income of roughly \$13 trillion. It will also level the playing field for U.S. exporters, who currently face Latin American trade barriers over three and one-half times those in the United States. It is critical to secure a commitment to work toward a hemispheric free trade area now, even though it will take years to achieve, in order to set the standard in the region and ensure that subregional integration initiatives are consistent with the goal of creating the FTAA and with the multilateral system.

The President tangibly demonstrated his commitment to this goal by announcing that the United States along with our NAFTA partners Mexico and Canada will initiate negotiations with Chile on accession to NAFTA. The inclusion of Chile would expand the total population of NAFTA to 381 million and its combined income

to 30 percent of the world's total. The United States is an important trade partner for Chile; U.S. exports already account for over 20 percent of Chile's total imports.

The decision to start accession discussions with Chile reflects the enormous progress that country has made in achieving macroeconomic stability, liberalization of trade and investment policy, convertibility of the currency, improvement of living standards, and alleviation of poverty. Through a combination of stabilization and liberalization measures, Chile has achieved sustained real growth of 7 percent on average over the past 8 years. It has brought its external tariffs down by 79 percent since 1975. These measures have led to significant inflows of foreign capital, and the ratio of foreign debt to GDP has been reduced by nearly 60 percent since 1985. At the same time, inflation has fallen to 10 percent per year and unemployment is a low 4.5 percent.

At the Summit of the Americas the leaders set in place a process for achieving free trade in the hemisphere. Over the next several months members of existing subregional trade groups such as NAFTA will hold consultations on achieving regional trade liberalization. The United States will initiate discussions to determine interim steps with each of the countries in the region through previously established Trade and Investment Councils. The Administration will hold discussions with the Congress and with the United States' NAFTA partners on NAFTA expansion. In addition, the Organization of American States' Special Committee on Trade will develop a compendium of all existing trade agreements within the hemisphere to increase transparency and identify areas of potential trade facilitation, such as customs harmonization. Meetings of the countries' ministers are scheduled for June 1995 and March 1996 to review progress and further define the work program.

### *Economic Impact*

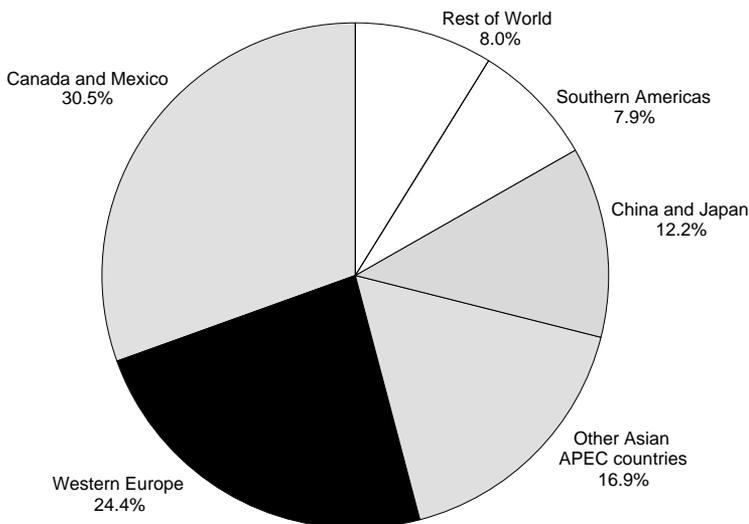
The southern Americas (here defined to include Central America, the Caribbean except for Cuba, and South America) make up one of the most economically dynamic regions in the world. Sustained income growth in the region reflects in part a robust recovery from the recessions associated with the debt crisis of the early 1980s, and in part significant structural reforms on the domestic front and in trade policy. Many of the countries in the region are expected to continue to experience high growth rates due to the reduction of both debt levels and inflation through macroeconomic stabilization measures. The southern Americas account for about 6.5 percent of world population and 3.5 percent of world income. Brazil is by far the largest country in this region, with over 40 percent of the region's income and population.

As income in this region grows, its imports from the United States will grow even faster. Over the past 5 years, exports from

the United States to the southern Americas have grown almost 10 percent per year—far faster than the region’s income growth. By far the greatest share of the region’s imports—29 percent—come from the United States. This reflects in many cases geographical proximity, as well as historical and cultural ties. Interestingly, however, Brazil’s largest trade partner is not the United States but the European Union, which accounts for 25 percent of Brazil’s trade compared with 22 percent for the United States. Overall, the southern Americas currently account for nearly 8 percent of U.S. exports, as shown in Chart 6–2.

**Chart 6-2 U.S. Merchandise Exports by Region in 1993**

By far the majority of U.S. exports go to our NAFTA partners, Western Europe, and the APEC countries. The southern Americas take nearly half of the remainder.



Note: The southern Americas include Central America, the Caribbean except for Cuba, and South America. Percents do not add to 100 because of rounding.  
Source: Department of Commerce.

As noted above, Latin American tariffs are over three and one-half times those in the United States on average. Thus, trade liberalization is likely to result in increased market opportunities for U.S. products and associated export and job growth. A variety of studies have analyzed the impact of a possible hemispheric trade agreement on the U.S. economy. Most of these studies find that the effects of expanding NAFTA southward will be beneficial for both the U.S. economy and our regional trade partners.

In addition to the direct beneficial effect of cheaper imports from the United States and expanded export opportunities, countries in the southern Americas would benefit from the enhanced credibility of their market reforms that a trade liberalization agreement with

the United States or NAFTA would bring. This commitment to a liberal trade regime should increase investment by both domestic and foreign investors and contribute to long-term growth. This is good for the United States both because it will improve the prospects for peace and political stability in the region and because it will further raise the purchasing power of southern American consumers, increasing their spending on U.S. goods.

If instead the United States should fail to recognize the historic opportunity that this conjuncture represents, and if we do not work to improve access to southern American markets for both trade and investment, U.S. companies and workers will lose out to foreign competitors. Most countries in the southern Americas have already joined one of four preferential subregional trading blocs. Most of these subregional blocs have plans to adopt a common external tariff (CET). This will make it more difficult for countries to liberalize individually and will result in diversion of imports in favor of member-country products and away from U.S. products. In the case of Mercosur—the largest group, whose membership includes Argentina and Brazil—a CET was scheduled to go into effect in January 1995 on products accounting for roughly half of imports from nonmember countries. Coverage will be expanded to all products by early in the next century. Led by Brazil, Mercosur is also working to conclude agreements with Chile and Bolivia, as well as with the European Union, and has plans to create a South American Free Trade Area. Unless we move soon, U.S. exporters will be at a disadvantage relative to their competitors inside these blocs.

## ASIA-PACIFIC ECONOMIC COOPERATION

Asia-Pacific Economic Cooperation (APEC) was first established in 1989 as a regional forum for economic cooperation. APEC has since expanded to include 18 members: Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, the Philippines, Singapore, South Korea, Taiwan, Thailand, and the United States.

