THE ANNUAL REPORT
OF THE
COUNCIL OF ECONOMIC ADVISERS

LETTER OF TRANSMITTAL

COUNCIL OF ECONOMIC ADVISERS,
Washington, D.C., February 1, 1990.

MR. PRESIDENT:

The Council of Economic Advisers herewith submits its 1990 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,

Michael J. Boskin
Chairman

Richard L. Schmalensee
Member

John B. Taylor
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CHAPTER 1

Building on Success

IN 1989, THE U.S. ECONOMY marked its seventh consecutive year of economic growth, the longest peacetime expansion on record and the second longest expansion in U.S. history. The American economy has created more than 20 million new jobs since 1982. The average unemployment rate in 1989 was at its lowest level since 1973 and was lower than in any major European country. America's standard of living, as measured by per capita income, is the highest of any major industrialized country in the world, fully one-third higher than that of West Germany or Japan. In 1989, exports reached an all-time high, and the United States once again became the world's leading exporter. Moreover, unlike any other expansion since World War II, inflation has been contained, laying a solid foundation for continued strong growth in the 1990s.

The successes of the 1980s stand in sharp contrast to economic performance in the 1970s, when inflation soared and unemployment simultaneously increased. In that earlier decade, tax rates climbed for a growing segment of the population. Productivity growth collapsed. Government interference in private markets escalated. The result was an inefficient economy and stagnant living standards.

America's economic successes in the 1980s also stand in sharp contrast to the poor performance of countries that had severely restricted economic and political freedom. Indeed, this contrast, along with U.S. support for democracy in the 1980s, helped to spur the most historically significant events of 1989—the revolutionary transformation of the countries of Eastern Europe. Along with the rapid adoption of democratic principles has come a recognition that economic freedom is also essential to raising the quality of life. By the end of the year, bold economic reform programs were being developed to turn away from central planning and government ownership toward free markets and private ownership. It is significant that as the United States marked the seventh year of its economic expansion last November, the President signed legislation providing for U.S. support for economic reforms in Eastern Europe.

The Nation now has an opportunity to build on its recent economic successes. It can address problems from the past and con-

front current and likely future challenges. The Nation must save and invest a larger share of its income. The performance of U.S. elementary and secondary schools must be dramatically improved. Employment and housing opportunities available to disadvantaged Americans must be expanded. The quality of the Nation's environment must be preserved and enhanced. And at this crucial moment in history, U.S. support for democracy and market reform movements around the world cannot diminish. The success of these market reforms will be a significant determinant of political freedom and economic progress throughout the world in the 21st century.

Strong sustained economic growth is the key to providing rising real incomes and resources for the needs, desires, and aspirations of the American people. Sustained economic growth will also provide employment opportunities for American families and offer people the dignity and self-respect that come with participating fully in the economy.

Therefore, the Administration's primary economic goal for the 1990s is to achieve the highest possible rate of sustainable economic growth. Government policy must enhance the economy's potential for growth and ensure that its potential is more often fully utilized than in previous decades. Keeping inflation in check is essential to achieve this goal. In designing policies to meet this goal, it is important to be ambitious but realistic. Setting the Nation's sights too low guarantees mediocre performance. Setting hopelessly unrealistic goals guarantees disappointment.

Economic research and the policy experiences of the 1970s and 1980s have led to an improved understanding of the appropriate role for the Federal Government in achieving the Nation's goals. In general, government's role should be modest, with limited, targeted, and cost-effective policies aimed at augmenting the economic power of the private sector. The Federal Government's monetary and fiscal policies should be systematic and credible and should focus on the long run. The demonstrated success of free markets has brought a new appreciation of the power of economic incentives and has encouraged efforts to maintain maximum flexibility in markets. An increasingly integrated global economy has demonstrated the simple truth that a freer and more open trading system stimulates worldwide economic growth and rising living standards.

The Administration's economic policy principles are designed to achieve the maximum sustainable rate of economic growth, both by enhancing the economy's ability to grow and by ensuring that its potential is more fully utilized than in previous decades. The principles are as follows:

- Reduce government borrowing by slowing the growth of Federal spending while economic growth raises revenue until the budget is balanced, and reduce the national debt thereafter;

- Support a credible, systematic monetary policy program that sustains maximum economic growth while controlling and reducing inflation;
- Remove barriers to innovation, investment, work, and saving in the tax, legal, and regulatory systems;
- Avoid unnecessary regulation and design necessary regulatory programs to harness market forces effectively to serve the Nation's interest; and
- Continue to lead the world to freer trade and more open markets and to support market-oriented reforms around the world.

Specific programs and proposals to implement these policy principles in the evolving economy of the 1990s are summarized in the balance of this chapter and discussed in detail in the remainder of this *Report*.

THE CURRENT EXPANSION AND FUTURE PROSPECTS

The economy's performance during 1989 has set the stage for a continuation of the expansion into the 1990s. Adjusting for the rebound in farm production from the 1988 drought, real (inflation-adjusted) gross national product (GNP) rose 1.9 percent during the year, well below the strong pace of 1987 and 1988. Significantly, pressures for increased inflation evident in 1988 were contained. The broadest measure of economy-wide inflation, the GNP fixed-weighted price index, rose by 4.1 percent during 1989, down from 4.5 percent in 1988 and about the same as in 1987.

Continued growth in employment and income in 1989 provided new economic opportunities. A substantially better balance between domestic spending and domestic production was achieved. Growth in government purchases slowed, while net exports and business investment grew more rapidly. Both government and household saving rates rose. These patterns have provided a foundation for sustained strong economic growth.

The Administration's outlook is contingent on implementation of the President's proposals to reduce the Federal budget deficit steadily to zero by fiscal 1993 and to reduce the national debt thereafter. It is also contingent on the Federal Reserve maintaining a credible monetary policy program to support strong noninflationary growth. With these policies, the Administration projects that the U.S. economy will enjoy sustained growth in 1990 at a slightly faster pace than in 1989. Real growth is expected to pick up in the second half of 1990 relative to the first half. In 1991, the economy's growth rate is expected to increase further, as the level of output rises to its full potential; the growth rate is then anticipated to return gradually to its longer run expected potential

pace of about 3 percent. Inflation is anticipated to remain close to its 1989 rate in 1990, and then to decline gradually in later years.

The remarkable length of the current expansion, by itself, does not increase the likelihood of an imminent recession. To be sure, occasional episodes of economic contraction will occur in the future. Adverse external events cannot be ruled out, even in the near term. But with the right economic policies in place, expansions in the future can be longer than expansions in the past. The success in containing inflation in this expansion offers an important protection against future recessions. Since World War II, sharp increases in inflation have usually caused policy responses or private-sector imbalances that have led to a recession.

MACROECONOMIC POLICY

Economic research and the lessons of the past two decades suggest a macroeconomic strategy for meeting the challenges of the 1990s and beyond. If fiscal and monetary policies are systematic and credible, rather than characterized by the frequent exercise of short-sighted discretion, strong sustainable noninflationary growth can be achieved.

Popular accounts of economic ideas typically focus on controversies and areas of disagreement. This focus is particularly common in discussions of macroeconomics, where monetarists, supply-siders, Keynesians, new classical macroeconomists, and others are often paired off against each other. While such controversies exist and have been important in the development of economic thinking, they mask two key areas of consensus concerning macroeconomic policy.

First, agreement is now widespread on the detrimental effects of a short-sighted discretionary approach to macroeconomic policy that attempts neither to lay out policy plans nor to maintain a commitment to such plans. Because policymakers are regularly praised and criticized for short-run developments, they experience pressures to approach economic policy from a short-run viewpoint. Stating a plan or program as clearly as possible tends to counteract such pressures.

Second, research and experience have demonstrated the great advantages of establishing a credible commitment to a policy plan. Improved credibility, which is enhanced by achieving stated policy goals and consistently following stated policy principles, can favorably affect expectations. It can help resolve the uncertainty that arises when changes in the structure of the economy complicate the interpretation of policy actions. It also enables households and businesses to plan for the future, thereby promoting saving, investment, and economic growth.