At the President's invitation, the leaders of the APEC countries met in 1993 in Seattle. There they put forth their vision of an Asia-Pacific economic community. Last November in Bogor, Indonesia, the APEC leaders established a common frame of reference for achieving that vision. They made a political commitment to eliminate barriers to trade and investment in the region by the year 2020. All countries will begin to liberalize at a common date, but the pace of implementation will take into account the differing levels of economic development among APEC economies: the industrialized countries will achieve free and open trade and investment no later than 2010, and the developing economies no later than 2020. The leaders also reaffirmed their support for the multilateral trad-

ing system and APEC's continued commitment to global trade liberalization and to the WTO-consistency of any APEC trade and investment initiatives. The APEC leaders instructed their ministers to work together to develop a detailed blueprint, laying out an action plan and timetable to achieve progressive liberalization in the region. The leaders will review this blueprint at their meeting in Japan in 1995.

Over the next year the Administration will work to ensure that the action plan describes comprehensively and in detail the process by which Asia-Pacific free trade and investment will be achieved. The Administration will consult closely with the Congress and the U.S. business community as it works with our APEC partners to develop a plan that addresses the widest possible range of barriers to the free flow of goods, services, and capital. APEC may focus initially on trade facilitation issues, such as standards conformance and customs simplification. The liberalization process will build on the Uruguay Round's achievements, possibly accelerating the implementation of commitments in the early stages of APEC liberalization, and also on the work program undertaken by APEC's Committee on Trade and Investment. Negotiators may work on issues not covered adequately in the WTO and issues of particular importance to APEC members—including investment, intellectual property, rules of origin, some service sectors, government procurement, competition policy, and infrastructure, as well as elimination of tariffs and nontariff barriers.

### *The Economic Importance of the Asia-Pacific Region to the United States*

APEC's markets are critical to U.S. exporters, both for their size and because of their dynamism. The 14 Asian APEC economies already account for \$135 billion, or nearly 30 percent of U.S. exports in 1994 (Chart 6-2). By comparison, Western Europe accounts for less than one-quarter. The Asian APEC economies are among our fastest-growing export markets: U.S. exports to Asian APEC members grew 9.9 percent per year on average over the past decade, compared with 8.3-percent growth in U.S. exports to the rest of the world. Their aggregate income of nearly \$6 trillion accounted for one-quarter of world income in 1992 and is projected to grow 4.4 percent per year in real terms over the next decade. U.S. exports to the region are projected to grow even faster than income, at a rate of 6.4 percent per year.

Although the opportunities for U.S. businesses are tremendous, the obstacles are often very large. Between 1989 and 1992, automobile sales in Malaysia, the Philippines, and Thailand doubled, but tariffs on automobile imports into these countries remain high at between 17 and 57 percent. Studies estimate that Asian APEC members will invest \$1.1 trillion in infrastructure projects over the

next 6 years. China, which alone accounts for nearly half of this planned investment, has tariffs of 38 percent on machinery and equipment and 15 percent on steel. Overall, manufactured imports into Asian APEC markets face tariffs much higher than the average tariff on imports into the United States. Market-opening initiatives through APEC will help reduce these barriers, creating tremendous opportunities for U.S. companies and workers.

U.S. companies must remain actively engaged in the region or risk losing out to Asian competitors. Currently 58 percent of total imports by Asian APEC economies are from other Asian APEC economies—over three times the share from the United States. And this intra-Asian share is growing rapidly. The liberalization measures that APEC members will undertake will be critical in ensuring that U.S. firms are able to compete on equal terms in this large, booming market.

## BILATERAL NEGOTIATIONS

At any time the United States is engaged in several negotiations with individual countries on trade issues or disputes. These bilateral negotiations are less glamorous than multilateral or plurilateral trade initiatives, but they are extremely important in opening up markets, settling disputes, and protecting U.S. trading rights. In addition, these negotiations are often where new trade issues are first discussed or tested. Although the United States has bilateral negotiations at one time or another with almost every country with which we trade, we focus here on two bilateral relationships of particular importance, those with Japan and China, and on the Administration's broader export strategy.

### JAPAN

One of the most prominent of our bilateral trade relations, and the one that generates the most negotiating activity, is that with Japan. This is to be expected given the size of the trade involved (\$155 billion in total trade in 1993, the second largest among our trading partners), the size of the bilateral trade imbalance (a U.S. deficit of \$60 billion, our largest with any country), and the character of the barriers to foreign goods within Japan.

Last year's *Report* examined the character of the Japanese economy and Japanese trade in detail. Japan has relatively low formal trade barriers outside the agricultural sector. Yet at the same time Japan has strikingly low levels of import penetration in many sectors in which there is very large mutual trade among most industrialized countries. Japanese domestic prices for traded goods are often significantly above world market prices, even after accounting for taxes, tariffs, and higher distribution charges.

Although there are examples of foreign firms that have done very well in the Japanese market, there are also widespread complaints, and not just from American firms, that the Japanese market is closed to outsiders. The barriers are often subtle and take a variety of forms. Government licensing, regulation, and administrative guidance, restrictions on product specifications or pricing, and procurement practices all can be difficult for foreign firms to satisfy, and often difficult even to discover. In other cases private practices, such as control over distribution channels, group affiliations, or share crossholdings, make it difficult for foreign firms to sell or invest in Japan. The fact that the barriers vary from industry to industry, and are often opaque, means that negotiations are extremely detailed, sector-specific, and time-consuming. The Market Oriented Sector Specific (MOSS) negotiations of 1985–86 were the first of a series of targeted attempts to open individual markets. The Semiconductor Trade Agreement in 1986 also focused on the effective opening of a single sector. The Structural Impediments Initiative (SII) of 1989–90 took a somewhat different approach, focusing on the macroeconomic balance between national saving and investment that lies behind both Japan's large global current account surplus and the large deficit in the United States, while at the same time tackling a series of regulatory and competition issues that stood in the way of increased foreign sales in Japan.

The President and the Japanese Prime Minister announced their Framework for a New Economic Partnership at the July 1993 economic summit in Tokyo. The Framework contained macroeconomic goals and five sectoral and structural "baskets" for talks between the two nations. The macroeconomic goals included a shift to domestic demand-led growth in Japan to reduce its current account surplus, and a reduction in the U.S. fiscal deficit and an increase in the U.S. saving rate. The baskets were government procurement, regulatory reform and competitiveness, major sectors (most prominently, automobiles and parts), economic harmonization, and follow-up on the implementation of existing agreements.

Negotiations were complicated by two major changes in Japan's government, and in addition, talks broke down temporarily in February 1994. Despite their rocky path, a series of results and agreements were reached in the fall of 1994. Both sides made progress in macroeconomic policy that should narrow the overall deficit in each country. The Congress passed the Administration's deficit reduction program in August 1993, and the Japanese Diet voted to increase government spending and cut income taxes, while postponing a planned increase in consumption taxes. Japan's fiscal measures have contributed to its emergence from recession, and its current account surplus has fallen as a percentage of GDP and should fall further in the near term.

In the economic harmonization basket, the United States reached an agreement on intellectual property protection last August that enhances the ability of U.S. inventors to apply for and be granted patent protection in Japan. In procurement, the United States reached agreements in telecommunications equipment and services covering purchases both by the government and by the dominant Japanese telecommunications firm (in which the government still owns the majority share), a combined market of \$11 billion per year. The agreements call for more complete information about procurement plans to be made available at an earlier stage, full consideration of international standards for equipment, and the use of overall best value to judge competing bids. A similar agreement was reached in medical technology products and services, a market of \$2.6 billion per year.

Two agreements were reached in financial services. In insurance, a market worth \$320 billion per year, Japan agreed to ease restrictions on the introduction of new products, ease rate restrictions on policies to large customers, and deregulate the industry in such a way as not to prejudice the interests of foreign insurers, who are now active in only a small, specialized segment of the market. In January 1995 the United States and Japan reached an agreement to further liberalize the Japanese financial sector. The Japanese Government agreed to open the \$200 billion public pension fund market to foreign investment advisory services, relaxed the conditions for issuing corporate debt, agreed to introduce a domestic derivatives market, and eliminated various restrictions on cross-border capital movements.

In the \$4.5 billion flat glass industry, where the existence of restrictive practices had been confirmed by Japan's Fair Trade Commission, an agreement was reached in December committing Japanese distributors to carry imported glass, and requiring the Japanese Government to consider foreign glass in public procurement.

The one critical area where no agreement has been reached is automobiles and parts, the largest single sector in the Framework talks. The issues in these negotiations are access to the Japanese auto dealership network, the removal of regulations that limit foreign sales of replacement auto parts, and increased participation in the original-equipment auto parts market, including participation in the design stage. In response to the meager progress in the automobile trade talks, the Administration initiated a Section 301 investigation in October covering the replacement parts sector, where the involvement of the Japanese Government is clearly defined, and made it clear that the United States expected progress in the original-equipment parts and automobile markets as well.

From the beginning, the Administration has insisted that the Framework negotiations should lead to agreements that produce

significant, measurable results. The two countries agreed that objective criteria, either qualitative, quantitative, or both, be used to evaluate the agreements over time as to whether tangible progress was being achieved. Arguments over these criteria were the most controversial part of the Framework. The Administration was widely criticized, both in Japan and elsewhere, for attempting to “manage trade” or set market share targets.

These criticisms are and were disingenuous. None of the agreements set market share targets, either for U.S. firms or for foreign firms generally. A wide range of objective indicators was suggested and ultimately agreed to, with different indicators for different sectors depending on the characteristics of each sector. Furthermore, none of the market access concessions are limited to U.S. firms; Japanese market-opening measures are available to all on an MFN basis.

The Administration intends to continue to explore market-opening measures with Japan, and to ensure that agreements lead to tangible increases in opportunities for U.S. and other foreign suppliers to sell in Japan. In addition to the negotiations on automobiles and auto parts, the Administration is now engaged in discussions on reducing barriers to foreign investment in Japan and more rigorous enforcement of Japanese antitrust laws.

The Framework negotiations on deregulation have recently taken on increased importance due to internal developments in Japan. The high cost to Japan of its extensive regulation of the economy has become increasingly apparent, and there is growing demand within the Japanese business community for deregulation. The United States has both specific and general interests in a thoroughgoing deregulation of the Japanese economy. Many of the sectoral issues concern regulatory barriers, and the United States has presented detailed requests for regulatory changes. But the United States also has a strong interest in generalized deregulation of the Japanese economy, which would reduce barriers to entry for all firms in Japan, both domestic and foreign.

Despite the length and occasional acrimony surrounding sectoral liberalization negotiations with Japan, the talks work. One study has shown that U.S. exports to Japan in those sectors covered by trade negotiations increased almost twice as fast as total U.S. merchandise exports to Japan, and estimated that the negotiations were responsible for an additional \$5 billion in annual U.S. exports. It is also important to emphasize that it is not only the United States but also the Japanese consumer who gains from these agreements, in the form of lower prices and a wider choice of goods.

## CHINA

The Administration is pursuing a carefully balanced economic policy toward China that takes into account the tremendous opportunities for U.S. exports associated with that country's rapid growth, as well as its geopolitical importance and Americans' concerns about China's protection of human rights. The goals of U.S. policy are threefold: promotion of U.S. commercial interests, to raise standards of living in the United States; encouragement of continued economic reform within China and its integration into the world economy, with the expectation that these will help realize U.S. foreign policy goals including democratization and protection of human rights and the environment; and promotion of global cooperation and integration in the interests of peace and prosperity.

### *Economic Importance*

China's economy is large, dynamic, and relatively poor. Although it is estimated to be the world's third-largest economy in purchasing-power-parity terms, China's per capita income even by that measure is roughly one-tenth that of the United States. Measures based on current exchange rates rank China eighth in total output and yield a per capita income nearly 50 times smaller than that of the United States. Even if China's recent real growth rates of 9 percent per year (the highest in the world) are maintained, it will be decades before per capita income in China approaches those of developed countries today.

For much of its history since the 1949 communist revolution, China maintained a virtually closed, centrally planned economy, which was accompanied by economic stagnation. Sweeping economic reforms undertaken since the late 1970s have contributed to explosive growth and a decline in central government control. In the agricultural sector this has taken the form of decollectivization and a return to smallholder farming. In the industrial sphere the management of state-controlled firms has been decentralized, and the government has permitted the rapid growth of township and village enterprises; private enterprises now account for half of industrial output. By the early 1990s prices for 95 percent of retail sales, 90 percent of sales of agricultural commodities, and 85 percent of capital goods sales were determined by the market. Factor markets have also been liberalized: state control of labor markets has been reduced, and previously repressed capital markets have been allowed to develop in fits and starts, although they remain primitive by Western standards.

As the government has instituted market reforms and liberalized, China's economy has become increasingly integrated into the global economy. China's share of world trade grew from 0.6 percent in 1977 to 2.5 percent in 1993—making it the world's 11th-largest

exporter. Similarly, flows of foreign direct investment into China exceeded \$25 billion in 1993, in marked contrast to the prereform years when such investment was prohibited. And these two trends are closely related: firms with foreign equity participation accounted for two-thirds of the expansion of exports in 1992 and 1993.

China has run global trade deficits in most years since reforms were initiated—indeed, China registered a deficit last year of \$12.2 billion. However, China has run a growing bilateral trade surplus with the United States, which reached \$22.8 billion in 1993. China's persistent surplus with the United States in part reflects its specialization in inexpensive mass-market consumer goods. China similarly runs bilateral surpluses with Japan and Europe for this reason. Moreover, increases in the bilateral surplus with the United States since the mid-1980s in large part reflect the movement of labor-intensive production of goods such as shoes, garments, and toys from Hong Kong and Taiwan to China, to take advantage of lower wages. Table 6-2 makes clear that the increase in the U.S. deficit with China has partially been offset by declines in the deficits with Hong Kong and Taiwan.

TABLE 6-2.— *U.S. Trade Deficits with China, Hong Kong, and Taiwan*  
 (Millions of dollars)

Year	Total	China	Hong Kong	Taiwan
1987 .....	25,876	2,796	5,871	17,209
1993 .....	31,392	22,777	-319	8,934

Source: Department of Commerce, Bureau of the Census.

The Chinese trade regime has been liberalized in several ways. The role of state trading firms in intermediating international trade has been greatly reduced. Export subsidies have largely been eliminated. The former system of multiple exchange rates for differing types of transactions was unified and the currency devalued; the yuan is now convertible for most categories of transactions. As trade has been liberalized, China's trade pattern has increasingly conformed to conventional theories, with China exporting labor-intensive products and importing capital goods. Nonetheless, China's trade regime has remained selectively protectionist, with multiple overlapping barriers to trade in some goods and discriminatory rules on investment and services. The absence of effective protection for intellectual property rights has cost U.S. businesses hundreds of millions of dollars in lost sales.