FISCAL POLICY

The Administration's commitment to the principles of the Gramm-Rudman-Hollings law, clearly demonstrated by the President's actions last fall, constitutes an important step toward a credible and systematic fiscal policy. Moreover, the Administration supports the principle that any supplemental spending increase in the current fiscal year must be offset by decreases in other parts of the budget.

The Administration has proposed *a new rule for fiscal policy* that would extend the Gramm-Rudman-Hollings law by requiring the Federal Government to maintain a balanced non-Social Security budget after 1993. The projected future surpluses in Social Security could not be spent for other purposes but would be devoted to building reserves through a proposed Social Security Integrity and Debt Reduction Fund. This rule would reduce the national debt, free up substantial funds for private capital formation, and increase economic growth. Higher growth would not only protect the integrity of Social Security by increasing the resources available to cope with the retirement of the baby-boom generation, but would also raise national output to meet other private and public needs and wants.

The Administration remains committed to the principles of low marginal tax rates and a broad tax base developed in the Economic Recovery Tax Act of 1981 and the Tax Reform Act of 1986. Steady adherence to these principles reduces tax-induced distortions of private incentives and increases the economy's growth potential.

MONETARY POLICY

Monetary policy should be designed and credibly committed to sustaining strong economic growth and macroeconomic stability while predictably controlling inflation. Changes in the relationship between the monetary aggregates and the economy have made it difficult to be precise or mechanical in designing monetary policy.

Nevertheless, it is important both to state clearly the basic intentions of monetary policy and to recognize the long-run significance of the monetary aggregates as an anchor for price stability. The Federal Reserve generally increases interest rates when inflationary pressures appear to be rising and lowers interest rates when inflationary pressures are abating and recession appears to be more of a threat. Judgment about such factors as inflationary expectations is of course required to determine the degree of inflationary pressures and the size of the appropriate interest rate response. But, the demonstrated consistency of the Federal Reserve's behavior is evolving into a monetary policy procedure with a considerable degree of credibility. That credibility has been enhanced by the strong record of achievement built in the 1980s. The Administration firmly supports the Federal Reserve's goal of strong non-

inflationary growth and believes that continued vigilance in controlling inflation is necessary.

INTERNATIONAL MACROECONOMIC ISSUES

Greater international trade and financial flows have fueled economic growth, both in the United States and abroad. This increased integration of the world economy has significant implications for macroeconomic policies. Both monetary and fiscal policies in the United States have fundamental effects on exchange rates and trade flows. These policies also affect the economic performance of other economies, although to a lesser extent than the U.S. economy itself.

The first priority of U.S. macroeconomic policy should be to maintain an environment conducive to strong noninflationary growth of the domestic economy. Pursuit of this goal will benefit the U.S. economy and contribute to economic growth and stability abroad. A sustainable trade balance and relatively stable exchange rates are part of such a policy environment.

International macroeconomic policy coordination can help governments to maximize sustainable growth worldwide, while taking into account the spillover effects of domestic policies and their implications for trade flows and exchange rates. The regular economic summits of the G–7 nations (United States, West Germany, Japan, United Kingdom, France, Canada, and Italy) provide a framework for the discussion of economic issues of mutual concern. This cooperation has been an evolving process, but it has achieved some important successes. Economic growth has been strong, inflation rates among countries have tended to converge, and trade imbalances have declined. These successes argue for continued efforts to improve the international macroeconomic policy coordination process.

PROMOTING ECONOMIC GROWTH

In order to maximize sustainable growth, the Federal Government must remove obstacles to saving, investing, innovating, and working. Even the modest changes in growth rates that government policies can create would have a substantial impact on future living standards and on America's world leadership.

Over the long haul, growth in the Nation's capacity to produce goods and services depends on increases in the work force and in worker productivity. Productivity growth in turn depends mainly on investment in physical capital (new buildings and equipment), intellectual capital (advances in knowledge and technology), and human capital (increases in the skills and abilities of the work

force). Entrepreneurial activity plays a critical catalytic role in starting new businesses and bringing new technology to market.

Investments in plant, equipment, technology, and education are all more attractive the more robust is economic activity. A strong business climate not only spares people the short-run costs of unemployment and lower living standards, but is also conducive to the investment on which their long-run prosperity ultimately depends. Sound fiscal and monetary policies thus enhance economic growth.

INVESTMENT AND TECHNOLOGY

In order to enhance the economy's long-run health, the Federal Government should aim for a prosperity marked by a high ratio of investment to GNP through policies that reduce obstacles to both saving and investment. U.S. investment in physical capital increased in the 1980s, but it remains low by international standards. Moreover, the United States invests a smaller fraction of its GNP in nondefense research and development, which builds intellectual capital, than some of its major competitors. If the Nation is to achieve robust economic growth, government policy must create a climate in which private firms find it attractive to make productive investments both in physical and intellectual capital. The government should also support research that is likely to have widespread societal benefits, but that no individual firm would have the incentive to undertake.

A key item on the Administration's economic agenda, reducing the tax rate on capital gains, will enhance all types of investment. Cutting the capital gains tax rate will lower the cost of investment funds and thus stimulate investment. Much of the reward to entrepreneurial activity, such as generating new technology and bringing it to market, comes in the form of an increase in the value of businesses. Reducing the capital gains tax rate will thus reward these efforts and encourage invention and innovation.

The Administration has recommended substantial increases in Federal investment in research that has broad relevance and that would be underfunded by the private sector alone. Basic research builds the knowledge base on which technological progress depends and augments the ability of U.S. universities to train the scientists and engineers in whose hands the Nation's technological future rests. In order to enhance incentives for private investment in the Nation's intellectual capital, the Administration also proposes to make permanent the research and experimentation tax credit and will work to remove unnecessary legal and regulatory barriers to innovation.

But the Administration remains strongly opposed to any sort of industrial policy, which would involve second-guessing private in-

vestment decisions by selecting particular firms, industries, or commercial technologies for favorable tax treatment or direct subsidies. History provides strong support for the view that private market participants, who have profits and jobs at stake, have sharper incentives and better information than government decisionmakers and, as a consequence, make sounder investment decisions.

Similarly, the Administration recognizes that participation in an efficient global capital market benefits all nations. Foreign capital inflows amounting to about one-sixth of U.S. domestic investment in recent years have strengthened investment and productivity in the United States. The Administration strongly opposes the erection of barriers to foreign investment in the United States and is continuing to work to reduce formal and informal barriers to investment throughout the world.

Foreign direct investment in the United States has grown rapidly in recent years, in large part because America has become a more attractive country in which to invest. Despite this growth, foreign-owned firms play a smaller role in the U.S. economy than in the economies of many other industrialized nations. Moreover, U.S. companies continue to make substantial investments abroad. Increases in direct investment by U.S. and foreign firms reflect the increasing integration of the global economy and benefit both host and investor nations.

NATIONAL SAVING

Business, households, and governments all save at a lower rate in the United States than their counterparts in other advanced economies. Moreover, during the 1980s, the U.S. national saving rate—the sum of what households, businesses, and governments save—was substantially below its average over the previous three decades. A higher rate of national saving will reduce the cost of investment funds to U.S. firms. A lower cost of capital will, in turn, encourage investment, enhance productivity, and spur growth.

The most direct and important step that can be taken to increase U.S. national saving is to reduce the Federal budget deficit. The Administration's new rule for fiscal policy, discussed above, will eliminate the budget deficit and then reduce the national debt. The Administration's program for increasing national saving also includes policies to increase private saving by reducing the tax rate on capital gains and by establishing Family Savings Accounts to encourage saving for pre-retirement objectives.

HUMAN RESOURCES

The new jobs created by the U.S. economy increasingly require high levels of skills and education, and the growth of the working-

age population is slowing. Together, these trends are creating a new set of labor market concerns. The future may well bring occasional episodes of cyclical unemployment associated with shortfalls in the demand for labor. But concerns about the availability of jobs that have dominated macroeconomic policy discussion since the Great Depression are giving way to new concerns about the availability of workers and skills.

The U.S. economy will continue to benefit significantly from the remarkable flexibility of its labor markets. Employers and workers have generally adapted well to labor market changes, including the entry of the baby-boom generation and the sharp increase in female labor force participation. However, the Federal Government can lead in promoting excellence in education and can help to bring less advantaged groups into the economic mainstream, thereby expanding the supply of workers and skills.