Ultimately the combination of rapid economic growth and greater, albeit uneven, trade openness means that China will be a major market for U.S. goods and services. China's market presents the

greatest growth opportunities in aerospace, power generation equipment, environmental technologies, and computers, among merchandise exports. Among services there are opportunities in financial (including insurance), information, distribution, accounting, audiovisual, and legal services.

### *Most-Favored-Nation Status*

China is subject to the Jackson-Vanik Amendment to the Trade Act of 1974, since the U.S. Government defines China as a nonmarket economy. The amendment requires that each year, in order for China to qualify for MFN status, the President must issue a waiver certifying either that China does not impede emigration or that providing MFN status will lead to increased emigration. In May 1994 the President renewed MFN status for China in the context of a broader policy that includes delinking MFN renewal from human rights issues other than emigration; a ban on imports of Chinese munitions; maintenance of the U.S. economic sanctions imposed in response to the Tiananmen Square tragedy, including denial of Chinese participation in Overseas Private Investment Corporation and Trade and Development Agency programs; and a vigorous and broad-based human rights policy. The President determined that renewal of MFN status offered the best way to promote the full range of U.S. interests in China, including human rights, strategic, and economic interests. Moreover, the President determined that China had made sufficient progress on the conditions he had imposed when renewing China's MFN status in May 1993—in particular, on compliance with a 1992 agreement on the treatment of prison labor, in addition to guaranteeing freedom of emigration.

The decision to pursue a vigorous human rights policy separately from MFN renewal reflected a determination that protection of human rights is most likely to be achieved through a combination of carefully targeted initiatives and China's continued economic reform and integration with the world economy. The Administration is promoting human rights in China by a variety of means including increasing international broadcasting to China, support for nongovernmental organizations (NGOs) there, encouragement of multilateral participation in our human rights initiatives, and development, in consultation with the business and NGO communities, of a set of ethical principles for business conduct as models for all companies engaged in international business.

The decision also recognized that substantial economic disruption in both China and the United States would accompany MFN revocation, along with significant damage to the broader bilateral relationship. Revocation of MFN status would result in tariff increases on Chinese imports of 5 to 10 times their current level, depending on the product. The ultimate effect on consumer prices and con-

sumption would depend on the particular demand and supply elasticities in each product market, but they would likely be large, with estimates of decreased Chinese imports ranging from \$6 billion to \$15 billion annually.

MFN renewal ultimately will promote the goal of improved human rights protection more effectively than revocation would, because increased foreign trade contributes to China's integration with the world economy, economic decentralization, and the growth of a middle class. As the economy has grown and become increasingly decentralized, a new business society has developed that is independent of the state. Further, with greater wealth and access to foreign goods and to modern telecommunications, Chinese citizens are increasingly exposed to a broader set of ideas, undermining the government's monopoly on information. The result is a diffusion of economic power and information, creating the preconditions for a civil society, and with it more pluralistic forms of governance and a greater respect for human rights.

### *Bilateral Issues*

Despite China's economic reforms, a variety of barriers still frustrate U.S. exporters, and lack of enforcement of intellectual property laws costs U.S. firms in the computer software, publishing, and audiovisual industries hundreds of millions of dollars a year. Although China committed itself to protect copyrights, patents, and trademarks for foreign goods in the U.S.-China Bilateral Trade Agreement of 1979, compliance has been a recurrent problem. In May 1991 the U.S. Government launched an investigation under the Special 301 provision of the trade act of 1988. In January 1992 the United States and China signed a memorandum of understanding that committed the Chinese Government to strengthen patent, copyright, and trade secret laws; to provide patent protection for products as well as processes; to join two international conventions on copyrights; and to treat software as a literary work under Chinese law, resulting in protection for 50 years.

Although China subsequently carried out all the institutional and legal changes, enforcement has remained a problem. China continues to be a major producer of pirated compact discs and computer software, often in joint ventures with Taiwanese and Hong Kong partners; the pirated goods are increasingly exported to third markets. In response, negotiations were begun in 1993 to strengthen Chinese enforcement of existing laws, and the United States initiated a second Special 301 investigation in June 1994. In January 1995 the U.S. Trade Representative released a preliminary retaliation list in an attempt to persuade the Chinese to be more forthcoming in the negotiations. China itself would benefit by improving its protection of intellectual property rights. Other countries in the region have significantly strengthened their protection of intellec-

tual property rights in recent years, recognizing that it is an essential step in order to have access to cutting-edge technology and investment from abroad, as well as to encourage innovation at home.

U.S. exporters also encounter a wide array of market access problems. Starting in the mid-1980s, the U.S. Government has held a series of bilateral negotiations to persuade Chinese authorities to reduce the number, secrecy, and severity of administrative barriers to imports, including import licensing requirements, quantitative restrictions, and product testing and certification requirements, as well as to increase the transparency of trade rules.

The United States initiated an investigation under Section 301 in October 1991. The Chinese Government signed a memorandum of understanding in October 1992, following publication of a U.S. retaliation list. Under the agreement China committed itself to dismantle 90 percent of all import restrictions, to eliminate import substitution regulations, to reduce tariffs and eliminate the import regulatory tax, to improve transparency, and to base all phytosanitary and sanitary standards and testing on sound scientific principles. In return, the United States agreed to terminate the Section 301 investigation, to work with China on its accession to the GATT (now the WTO) and to liberalize restrictions on Chinese access to technology. To date, there has been little progress in increasing the transparency of approval processes for import licenses or quotas, or in eliminating restrictions on the imports of agricultural products through sanitary and phytosanitary standards; however, negotiations with China to resolve these issues are continuing.

### *WTO Accession*

China has applied for membership in the WTO, and formal negotiations for accession have been in progress since 1988. The United States has consistently made clear that it wants China to become a member of the WTO, and the Administration is working with China and our other trade partners toward this goal. But the United States and the other WTO members are determined that China must join on commercial, not concessional, terms. This is critical for maintaining the integrity of the global trading system and integrating China into it. Moreover, implementing transparent trade rules and promoting open trade and investment should strengthen China's economy and lock in its economic gains.

Every country that joined the GATT in the past agreed to adhere to basic obligations. These include transparency of the trade regime, uniform application of trade rules, national treatment for goods, and a foreign exchange regime that does not obstruct trade. These basic obligations are the foundation of GATT rules; without them the other disciplines are meaningless. Thus, for instance, there is no point in agreeing on disciplines for trade laws if, as is

currently the case in China, they are not uniformly applied throughout the country. Similarly, there is no point in negotiating market access agreements if, as in China today, the trade rules are not transparent.

Although U.S. relations with Japan and China are both very important, they are only part of a large number of bilateral trade relationships. Market-opening negotiations and, on occasion, trade disputes are a normal and continuing part of U.S. trade policy. This Administration has put strong emphasis on opening markets for U.S. exports. But its bilateral negotiations are only part of a broader strategy to promote U.S. exports.