Increasing the skills of the Nation's work force—building human capital—requires improving the performance of the Nation's elementary and secondary schools. By international standards, U.S. outlays for education are high, but U.S. students regularly do less well than their peers abroad on tests of knowledge and achievement. The most pressing task, therefore, is not to invest more money in education, but to invest more effectively. Elementary and secondary education is primarily a State and local responsibility, but the Federal Government and the private sector can play important leadership roles.

Last fall, the President called together the Nation's Governors and the Cabinet to lay the foundation for a national performance-oriented education policy. This historic summit, only the third of its kind in U.S. history, has already led to an ambitious set of national education goals. The proposed Educational Excellence Act and other Administration iniatives seek to give students and their families more choice, to give local schools more flexibility, and to hold school systems accountable for the performance of their students. The Administration's 1991 budget calls for increased funding for education programs. Particularly large increases are targeted for Head Start to help prepare young children from disadvantaged families for effective learning.

In order to expand economic opportunity at both the individual and national levels, the Administration has supported a number of initiatives designed to bring the disadvantaged into the economic mainstream. These include the Americans with Disabilities Act, increased funding for assistance to the homeless, reforms of welfare and job training programs, and programs designed to increase homeownership and the supply of affordable housing and to bring jobs to depressed inner cities.

REGULATORY POLICY

All levels of government engage in regulation that potentially serves the public interest. But too many regulatory programs have pursued unrealistic goals with excessively costly methods and offered society only meager benefits in exchange for slower growth, higher prices, and lower living standards.

PRINCIPLES OF REGULATORY POLICY

A key function of government in a private enterprise economy is to construct a legal framework that enhances the health and vigor of the private sector. Sensible and vigorously enforced antitrust policies promote competition, which in turn reduces prices and spurs innovation. Innovation is also encouraged by policies that protect intellectual property from unauthorized use. Current product liability law often discourages innovation by imposing unrealistic safety standards on new products. The Administration has proposed reforms that would restore balance to this area of the law.

While it may seem obvious that governments should not try to do what the private sector can do better, this important principle is often ignored in practice. Government regulation can rarely improve on well-functioning private markets; it usually makes things much worse. The renewed vigor of industries that were deregulated during the 1980s—including telephone equipment, airlines, overnight delivery services, and trucking—has made clear how regulation hobbles competitive markets and thus inflates costs and prices, reduces consumer choice, discourages innovation, and, ultimately, eliminates jobs.

Government action may be called for where competitive private markets do not exist or cannot function. For example, even though many consumers may be willing to pay for cleaner air, no unregulated private economy has a market in which they can do so.

Imperfections in private markets do not suffice to justify regulation, however. It must be demonstrated that these imperfections can be addressed by a regulatory policy—itself inevitably imperfect—with benefits that exceed its costs. Regulatory targets should be chosen by careful cost-benefit analysis, and the methods of regulation should minimize the cost and disruption of reaching their targets. Cost-minimization often requires carefully structuring the incentives faced by the private sector as well as granting firms and their workers flexibility in meeting regulatory requirements. Government policies should generally be designed to strengthen, not weaken, market forces and, where appropriate, to harness them in the public interest.

THE ENVIRONMENT AND THE ECONOMY

These principles underlie the Administration's policies toward the environment. The United States can and must have both a sound, growing economy and a healthy environment. Economic growth is critical to provide the resources necessary to protect the environment; the wealthiest nations are the most willing and able to devote substantial resources to environmental protection. But environmental policies that pursue unrealistic goals through inflexible regulation waste the Nation's valuable resources. Such poorly designed programs not only slow economic growth and eliminate jobs; their excessive costs also reduce support for the goal of environmental protection.

The economy and the environment both benefit if the goals of environmental programs are selected through careful cost-benefit analysis and are pursued through flexible programs that enhance the private sector's incentives to minimize costs. The Administration's proposed amendments to the Clean Air Act apply this approach. While the Administration plan calls for significant reductions in automobile emissions, it explicitly rejects the application of unreasonably stringent emissions standards whose costs would be far out of proportion to their benefits; other measures can achieve similar goals at much lower costs. The Administration's proposal for acid rain control employs tradable emissions allowances, a cost-minimizing approach advocated in this *Report* for more than a decade.

The Administration's proposals for reform of pesticide regulation also reflect its principles of regulatory policy. An unworkable zero-risk standard now applies to processed foods. The Administration proposes employing instead the standards that apply to unprocessed foods and that balance benefits and risks of pesticide use. The Administration proposal would also strengthen and simplify the pesticide regulation process. These proposals would benefit both the public health and the agricultural economy.

Discussions of many environmental concerns—including the possibility that human activity may lead to future changes in the Earth's climate—are dominated by scientific and economic uncertainty. In such areas, the Federal Government has an important role to play in supporting research to develop the knowledge base that is critical to intelligent decisionmaking. This Administration has proposed substantial increases in funding for scientific research on the processes that might lead to future climate change. Many feel the costs of substantial reductions in the emissions that might produce global warming are high; much better information on the corresponding benefits is necessary to decide if those costs should be incurred.

FINANCIAL MARKETS

When financial markets and institutions work well, they encourage saving and channel it efficiently into the most productive investments, thus stimulating economic growth and contributing to rising living standards. The Federal Government must design its regulation of financial markets and institutions carefully to ensure the soundness of the U.S. financial system while encouraging competition and innovation. This Administration's prompt actions to resolve the savings and loan crisis have laid a solid foundation for further progress and reform.

GROWTH AND MARKET REFORM IN THE GLOBAL ECONOMY

Political and economic events in the 1980s underscored the growing importance of free markets and an open trading system to economic growth and prosperity. Revolutionary political and economic change is occurring in Eastern Europe. Economic reforms in some of the severely indebted developing countries, aided by new initiatives to reduce debt burdens, hold the promise of reviving growth. The market-oriented economies of Asia have grown rapidly. The move in Western Europe toward a single market by 1992 can benefit producers and consumers worldwide.

TOWARD FREE TRADE AND OPEN MARKETS

As global integration advances and competition intensifies, the United States must increase its efforts to lead the world toward a system of free trade and open markets. The Administration remains strongly committed to those efforts and staunchly opposed to managed trade. That commitment means actively removing trade barriers and resisting inevitable calls for protection—thereby opening markets, not closing them.

The President's highest priority in trade policy is to further the role of the General Agreement on Tariffs and Trade (GATT) as a rules-based system for liberalizing trade and settling trade disputes. Widening the scope of products and practices covered by GATT is especially important to move the world toward market-oriented trade. U.S. proposals in the current Uruguay Round negotiations include bold, workable plans for integrating agriculture and services into the GATT system, for establishing common rules governing intellectual property rights, and for reducing the barriers to trade-related investment.

The removal of barriers to the movement of goods, capital, and labor among the countries of the European Community (EC) by

1992 will increase the productive potential of the economies of those countries. The reduced barriers can also benefit Americans by creating a larger, more integrated market for U.S. goods and by lowering prices to consumers as European goods are produced more efficiently. While concerns that economic integration under the EC 92 initiatives will lead to a Fortress Europe are exaggerated, it is essential that the United States remain vigilant in monitoring the EC directives to ensure that new barriers are not raised to trade with the United States and other countries outside the EC.

ENCOURAGING ECONOMIC CHANGE ABROAD

Market-oriented reforms are essential to improving living standards in the nations of Eastern Europe. These reforms will not only increase output, they will give families the freedom to choose the products they want rather than having to accept what central planners want them to have. Reforms underway in some countries demonstrate a recognition of this fact: Poland, in particular, has undertaken ambitious reforms. Along the way, such reforms may at times be difficult and painful, but they must be comprehensive to succeed.

In heavily indebted developing countries, only continued implementation of appropriate macroeconomic policies and reforms that strengthen market forces can produce strong economic growth. Negotiated reductions in debt burdens can encourage such reforms and help to ensure their success.

The Administration is deeply committed to supporting market-oriented reforms around the world. The major responsibility for their success rests with the peoples of these countries themselves and their ability and desire to implement the measures necessary to improve their economies. In Eastern Europe, the United States has taken an initiative in providing technical and financial assistance in order to increase the likelihood of success. For developing countries, the United States continues to lead in forming and implementing a strategy of debt restructuring and in supporting economic reforms that aim to revive economic growth and to restore access to world capital markets.