## THE NATIONAL EXPORT STRATEGY

The Administration has focused on encouraging American exports by eliminating U.S. export barriers and by improving the efficiency of U.S. export promotion efforts. The Administration's Trade Promotion Coordinating Committee unveiled the National Export Strategy in September 1993. Since then the Administration has succeeded in meeting the goals it had set out: removing obstacles to exporting, improving trade finance, supporting U.S. bidders in global competition, helping small and medium-sized U.S. firms enter export markets, and promoting U.S. exports of environmental technologies and services.

The Administration has implemented almost all of the 65 objectives laid out in the 1993 National Export Strategy report:

- Unnecessary export controls have been eliminated for computers, affecting \$30 billion worth of exports. Most authorization requirements for the export of telecommunications equipment have been eliminated.
- The value of exports requiring licenses has fallen to one-third its previous level, and the licensing process has been streamlined.
- Trade finance has been buttressed by increasing the limit on project finance through the Overseas Private Investment Corporation from \$50 million to \$200 million. Coordination with State and local sources of trade finance has improved, and partnerships with the private sector are being encouraged.
- Export assistance centers have been opened throughout the country, providing "one-stop shopping" for small businesses seeking Federal export information and financing assistance.
- The Administration has countered the advocacy efforts of foreign governments with efforts of its own on behalf of U.S. exporters, helping U.S. firms compete and win over 90 major contracts worth a total of \$20 billion. These contracts include a multi-billion-dollar Saudi Arabian telecommunications procurement, power and energy projects throughout Asia, and a

project to build an environmental surveillance and air traffic control system in Brazil.

Efforts have also been made to discourage and counter the “tied aid” practices of other nations: concessional loans or grants that are only available to recipient governments if they procure equipment produced by the donor country’s firms. Worldwide, the proportion of aid that is tied has decreased dramatically since 1992—the result of new tied aid guidelines adopted through the Organization for Economic Cooperation and Development (OECD, whose membership includes the major donor countries), and of the U.S. Government’s subsequent aggressive enforcement of these guidelines. These guidelines make many new aid projects ineligible for tied aid financing and therefore open to international market competition.

Further, the National Export Strategy has focused on new opportunities in the economies expected to grow especially quickly in the coming years. These “big emerging markets” include China, Taiwan, Hong Kong, Korea, Indonesia, India, Mexico, Argentina, Brazil, Poland, Turkey, and South Africa.

A year ago the Administration set the goal of raising total U.S. exports to \$1 trillion by 2000. The success of this past year has led the Administration to raise this goal to \$1.2 trillion, which would represent almost a doubling of the 1993 export level.

## NEW ISSUES IN TRADE NEGOTIATIONS

Since the mid-1980s, when the blueprint for the Uruguay Round negotiations was determined, a series of new trade issues have arisen that will occupy negotiators for the next several years. While these issues—trade and the environment, competition policy, rules on investment, and trade and labor standards—have already made a limited appearance in multilateral discussion, they have played a greater role in recent plurilateral and bilateral negotiations. Progress achieved in those negotiations will likely have a significant influence on future negotiations at the multilateral, plurilateral, and bilateral levels.

### TRADE AND THE ENVIRONMENT

Protection of the environment and an open trading system are sometimes seen as conflicting goals. Many environmentalists are concerned that free trade will come at the expense of the environment, and many free traders are concerned that efforts to incorporate environmental concerns into the international trading system will degenerate into disguised protectionism. However, there is no inherent conflict between liberalizing trade and protecting the environment, and the Administration has focused on potential

complementarities between good trade policies and sound environmental policies.

In fact, free trade and environmentalism have much in common. In both cases the benefits from achieving progress are spread across a wide group of people, while the interests that are harmed are more concentrated. Trade liberalization benefits consumers (and workers producing exports) but may harm workers in import-competing sectors. Similarly, environmental protection benefits a diffuse group of people, while the cost is concentrated on a smaller group, those overusing environmental resources. Thus, while the gains from liberalized trade and a cleaner environment outweigh the losses in the aggregate, it still can be difficult to achieve progress, since the costs of the action are concentrated on a small group who vociferously oppose action, while the benefits may be so diffuse as to make it difficult to mobilize potential supporters.

Moreover, both trade liberalization and international environmental issues require the use of multilateral tools. Without such tools there is a tendency for countries to engage in damaging environmental and trade policies designed to further their own interests at the expense of their neighbors. Multilateralism can ensure that progress is made on enough fronts so that all countries gain from trade and a protected environment. The GATT and its successor the WTO are well suited for tackling world trade issues. But there is as yet no analogous forum for comprehensively addressing global environmental issues. Instead there are a variety of international agreements and organizations committed to working on environmental problems.

There are also complementarities between good trade policies and good environmental policies. Agricultural protection in industrialized countries is a case in point. The protection of developed-country agriculture leads to more intensive farming, often of lands that are of marginal use, causing unnecessary soil erosion, loss of biological diversity, and the excessive use of pesticides and chemicals. Liberalizing trade in agriculture and lowering agriculture production subsidies can lead to a pattern of world farming that causes less environmental damage.

Also, high trade barriers to labor-intensive imports, such as clothing, from developing countries lead these countries instead to export products that are intensive in natural resources, causing environmental damage. In addition, high-value-added natural resource-based products such as wood or paper products often face high tariff barriers, whereas the raw natural resource itself does not; this forces developing countries to rely on exports of unprocessed natural resources while denying them the revenue gains from the downstream products.

Just as trade policy improvements have the potential to help the environment, environmental policy improvements can lead to economic gains. For instance, making polluters pay for the cost of the environmental resources they use encourages efficient resource allocation and undistorted world trade. The elimination of government underpricing of public natural resources can also reduce trade distortions.

Empirical evidence on the relationship between trade and the environment reinforces the notion that the two are not in conflict. For instance, trade liberalization may act to increase income levels through more-efficient resource allocation. In fact, the evidence suggests that openness to world trade is one of the strongest predictors of rapid income growth in less developed countries. Income growth in turn has beneficial effects on the environment. One study suggests that, as a country's income per capita rises beyond a point around \$5,000, its environmental record improves. As people can afford to, they devote more resources to environmental protection, and political pressures for environmental protection increase.

Most evidence suggests that international differences in environmental compliance costs have not had a significant impact on trade and investment flows, primarily because these costs are almost always a very small fraction of value added in production. In the United States, for example, pollution abatement costs in over 93 percent of all industries are less than 2 percent of value added. Such small differences are unlikely to cause firms to migrate to take advantage of differential costs of environmental regulation; other considerations are far more important.

It is important to put aside the notion that trade itself is the cause of environmental degradation. Although economic activity certainly may diminish environmental resources, international trade, like trade among the States, is simply a means of making economic activity more efficient. The above examples and the available empirical evidence suggest that trade *itself* need not pose a particular threat to the environment. By the same token, most often the best response to an environmental problem is not to restrict trade. Instead, policies aimed *directly* at an environmental problem are likely to be more effective. For instance, if the use of a particular input in a firm's production is causing pollution, it is most effective to address the use of the input itself, rather than limit trade in the resulting product.