CONCLUSION

The economic goal prescribed by the Employment Act of 1946, a goal that is echoed in this *Report*, was "maximum employment, production, and purchasing power." Sustained, robust growth will raise living standards, maintain the Nation's position of global leadership, bring greater opportunity to Americans, and provide the resources necessary to make progress toward satisfying an array of public and private needs and wants. But as this *Report*

endeavors to explain, the experience of four decades has led to a better understanding of how to achieve these goals.

In pursuing these goals, the United States will confront a host of economic challenges and opportunities in the next decade. The Federal Government must remove impediments to national saving, investment, and innovation to create an environment in which rapid growth can occur. Educational excellence—especially in the K–12 grades—must be promoted. The flexibility of U.S. labor markets must be preserved. Employment, income, housing, and education opportunities available to disadvantaged Americans must be enhanced. The Nation must confront persistent environmental problems and new global concerns. The continuing integration of the world economy has increased the importance of free markets and an open trading system and of resisting misguided calls for protectionism. Free people working, producing, innovating, investing, and consuming in free competitive markets—both domestic and international—are the engine driving economic growth.

It would be unrealistic to expect all of these issues to have been resolved by the end of the 1990s. The successes of the 1980s have left the Nation with the economic capability to make significant progress, but obstacles remain. The benefits to surmounting these obstacles will raise the quality of life in the United States for present and future generations. These benefits will spread worldwide if the United States is able to maintain its international economic and political leadership. As the 1980s, and 1989 in particular, have shown, America's response to these challenges can make a critical difference to the well-being of people all over the world.

CHAPTER 2

Developments in 1989 and Future Prospects

THE UNITED STATES STARTED the eighth consecutive year of economic expansion during 1989, adding another 12 months to what was already the longest peacetime expansion in U.S. history. The duration of this expansion has been remarkable, and steady fiscal and monetary policies aimed at strong noninflationary growth have been essential for this achievement.

The Administration forecasts that growth will continue in 1990. Historical and international evidence shows that economic expansions do not die of old age. Expansions end because of particular external shocks to the economy, policy errors, or widespread imbalances, such as an overaccumulation of inventories, developing throughout the economy. Such imbalances were not evident in 1989, and with a continuation of fiscal and monetary policies aimed at deficit reduction and strong noninflationary growth, the chances of policy errors are reduced. Moreover, containing inflation during 1989 has set the stage for both sustained economic growth and continued reductions in inflation in the 1990s.

THE U.S. ECONOMY IN 1989

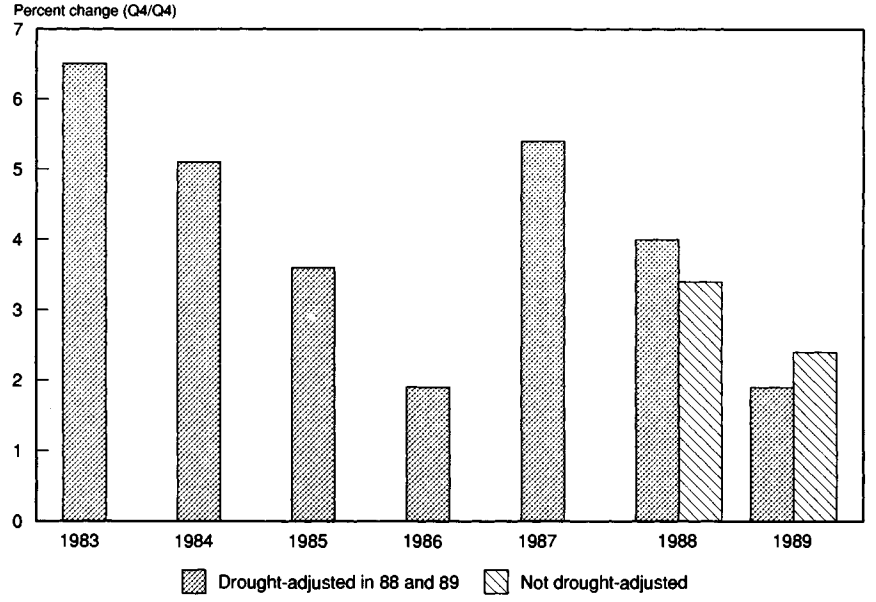
Adjusting for the effects of the 1988 drought, real gross national product (GNP) grew 1.9 percent during 1989, a more moderate pace than the very rapid rates of 5.4 percent in 1987 and 4.0 percent in 1988 (Chart 2–1). (Table 2–1 includes an explanation of the effects of the drought on GNP.) The civilian unemployment rate remained low throughout the year, ending the year at 5.3 percent. The average unemployment rate for 1989, also 5.3 percent, was at its lowest level since 1973. Moreover, inflation was contained: the fixed-weighted GNP price index increased 4.1 percent over the year, down from 4.5 percent in 1988.

FISCAL AND MONETARY POLICIES DURING 1989

Fiscal and monetary policies played important roles in the economic performance of 1989. The path of fiscal policy reflected the Administration's commitment to deficit reduction without new taxes. The near-term emphasis of monetary policy shifted in the

Chart 2-1

GROWTH OF REAL GNP. GNP growth moderated in 1989 following two years of rapid expansion.



Source: Department of Commerce.

TABLE 2-1.—*Growth of Real GNP and Components*

	1986	1987	1988	1989[1]
	Percent change, fourth quarter to fourth quarter			
GNP	1.9	5.4	3.4	2.4
GNP, drought-adjusted			4.0	1.9
Personal consumption expenditures	3.8	2.2	3.8	2.3
Nonresidential fixed investment	−5.5	8.5	4.2	4.3
Residential investment	11.6	−4.2	3.2	−6.1
Government purchases of goods and services	3.1	2.1	1.8	.2
	Annual level, billions of 1982 dollars			
Inventory investment	5.6	23.7	27.9	24.5
Net exports of goods and services	−129.7	−115.7	−74.9	−56.3

[1] Preliminary.

Note.—The loss of farm output from the drought lowered GNP in the last three quarters of 1988, reaching a loss of $21.8 billion in the fourth quarter. The loss reduced real GNP growth in 1988 by 0.6 percentage point. The subsequent rebound of farm production to more normal levels added approximately the same amount to growth in 1989.

Source: Department of Commerce, Bureau of Economic Analysis.

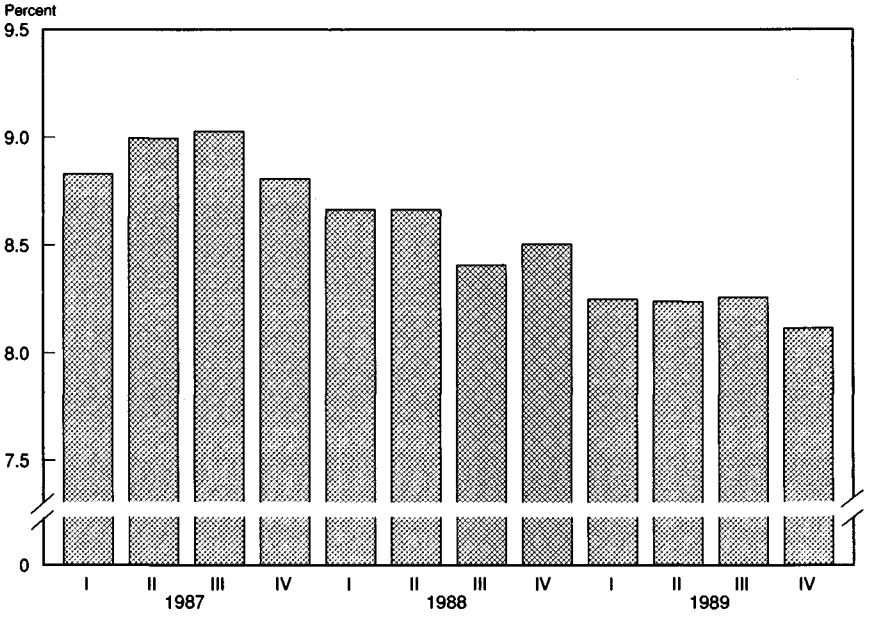
spring of 1989. During 1988 and early 1989, monetary policy had aimed to keep inflation in check. By the spring of 1989, signs that economic growth was slowing and inflation was abating led to an easing of monetary policy.