NAFTA demonstrates how trade liberalization can serve as an impetus for improved environmental policies. NAFTA specifically ensures its members' right to safeguard the environment, and it encourages all the NAFTA parties to strengthen their environmental efforts. NAFTA maintains all existing U.S. health, safety,

and environmental standards. It allows States and cities to enact even tougher standards, while providing mechanisms to encourage all parties to harmonize their standards upward. The NAFTA side agreement on the environment created a new North American Commission on Environmental Cooperation, with a council made up of the three countries' top environmental officials. There is a mechanism to ensure that countries effectively enforce their own environmental laws, and a provision that guarantees public participation in monitoring of environmental laws. Finally, two new institutions have been established to fund and implement environmental infrastructure projects along the U.S.-Mexican border. The North American Development Bank (NADBank) will make loans for environmental cleanup and community adjustment on both sides of the U.S.-Mexican border. The NADBank will work closely with the new U.S.-Mexican Border Environment Cooperation Commission, which will review and certify proposals for environmental infrastructure projects.

NAFTA shows that it is possible to use trade concessions as a carrot to encourage environmental improvements, rather than using trade penalties as a stick to punish poor environmental behavior. Without NAFTA it is unlikely that there would have been an incentive for the member countries to strengthen their commitments to environmental cooperation. NAFTA also sets an example for other trade agreements in the use of international mechanisms and national commitments to ensure that free trade is compatible with enhanced environmental protection and sustainable development.

Environmental concerns were also addressed in the most recent Uruguay Round negotiations. The preamble of the agreement establishing the WTO recognizes the importance of environmental concerns. This is the first time that a broad multilateral trade agreement has recognized sustainable development as a guiding principle. The WTO negotiators have agreed to establish a full WTO Committee on Trade and the Environment to ensure the responsiveness of the multilateral trading system to environmental objectives. Issues this committee will tackle include, first, whether countries may use their trade policies in a way that discriminates between like products on the basis of the processes and production methods used; second, the relationship of the GATT to international environmental agreements; third, the circumstances under which countries may use trade measures to protect the environment; and fourth, the scope of the exceptions for environmental measures provided by the GATT under Article XX, which covers measures necessary to protect human, animal, and plant life.

## COMPETITION POLICY AND TRADE

The relationship between national competition policies and international trade has emerged as an important issue for future negotiations. Historically, concern with international cartels has motivated discussions of competition and trade policy; the current revival of interest, however, is driven primarily by questions of market access. As tariffs and other formal trade measures have fallen, domestic barriers to competition have come under increasing scrutiny. Barriers to foreign entry can arise for numerous reasons. Government procurement practices, either through explicit "buy national" policies or through carefully drawn or nontransparent product specifications, can favor domestic over foreign producers. Health and safety standards, inspection procedures, and other product regulations can also operate as protectionist barriers. These areas have already been subject to extensive negotiation, and agreements were concluded in the last two GATT negotiating rounds that require transparency and nondiscrimination in procurement and product standards.

The most intense interest, however, now falls on barriers that can arise from the practices of private firms. These are often vertical restraints—control over distribution channels, exclusive sales arrangements or refusals to deal, rebates on sales—that impede new entrants. These barriers may also derive from close affiliations among firms within corporate groups that effectively limit sales by outsiders. Vertical and other private restraints on trade have been the subject of negotiations between the United States and Japan in the SII and the Framework negotiations (discussed above). Since GATT rules do not cover restrictive practices by private parties, except as they are supported by government measures, there is particular interest in the role of national competition policy authorities in fostering market access in these cases.

The second area of concern about anticompetitive business practices is the advantages they might create for sales in other markets. If industries are characterized by economies of scale or learning effects (in which production efficiency rises as cumulative output grows), greater output or longer production runs resulting from limited imports could confer a cost advantage on domestic producers. Restrictions on competition at home may also change the character of global competition among oligopolistic firms. When restrictions are successful in creating monopoly power at home (a less price-elastic home than foreign demand), sales in foreign markets at a lower price than at home (dumping) are a predictable result. Alternatively, collusion among domestic producers in the home market to maintain prices in the face of declining demand, perhaps under the auspices of an officially sponsored recession cartel, can

result in venting of surplus production in foreign markets, increasing the instability and operating risks in markets that are open.

Although there is increasing overlap between trade and competition policies, there has been little coordination of international trade policy with antitrust policy. In large part this is because the practices that trade and competition policy deal with are distinct. International trade negotiations under the GATT have dealt with government actions that restrict trade or discriminate against foreign goods. Private practices that discourage imports have been beyond the GATT's reach, except to the extent that government measures support or are necessary to sustain those restraints. Antitrust policies, in contrast, can be effective in dealing with the actions of private parties. However, antitrust laws in some countries do not cover government-owned firms, and antitrust laws seldom apply to other governmental activities.

The extension of international trade disciplines in the GATT has clearly increased competition. As trade barriers have dropped, the extent of effective competition in domestic traded-goods industries has risen. Indeed, Justice Department guidelines now take the extent of international competition explicitly into account, as do the agencies in charge of competition policy in other nations.

However, the extent to which existing competition policy can be harnessed to increase trade liberalization is less clear-cut. Many of the private barriers to entry fall in the area of nonprice vertical restraints to trade, where there is appropriately no presumption of illegality. In many instances vertical restraints, such as exclusive dealing arrangements or ownership interests in distributors, can increase efficiency and ensure product and service quality, even as they act as barriers to new entry. Competition, and not entry opportunities for individual firms, is protected under U.S. antitrust law, and in the absence of evidence of restraints on competition in the domestic market it may be difficult to win a case on the grounds that a new firm cannot gain entry.

One area in which competition policy may have beneficial results is antidumping policy, the most prominent of U.S. policies against unfair trade. In the United States, duties are assessed on imports sold at "less than fair value," in other words, at a price that is either less than the price at which the good is sold in the home market, less than the sales price in a third-country market, or less than the calculated cost of production. If dumping is found, and if the dumped goods are determined to cause injury to the domestic industry, duties are assessed to bring the price of the goods up to "fair value."

There are two rationales for antidumping laws. The first is that the sale of imported goods at less than fair value may be part of a strategy of predatory pricing, designed to force American com-

petitors out of business. The second rationale, and one that directly addresses why only foreign firms are subject to antidumping procedures, is that dumping arises from an asymmetry in competitive conditions between the home market of the dumping firm and the market in which goods are sold. Restricted competition in the dumper's home market creates a situation in which dumping is profitable, creates opportunities for the dumping firm that are not available to firms based in the more competitive market in which goods are dumped, and is therefore seen as unfair. Recent advances in trade theory suggest that such advantages may be possible, depending on the competitive characteristics of the industry.

The value of a competition policy approach is that it may allow a more careful distinction between pricing practices that are unfair and those that simply reflect normal cyclical and market variations. A well-developed body of antitrust law exists to deal with predatory pricing. The courts consider such factors as the size and strength of rivals, the ease of entry in the industry, whether the pricing practices are likely to force firms out of business, and whether the alleged predator could eventually recover its losses from its current low price. Foreign firms selling in the U.S. market are subject to U.S. antitrust law, and the Justice Department and the Federal Trade Commission have brought cases against foreign firms that affect U.S. competition. Competition policy addresses not only predation but also other unfair trade practices, such as vertical restraints, and seeks to avoid the conditions that enable firms to engage in unfair practices.

Ideally, the problem of competitive asymmetry could be addressed by policies that increase competition in the home market of the dumping firm. The progressive reduction of trade barriers, the negotiated elimination of other market access barriers, and the interpenetration of major markets by foreign direct investment all tend to both increase and equalize the competitive environment across markets. Indeed, within some regional groupings where integration has proceeded sufficiently, such as the European Union and the Closer Economic Relations arrangement between Australia and New Zealand, competition policy has entirely replaced dumping review as a means to control unfair trade practices, just as within a single national economy.

Efforts on competition policy and trade will take place on a variety of fronts. Differences in antitrust philosophy and accumulated case law across major countries make harmonization of competition policies unlikely in the foreseeable future, except in closely integrated regional groups. But the global character of most markets has been the impetus for increasing consultation and cooperation among competition policy agencies, and this is likely to lead to some convergence in practice and approach. There is also likely to

be increased cooperation in cases that span international boundaries, such as a recent case involving the leading U.S. software producer. As this cooperation increases, one possible step would be an agreement to remove the antitrust exemptions for market division and price fixing by exporters; these exemptions are contained in various national laws including the Webb-Pomerene Act and the Export Trading Company Act of 1982 in the United States and the Export Trade Act of 1952 in Japan. In addition, to facilitate future cooperation, the United States is preparing to negotiate antitrust mutual assistance agreements. These agreements would provide a framework for joint prosecution of international cartels and for effective case-by-case assistance.

Trade negotiations, from the bilateral to the multilateral level, will continue to focus on market access issues, and thus inevitably deal with entry barriers and competition policy. The approach so far has been piecemeal, barrier by barrier and sector by sector; this is particularly evident in services negotiations, but also true of recent U.S.-Japan bilateral negotiations. The key to faster progress will be whether general principles that cut across sectors can be formulated. For example, these might deal with the definition of national treatment in markets where entry is by individual license, or the access of foreign firms to private industry associations that have a regulatory role or provide services necessary for participation in the domestic market.

## INVESTMENT

Increasing emphasis on market access will push investment issues to the fore of future trade negotiations, just as it has elevated competition policy issues. This is particularly true of trade in services, where delivery often depends on having a physical presence in the market where the services are sold. But such presence is also crucial for many manufactured goods, where design must be tailored to market requirements, where service and reputation are important, or where fast response is key.

Thus, whereas foreign direct investment was once seen as a substitute for international trade, it is increasingly viewed as a complement or even a necessary component of trade. The evidence on U.S. outward foreign direct investment bears this out. Roughly 60 percent of U.S. exports are sold by American firms that have operations abroad. The evidence also indicates that the countries where U.S. exports are most successful are the same countries where U.S. firms have the largest investments, and where investment restrictions are lowest. Furthermore, nearly \$1 of every \$5 in sales by U.S. companies abroad is earned by American sales affiliates or wholesaling companies that have established local facilities to sell U.S. exports. Access to foreign markets is the strongest motivation

for investing overseas, not lower production costs. Only about 8 percent of the production of U.S. companies abroad is exported back to the United States; the vast majority is sold abroad in the local market.

The investment issue is a clear example of the progress that can be achieved when negotiations are limited to a small group of nations. The investment rules in NAFTA contain most of what is desired in an investment accord, including guarantees on right of establishment, national treatment for foreign investors once established, freedom to repatriate earnings, and transparency in the rules governing foreign investment. The Administration is encouraging similar liberalization in its regional efforts in Latin America and Asia. These principles have also been advanced in U.S. bilateral investment treaties; 12 comprehensive treaties have been signed since 1993, including treaties with the former Soviet republics of Georgia, Ukraine, and Belarus.

Progress in regional and bilateral negotiations should spur multilateral agreements on investment issues. Last September the Administration called for a June 1995 launch of negotiations in the OECD to establish a multilateral investment accord. This agreement would go beyond bilateral investment treaties and existing OECD undertakings, and would require the removal of existing barriers to investment in all OECD countries.

## TRADE AND LABOR STANDARDS

The international promotion of labor standards is an important goal of this Administration. The Administration negotiated an innovative NAFTA side agreement on labor standards, and it pressed for and got agreement to include discussion of the relationship between workers' rights and international trade in the meetings of the Preparatory Committee of the WTO. In the Uruguay Round implementing legislation, the Congress directed the President to seek a working party on labor standards within the WTO.

The labor side agreement to NAFTA, the North American Agreement on Labor Cooperation, provides a mechanism for the three NAFTA partners to address interactions between national labor standards in an environment of expanded trade and investment. The agreement commits each country to promote a set of guiding principles subject to its domestic law, but does not establish common minimum standards. The principles include freedom of association and the rights to organize and bargain collectively, as well as prohibitions on forced labor and restrictions on child labor. The agreement emphasizes a cooperative program aimed at improving labor standards in all three countries through technical assistance and the exchange of information. It also contains mechanisms to encourage the enforcement of national labor laws in the three coun-

tries and provisions to make the laws more transparent. Enforcement mechanisms include public channels of communication, exchanges of information, and consultations at a variety of levels. If a conflict arises between countries over a persistent pattern of failure to enforce national occupational safety and health, child labor, minimum wage laws, or technical labor standards, in circumstances that are related to trade, the agreement provides for binding arbitration and assessment of penalties.

The promotion of labor standards has a long history in international diplomacy and U.S. policy. The International Labor Organization (ILO) was established shortly after the First World War to promote agreement on labor standards and to monitor progress in achieving them. The United States tried, unsuccessfully, to add a labor article to the GATT in 1953, and tried to incorporate these issues in the Tokyo Round and the Uruguay Round negotiations. Adherence to labor standards is also a condition for country participation in the Caribbean Basin Initiative and the U.S. Generalized System of Preferences, and for eligibility for Overseas Private Investment Corporation insurance. Furthermore, since 1988, denial of workers' rights has been defined as an unfair trade practice in Section 301 of the Trade Act of 1974 and may be subject to action if it harms U.S. economic interests.

Although there is no fixed definition of core labor standards, widely accepted standards reflected in ILO Conventions and U.S. trade law include freedom of association, the right to organize and bargain collectively, freedom from forced labor, and a minimum age for the employment of children. Core labor standards represent fundamental human and democratic rights in the workplace, rights that should prevail in all societies whatever their level of development. They are also necessary to ensure that individuals have the freedom and the information necessary to make their own choices about occupations, earnings, and working conditions. The observance of labor standards can strengthen work force productivity as a whole by raising health and worker morale, and raise the general educational level by keeping children in school. In the absence of such standards, firms may find it difficult to respect workers' rights on their own.

A related concern is that countries could, by routinely abusing workers' rights, lower labor costs so as to gain an unfair advantage in international trade. This would certainly be the case if a particular foreign industry obtained the advantages of a labor force whose rights were not guaranteed—for example, because it had access to a conscript labor force. Whether foreign industries can reap the advantages of abuse of labor rights when such abuse pervades an entire economy is less certain. It is possible to artificially depress labor costs in the short run, but over longer periods of time any ad-

vantage gained by the overall abuse of labor standards may be minimal or nonexistent.