Fiscal Policy

Real Federal purchases of goods and services as measured in the national income and product accounts (NIPA) fell as a fraction of real GNP in calendar 1989, continuing a trend that began in 1987 (Chart 2-2). Reducing the Federal deficit helps to raise national saving and economic growth and is part of the Administration's strategy to achieve better long-run economic performance. Hence, controlling Federal spending remained a priority throughout the year despite the moderate slowing of economic activity during the latter half of 1989.

Chart 2-2

REAL FEDERAL PURCHASES. Real Federal purchases of goods and services continued to fall as a percent of real GNP in 1989.



Note: Transactions of the Commodity Credit Corporation are excluded.
Source: Department of Commerce.

An important aspect of fiscal policy during 1989 was the higher yield of the individual income tax system: personal income tax receipts as a percentage of personal income were above forecasts. This may partly reflect better compliance as a result of the tax rate reductions in the 1980s. Federal receipts, as measured in the NIPA, increased by $74.4 billion in calendar 1989, reaching a total of $1,046.8 billion. The increased revenues stemmed primarily from higher personal income tax and social insurance tax receipts.

During the last quarter of 1989, fiscal policy reflected the formulation of the budget for fiscal 1990. The President had submitted

initial proposals in February and reached agreement with the Congress in April on a budget plan of spending restraint that met the Gramm-Rudman-Hollings (GRH) deficit target for fiscal 1990. As the year progressed, however, the Congress did not implement the April agreement. Indeed, by the start of the fiscal year in October, the Congress had not passed most of the fiscal 1990 appropriations bills or budget reconciliation legislation.

In the absence of a completed budget, two successive continuing resolutions provided funds for Federal activities. The Administration estimated that the resulting deficit for fiscal 1990 exceeded the allowable GRH target by $16.1 billion. Following the procedures in the GRH law, the President then ordered a sequester—a mandatory reduction in budget resources—designed to reduce outlays during the fiscal year by $16.1 billion. (Box 3-1 in Chapter 3 of this *Report* contains a detailed discussion of the sequester in fiscal 1990.) Further, in the absence of a legislated budget containing genuine deficit reduction, the President announced his willingness to operate with a sequester for the entire fiscal year, if necessary. The Reconciliation Act passed by the Congress and signed by the President in December 1989 met the Administration's goals for deficit reduction. Importantly, the reduced outlays during the period were not restored: the President issued a revised sequester order intended to reduce outlays by $5.7 billion, the equivalent of the $16.1 billion sequester for roughly one-third of the fiscal year.

Federal purchases of goods and services, measured on a NIPA basis, totaled $404.1 billion in calendar 1989, compared with about $380 billion each in 1987 and 1988. Other expenditures by the Federal Government—transfer payments, grants to State and local governments, net interest paid, and so on—reached $792.6 billion in 1989. Thus, expenditures by the Federal sector totaled $1,196.7 billion for 1989, an increase of $78.4 billion over 1988. The Federal Government budget deficit as measured by the NIPA was $149.9 billion.

The Administration's goals for fiscal policy in 1989 included a reduction in the tax rate on capital gains. As a result of tax reform in 1986, the United States now taxes capital gains at a rate as high as that on other income. During its consideration of the 1990 budget, the Congress did not enact either the President's proposal for capital gains tax rate reductions or any of several congressional alternatives.

Much of the debate over a cut in the capital gains tax rate concerned its effect on the Federal budget. It is now generally agreed that these capital gains tax rate proposals would raise revenue in the short run, by encouraging the sale of previously "locked-in" assets. There is, however, debate over their long-run impact. A review of the available studies of this topic suggests that a careful-

ly designed capital gains tax rate reduction is not likely to lose revenue in the long run. Moreover, these studies do not include the beneficial effects of a capital gains tax rate cut on economic growth. By reducing the after-tax cost of capital, a cut in the capital gains tax rate will augment saving and investment and is likely to generate enough extra revenue to avoid long-run revenue losses. A reduction in the capital gains tax rate remains a priority for Administration fiscal policy in 1990.

Monetary Policy

The increased levels of resource utilization associated with the vigorous economic expansion during 1987 and 1988 created a concern by many that inflation would accelerate. To reduce the threat of rising inflation, the Federal Reserve began to tighten monetary policy in the spring of 1988 and continued to tighten until the spring of 1989.

In February 1989, the Federal Reserve announced ranges of growth for monetary and credit aggregates for the year. The ranges were 3 to 7 percent for M2, 3½ to 7½ percent for M3, and 6½ to 10½ percent for the debt of domestic nonfinancial sectors. (Box 3–2 in Chapter 3 of this *Report* contains definitions of the monetary aggregates.) The 1989 range for M2 was 1 percentage point lower than that for 1988, and the range for M3 was one-half percentage point lower. In establishing the ranges, the Federal Reserve noted that slower growth of money and credit was consistent with its goal of reduced inflation. At the same time, the Federal Reserve viewed the ranges of money growth as being sufficient to accommodate continued economic growth during 1989. Over the early part of 1989, M2 and M3 were at or below the lower bounds of their ranges.

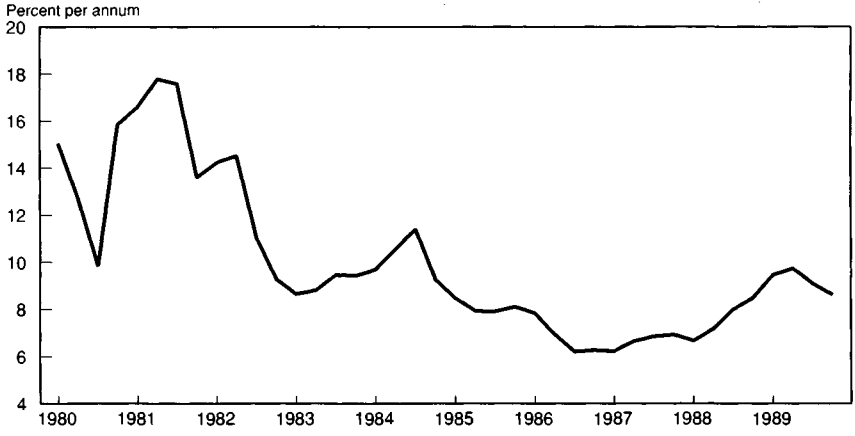
The Federal Reserve continued to tighten policy by reducing the availability of bank reserves in early 1989. This tightening raised short-term interest rates and damped growth of money and credit; it can be seen in the increase in the key Federal funds interest rate—the rate on overnight interbank credit (Chart 2–3). Between the spring of 1988 and the spring of 1989, the Federal funds rate and other short-term interest rates rose about 3 percentage points.

Interest rates on retail bank deposits also increased over this period but by considerably less than market rates, raising the "opportunity cost" of holding M2 deposits (Chart 2–4). The opportunity cost of M2 is defined as the difference between the return on an alternative asset—measured here as the interest rate on 3-month Treasury bills—and the average interest rate paid on the components of M2. That is, the opportunity cost is the interest forgone by holding funds in the form of M2 deposits rather than placing them in the market. The opportunity cost of M2 rose from about 1 percentage point in early 1988 to around 3 percentage points by early

1989 and was the major factor behind the slow growth of M2 over the first 3 months of 1989. During the following 2 months, households evidently drew down balances in order to meet unexpectedly large tax liabilities. As a result, M2 barely grew in April and actually contracted in May.