The Administration is committed to a multilateral process designed to build consensus and encourage adoption of core labor standards. There is widespread agreement, for instance, that standards should be appropriate to a country's level of development. The ability to compensate workers is limited by overall productivity (output per worker) in the economy, and that compensation may be paid in some combination of wages and better workplace characteristics, in proportions that may vary across societies. The Administration's goals are to achieve broad support for trade at home and abroad by ensuring that the benefits of trade are widely shared by those engaged in the production of internationally traded goods and services, and ultimately to raise living standards worldwide.

## DOMESTIC POLICY AND TRADE POLICY

International trade has been and will remain a powerful source of growth, opportunity, and challenge for the American economy. The Yankee trader and the clipper ship were trademarks of this country early in its development, and today the United States remains the world's largest exporter and importer. Recognition of the gains from liberalizing trade go back to our beginnings as a Nation, and recent changes in the nature of goods and services trade, together with advances in theoretical understanding, have served to strengthen this conclusion (Box 6-4).

However, few things bring only benefits, and structural adjustment and change are the essence of a dynamic economy. The most potent force in the modern economy has been technological change, which can result in painful adjustments for firms, workers, and communities, even as it raises overall living standards over time. The mechanization of agriculture, the replacement of mechanical technology with electronics (in cash registers, adding machines, typewriters, and aircraft), and the growth of large retail stores all displaced workers. Recent technological change associated in part with increasing computerization is likely to have increased the demand for skilled workers across a broad range of industries, leading to a rise in the wages of skilled relative to unskilled labor (an issue discussed in Chapter 5).

Trade adds to the opportunities and dynamism of the economy, and to the adjustments required over time. Attempts to estimate the relative importance of international trade in economic restructuring have assigned a much larger role to technological change and other factors, but international trade competition has surely played a part, as discussed in Chapter 5. When import competition

#### **Box 6-4.—The Gains from International Trade**

By allowing each country to specialize in the production of the goods and services in which it is most efficient, trade raises the value of production and welfare in all trading countries. However, the gains from international trade go well beyond this basic tenet of comparative advantage. In industries where there are increasing returns to scale, international trade creates a larger market and lower unit costs, further raising the total output that can be produced. An integrated world market also allows technological development and production startup costs to be spread over a larger number of units.

But the largest gains from international trade may come from the competition that international markets provide. When competition is imperfect, the opening of markets to trade dilutes monopoly rents, lowering prices and raising output and welfare. International trade introduces new technologies (Box 3-7 in Chapter 3), spurs domestic producers to raise product quality, increases the range of goods available to consumers, and lowers product prices. A recent cross-country study of productivity at the firm level suggests that achieving and maintaining high productivity requires that companies compete directly against the best firms in the global economy, and evidence shows that, along with rates of aggregate saving and investment, openness to international trade is a significant determinant of faster growth. This is the reason why more and more developing countries have unilaterally lowered their trade barriers, and the search for higher growth was the primary motive for the Single Market Program of the European Union.

increases, there are pressures for protection to slow or halt the fall in production and employment in the affected industry. Indeed, many of the trade barriers in the United States and other developed countries arose to protect output in industries where employment was declining.

Raising or maintaining import barriers imposes costs on the rest of the economy through higher prices. Estimates place the total costs to consumers of U.S. tariff and nontariff barriers as high as \$70 billion per year. Since protection often is applied to “cheap goods” or to consumer staples such as clothing and food products, these costs fall most heavily on the poor. The costs extend beyond consumers, to higher costs for other industries that use the protected products as inputs. Furthermore, one cannot reduce imports while leaving exports unchanged; overall levels of exports and imports are linked through the macroeconomic balance between na-

tional saving and investment and through the exchange rate. Thus, reducing imports would ultimately slow the growth of U.S. exports, upon which the jobs of over 10 million Americans now depend.

In addition to its high cost, trade protection is far from a solution to industrial adjustment. In most protected industries adjustment pressures arise from changing technologies and demand, and import protection has been able to slow employment declines only marginally. Estimated costs per job saved through protection run very high; one study put the average consumer cost per job maintained at \$170,000, which is six times the earnings of the average U.S. worker.

The President's policy to "compete, not retreat" rests on the recognition that a dynamic economy, with its associated opportunities and despite its hardships, provides the best prospects for increasing incomes for Americans over time. The Administration has chosen to continue to press for further trade liberalization in order to open up foreign markets for U.S. exports, while at the same time vigorously promoting U.S. commercial interests abroad. But the commitment to embrace change requires a commitment to assist individuals when they are hurt by it. In other words, sound domestic policy is a necessary concomitant of sound international trade policy and reinforces the case for liberalization. Thus the Administration has advocated income support for those who lose their jobs due to trade displacement, as in the NAFTA Transitional Adjustment Assistance program, and has advocated greater investment in human capital, through programs of training and retraining, both to ease adjustment and to raise the incomes of Americans.

## CONCLUSION

While recognizing the difficult adjustments that international trade may bring about, one should not lose sight of the significant gains that this country has reaped from its engagement in international markets. Since 1987, U.S. exports have grown at a rate of almost 10 percent per year in real terms, well outstripping export growth in Japan and the European Union, and reversing the decline in the U.S. share of world exports that occurred earlier in the 1980s. Export growth has been responsible for about one-third of total output growth since 1990, and it made the most recent recession considerably less severe than it otherwise would have been. As detailed in Chapter 2, export growth was a significant component in the strong performance of the American economy in 1994. Growth of exports has also been an important contributor in moving Americans toward higher paying jobs. The accompanying rise in U.S. imports has also been beneficial, providing consumers with more choices and raising the purchasing power of American in-

comes. Competition from abroad has made U.S. firms more efficient, more quality-conscious, and, in the end, more competitive.

The United States will continue to reap large gains from international trade. In the near term, recoveries in Europe and Japan will boost U.S. exports and help narrow this country's trade deficit. The longer term trends are also quite favorable for the United States. The positive changes in economic policy in many developing and transition economies will lead to faster growth and a sharp rise in their imports of capital goods, a sector in which U.S. competitiveness is very high. Both multilateral and plurilateral trade agreements have led to much larger reductions in the trade barriers of our partner countries than in our own already low barriers, and this will continue as APEC and the Western Hemisphere move toward free trade. The new areas that have recently been suggested for international negotiations—agriculture, services, intellectual property, competition policy—are all areas where the competitive balance is strongly in the United States' favor. Finally, strengthening of the underlying rules and the international dispute settlement system will lead to a convergence toward a rules-based, transparent, and nondiscriminatory world trading system, much like the one the United States already has. The balance of concessions and prospective gains from this convergence are greatly to our advantage.

This Administration will continue to pursue a more open world trading system, through multilateral, plurilateral, and bilateral trade negotiations. These negotiations will seek to lower barriers to trade in conventional sectors and to extend market liberalization to newer sectors and issues. Although we negotiate on a variety of levels, the basic goal is always the same: the advancement of open markets on a nondiscriminatory basis. This goal has characterized our bilateral negotiations, which have sought open markets, not special entry for American firms. In plurilateral negotiations we have emphasized the principle of openness to new entrants. The United States also has a strong interest in strengthening the underlying rules of the trading system and the dispute settlement process, both because to do so fosters more efficient and fairer trade, and because it results in the kind of system in which American firms most comfortably operate and compete.