Chart 2-3

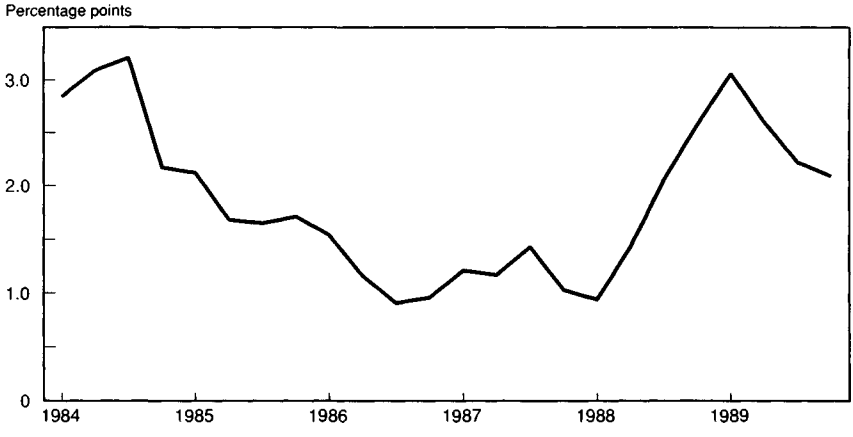
FEDERAL FUNDS RATE. Federal Reserve actions raised the Federal funds rate in 1988 and early 1989 but lowered it in the spring of 1989 as inflation pressures abated.



Note: Data are quarterly.
Source: Board of Governors of the Federal Reserve System.

Chart 2-4

M2 OPPORTUNITY COST. The opportunity cost of holding M2 deposits peaked in the first quarter of 1989 and declined over the rest of the year.



Note: Data are 2-quarter moving averages.
Source: Board of Governors of the Federal Reserve System.

By the spring, a number of factors suggested that the balance of risks was shifting from accelerating inflation to sluggish growth. These factors included the following: the slow growth of the mone-

tary aggregates, moderating demands for goods and services, the strength of the dollar on foreign exchange markets, a lack of acceleration in wages and total compensation rates, and a flattening of commodity prices. Low long-term interest rates relative to short-term interest rates added to the evidence. A low or negative spread between long-term and short-term interest rates is often viewed as an indicator that monetary policy is putting downward pressure on inflation. In the past, it has also frequently preceded recessions.

Accordingly, the Federal Reserve began to increase the availability of reserves to depository institutions. After remaining relatively flat from March through May, the Federal funds rate fell more than 1½ percentage points in the following months, bringing the rate to about 8¼ percent by early January of 1990. Other short-term market interest rates also declined substantially.

Lower market interest rates boosted the demand for monetary assets. Returns on M2 deposits fell less rapidly than did market interest rates, and the opportunity cost of M2 fell significantly. M2 was also increased by a rebuilding of tax-depleted balances. Over the May-to-December period, M2 growth averaged about 8 percent at an annual rate, a sharp pickup from the 0.2-percent average over the first 5 months of the year. For the year as a whole, M2 growth was about 4.5 percent—a little below the middle of its 3-percent to 7-percent target range (Chart 2–5).

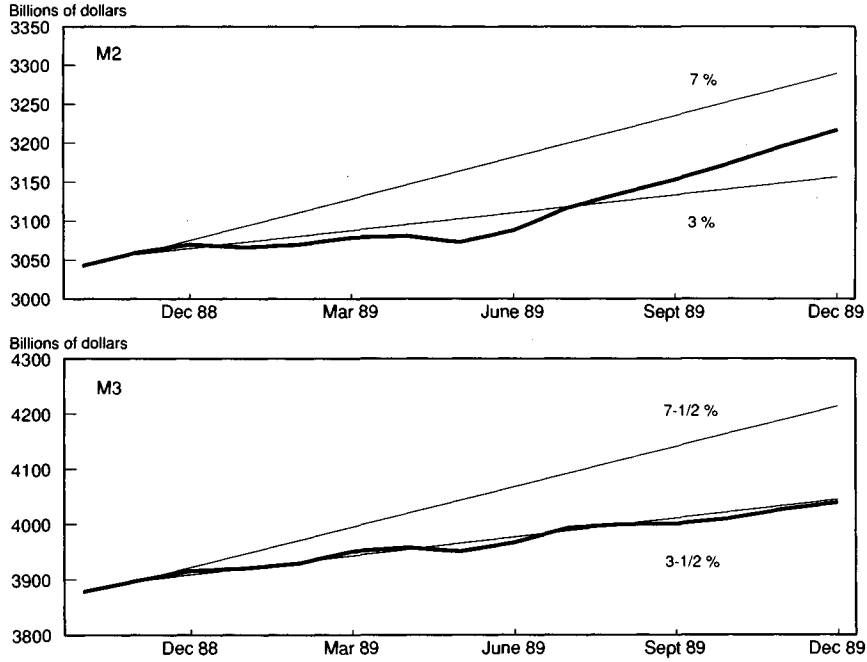
M3 growth was also relatively weak over the first part of the year. In contrast to M2 growth, however, expansion of M3 remained sluggish following the easing of Federal Reserve policy over the second part of the year. A number of thrift institutions restrained growth in their balance sheets in order to comply with the more stringent capital requirements mandated by the Financial Institutions Reform, Recovery, and Enforcement Act of 1989. For the year as a whole, M3 expanded only 3.3 percent, slightly below the lower limit of its 3½ percent to 7½ percent target range (Chart 2–5).

GROWTH OF GNP AND COMPONENTS

The more moderate expansion of real GNP between the fourth quarter of 1988 and the fourth quarter of 1989 reflected slower growth of interest-sensitive sectors (consumption of durables and residential investment) and of government purchases. In addition, increased national saving contributed to further improvements in net exports and continued growth of business investment even in the face of higher interest rates. These tendencies represent continued progress toward increased national saving and investment, better balance between domestic spending and domestic production, and a foundation for improved performance in the 1990s.

Chart 2-5

M2 AND M3. While M2 finished the year within its target range, M3 was slightly below at the end of 1989.



Source: Board of Governors of the Federal Reserve System.

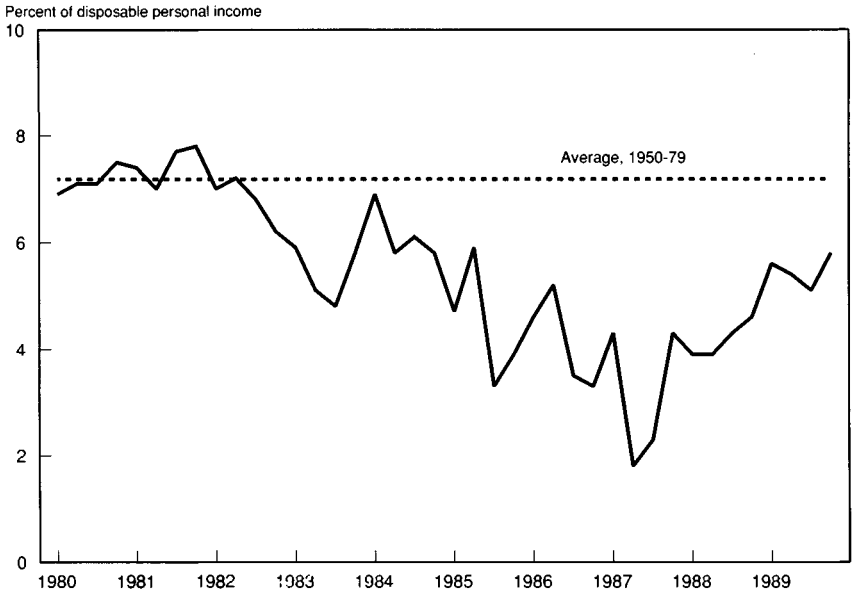
Consumption and Saving

Because consumption expenditures constitute about two-thirds of GNP, changes in consumption are important influences on GNP growth. The growth of real personal consumption expenditures slowed to a 2.3-percent pace in 1989, down from 3.8 percent in 1988 (Table 2–1). Growth in real personal disposable income was 3.6 percent in 1989, close to the 4.0-percent pace of 1988. Consequently, the less rapid rise in personal outlays was reflected as an increase in the saving rate compared to 1988. As Chart 2–6 shows, the personal saving rate moved up to 5.5 percent in 1989, substantially above its 1987 low of 3.2 percent. Nevertheless, it remained considerably lower than its 7.2-percent average for the 1950–79 period.

The slower growth of overall consumption purchases reflected continued strength in expenditures on services but weaker growth in purchases of durable and nondurable goods. Among services, real purchases of medical care continued to increase at a particularly strong pace. The weakness in purchases of durables largely reflected sluggish automobile sales. Over the first two quarters of the year, real spending on motor vehicles and parts fell below the average pace for 1988. In the third quarter, auto sales jumped,

Chart 2-6

PERSONAL SAVING RATE. The personal saving rate rose above its 1987 low but remained below its historical average.



Note: Data are quarterly.
Source: Department of Commerce

owing to the sales incentive programs introduced toward the end of the 1989 model year. In the fourth quarter, auto sales slumped again. For the year as a whole, auto sales fell from about 10.6 million units in 1988 to about 9.9 million units in 1989—the slowest rate since 1983.

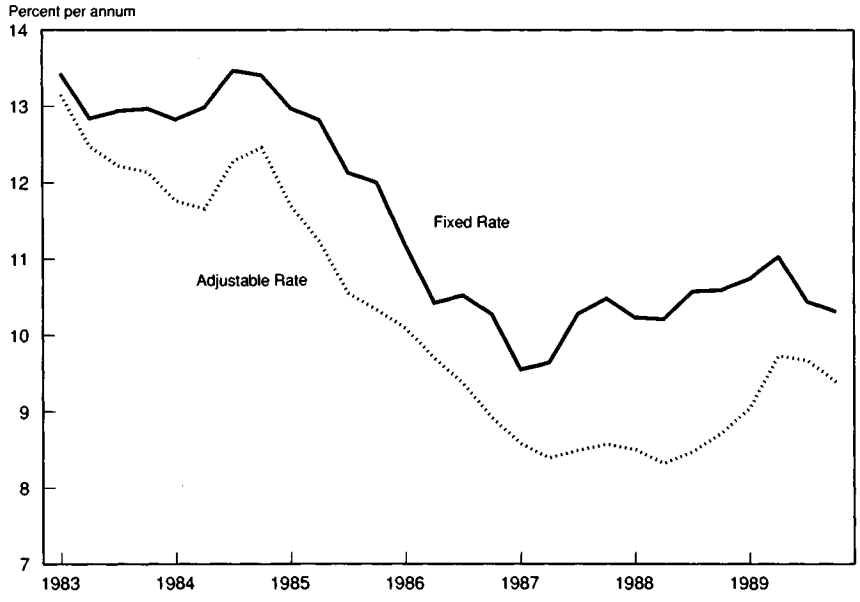
Residential Investment

Housing investment declined in 1989 as higher mortgage interest rates reduced demand. As Chart 2-7 shows, rates on adjustable-rate mortgages rose from around 8.25 percent in April 1988 to about 10 percent by June 1989 before easing over the rest of the year. Yields on fixed-rate mortgages rose less, but nonetheless in 1989 averaged nearly 1 percentage point above their levels in 1987. Sales of existing single-family homes were 3.43 million units in 1989, compared with 3.59 million units the previous year. Likewise, sales of new single-family homes declined by 3.8 percent from 1988 to 1989. In response to lower sales, housing starts tumbled from a recent peak of 1.81 million units in 1986 to about 1.37 million units in 1989, the lowest rate since 1982. Similarly, expenditures on real residential

investment in the NIPA fell 6.1 percent from the fourth quarter of 1988 to the fourth quarter of 1989.

Chart 2-7

MORTGAGE INTEREST RATES. Mortgage interest rates rose in 1988 and early 1989, reducing housing demand; rates fell starting in the spring of 1989.



Note: Data are quarterly effective rates.
Source: Federal Housing Finance Board.

Nonresidential Fixed Investment

Nonresidential fixed investment—investment by firms in structures and equipment—is an important determinant of economic performance. Over the business cycle, it is among the most volatile components of spending. Over longer periods, it is a critical input to economic growth. Real nonresidential fixed investment rose a solid 4.3 percent in 1989. The increase was spurred by the relatively high levels of capacity utilization and the need for firms to enhance their productivity in an increasingly competitive world economy. A Department of Commerce survey suggests that gains in investment spending during 1989 were widespread, with particularly strong gains occurring in nondurable goods manufacturing and in nonmanufacturing industries.

The rise in fixed investment was entirely in equipment rather than in structures. Computer purchases were particularly robust, rebounding from a lull late in 1988. Spending on most categories of structures was weak. Construction earlier in the 1980s may have been boosted by accelerated depreciation allowances, which were

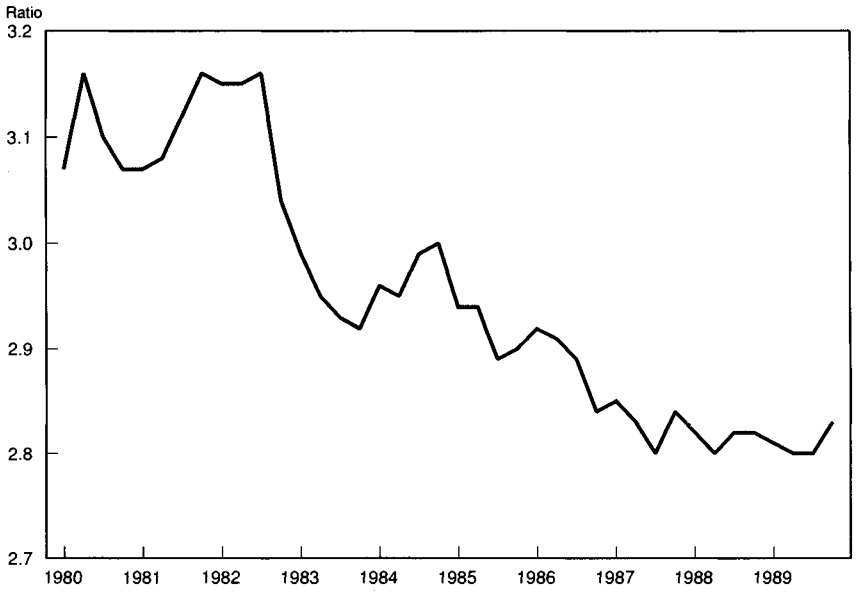
reduced by the Tax Reform Act of 1986. In addition, while energy prices rose temporarily during late 1988 and early 1989, lower average energy prices since the mid-1980s have contributed to the sluggishness in oil and gas well drilling.

Inventory Investment

Like nonresidential fixed investment, inventories are an important contributor to the cyclical behavior of the economy. Since the mid-1980s, inventory-sales ratios have declined, owing at least in part to improved inventory management techniques, and at the end of 1989 the inventory-sales ratio remained close to the level of the previous 2 years (Chart 2-8). From a macroeconomic perspective, these lower ratios are welcome because they reduce the risk of widespread inventory imbalances, which in the past have often been associated with recessions.

Chart 2-8

REAL INVENTORY-SALES RATIO. During most of the 1980s the inventory-sales ratio for the nonfarm business sector declined.



Note: Data are quarterly.
Source: Department of Commerce.

In 1989, increased real inventory investment contributed $14.3 billion to growth in real GNP on a fourth-quarter-to-fourth-quarter basis. Inventories in the farm sector fell at an annual rate of $13.6 billion in the fourth quarter of 1988, but rose $1.3 billion in the fourth quarter of 1989. The swing in accumulation of farm inventories thus contributed $14.9 billion to GNP growth.

The pace of nonfarm inventory investment in the fourth quarter was below the level in the fourth quarter of 1988, but picked up appreciably from the pace in the third quarter. Nonfarm inventories increased $31.3 billion in the fourth quarter, up from $16.2 billion in the third quarter. The swing in inventory accumulation largely reflected developments in the auto sector, which experienced sluggish demand in 1989.

Government Purchases

Federal, State, and local government purchases of goods and services, which account for close to 20 percent of GNP, were essentially flat in real terms in 1989. A moderate, 2.5-percent increase in purchases by State and local units offset a 3.0-percent decline by the Federal Government. As discussed above, the reduction in real Federal purchases was a result of the effort to reduce the Federal budget deficit.

Exports and Imports

The shortage of national saving relative to investment has been a fundamental source of the large trade deficit of the United States in recent years. (This topic is discussed in Chapter 4 of this *Report*.) The difference between U.S. imports and exports in real terms—the measure of the trade gap most relevant for explaining growth of real output—declined substantially in the first quarter of 1989 and remained roughly flat thereafter. In part, these improvements reflected the continued, lagged effects of the decline in the foreign exchange value of the dollar between 1985 and 1987. This dollar depreciation tended to reduce the price of U.S. exports on world markets and to increase the domestic price of imports. It thus boosted demand for exports and restrained demand for imports. In addition, U.S. firms had responded to difficult business conditions during the mid-1980s, when the dollar was quite strong, by taking steps to boost productivity and control costs. The cumulative effect of these measures by the end of the decade was to strengthen the competitive position of U.S. firms in world markets. Strong growth in production and incomes in foreign industrial countries also contributed to the demand for U.S. exports and the reduced trade deficit. (See Box 2-1 for a discussion of recent economic performance in other industrial economies.) In addition, slower growth of domestic demand in the United States probably restrained imports.

Real U.S. exports of merchandise and services reached an all-time high during 1989, and the United States regained its position as the world's leading exporter. The deficit on net exports in 1982 dollars totaled $56.3 billion for the year—less than one-half the level of $129.7 billion reached in 1986. In the second half of 1989, though, there were signs that the pace of improvement of the U.S. external balance was not continuing.

Box 2–1.—International Comparisons of Economic Performance

U.S. economic performance compares favorably with that of other industrial countries. The table below presents an economic summary for the United States and six other industrialized countries (collectively known as the Group of Seven, or G–7). The United States has had relatively low consumer inflation rates (as measured by the CPI) and excellent growth of industrial production, gross domestic product (GDP), and employment. Indeed, during the current expansion, the United States has generated more new employment than Canada, Japan, and Western Europe combined.

Recently, U.S. unemployment and inflation rates were again low by international standards, and real GDP per capita remained the highest in the G–7.

Economic Performance in the United States and other G-7 Nations

	CPI	Industrial production	GDP	Employment	1989 unemployment rate[1]	1989 inflation rate[2]	1988 real GDP per capita[3]
	Average annual percent change, 1982–88				Percent		
Canada	4.4	5.9	4.3	2.4	7.6	5.1	16,951
France	5.7	1.4	1.9	–.1	10.1	3.6	12,490
West Germany	1.9	2.3	2.3	.2	5.6	3.1	13,954
Italy	8.2	2.4	2.7	.3	7.7	6.5	11,969
Japan	1.3	4.7	4.2	1.1	*2.3	*0.3	15,504
United Kingdom	4.7	2.1	3.3	1.4	5.9	7.7	12,017
United States	3.5	4.9	4.2	2.4	5.3	4.6	17,849

[1] Civilian unemployment rate, fourth quarter.
[2] Percent change in CPI, December 1988 to December 1989.
[3] 1985 U.S. dollars.
* Third quarter data.
[4] Percent change in CPI, November 1988 to November 1989.

Sources: Department of Commerce (Bureau of Economic Analysis and International Trade Administration), Department of Labor (Bureau of Labor Statistics), Organization for Economic Cooperation and Development, and Council of Economic Advisers.

The nominal net export deficit fell to $50.9 billion in 1989, down from deficits of $112.6 billion in 1987 and $73.7 billion in 1988. Another broad measure of external imbalances, known as the current account deficit, averaged $113.5 billion at an annual rate over the first three quarters of 1989, compared with totals of $143.7 billion in 1987 and $126.5 billion in 1988.

BUSINESS CONDITIONS

Production and employment increased at a good pace in 1989 and capacity utilization remained high. In addition, the farm sector recovered from the effects of the drought in 1988. Nevertheless, profitability softened somewhat and productivity growth slowed.

Profits

Before-tax profits of nonfinancial corporations declined from $233.4 billion in 1988 to $225.8 billion at an annual rate over the first three quarters of 1989. The decline in profitability reflected a smaller rise in prices per unit of output than in costs per unit of output. Price increases may have been restrained in part by the strength in the foreign exchange value of the dollar, and costs were boosted as labor productivity rose somewhat less rapidly than in 1988. The manufacturing sector accounted for much of the weakness in nonfinancial corporate profitability. Profitability of auto manufacturers was particularly low, with losses in the second and third quarters. In the financial sector, profits in 1989 were hurt by the effects of natural disasters on insurance company balance sheets.

Productivity

Productivity in the nonfarm private business sector continued to increase in 1989, likely reflecting continued capital investments by firms. The 0.8-percent annual rate of increase over the first three quarters, however, was somewhat lower than over the previous several years. To some extent this reflects the more moderate pace of output growth in 1989 compared with the previous 2 years. Many firms take a long-run view and are reluctant to release skilled workers as economic growth slows. This labor "hoarding" produces smaller increases in output per hour. Productivity increases in the manufacturing sector, at an average annual rate of 2.4 percent over the first three quarters, were stronger than in the overall nonfarm sector, but also were somewhat weaker than in previous years.

Industrial Production and Capacity Utilization

The industrial sector is a bellwether of the economy and accounts for roughly one-fifth of civilian employment. In 1987 and 1988, overall production of manufacturing, mining, and utility firms expanded at an average annual rate of 5.4 percent. Expansion of industrial production slowed to 1.7 percent in 1989, partly owing to the less rapid expansion of the overall economy. Another major factor influencing industrial production in the second half of the year was the slower rate of improvement of the U.S. external balance, since many U.S.-manufactured goods are sold on international markets.

The slower pace of industrial production combined with expansion of productive capacity to reduce rates of capacity utilization in 1989. Overall, the Federal Reserve's measure of capacity utilization declined from its peak of 84.3 percent in January 1989 to 83.3 percent by December. Some industries showed larger reductions. For example, operating rates for iron and steel mills, which reached a

peak of 92.8 percent in October 1988, had fallen 14.3 percentage points by November 1989—probably influenced in part by the slowdown in auto manufacturing. Production in many industries such as paper, chemicals, rubber, and nonelectrical machinery (which includes computers) held steady or increased. But in a number of these industries, firms added capacity even more rapidly, leading to reduced operating rates.

The Farm Economy

While employing a relatively small fraction of the labor force, the agricultural sector plays a vital role in the economy. Early in the 1980s, the U.S. farm economy faced serious economic problems, but the resurgence of the farm sector since the mid-1980s is providing a sound foundation for the next decade.

The 1989 crop year was generally good, even though inadequate rainfall in some areas held crop yields somewhat below trend. Overall production of major commodities was up substantially from the low levels of the previous year, and net farm income reached a record $48 billion, up 12 percent from 1988. Land values—the major component of the farm balance sheet—increased for the third consecutive year, up 7 percent from 1988.

Farm prices for major crops declined from the peak levels reached after the 1988 drought, but remained high relative to the previous several years. Livestock prices stayed firm during the year. Higher crop prices reduce government payments to farmers. These payments—boosted by drought-relief payments—remained high by historical standards, but fell by 24 percent from 1988. Direct payments to farmers were about $11 billion, or about 6 percent of gross farm income.

Farm trade also improved. Agricultural exports in fiscal 1989 totaled about 148 million tons, were valued at $40 billion, and contributed to an agricultural trade surplus of $18 billion. In fiscal 1986, exports were only 110 million tons, with a value of $26 billion. U.S. market shares of world agricultural trade in fiscal 1990 are projected at 36 percent for wheat and 64 percent for coarse grains, down slightly for wheat from the previous year and about the same for coarse grains. In both cases, shares are substantially higher than in the mid-1980s.

Employment

Expanding production was accompanied by rising employment levels and a low unemployment rate. Between December 1988 and December 1989, nearly 2.5 million employees were added to nonagricultural payrolls. Most of this increase, 2.1 million workers, was on private payrolls.

As mentioned above, output of services grew strongly in 1989, and employment increases totaling about 1.2 million mirrored this

growth. Employment also rose in wholesale trade, retail trade, and construction. But manufacturing employment was stagnant, reflecting the weak growth of production.

As noted above, the civilian unemployment rate averaged 5.3 percent, its lowest since 1973. Unemployment rates improved for most major demographic groups, including blacks, women, and teenagers. The 1989 rate for blacks (11.4 percent) was the lowest since 1974, while that of Hispanics (8.0 percent) was the lowest since the series began in 1980. During the 1980s, the gap between adult male and adult female unemployment rates essentially vanished. In addition, the unemployment rate for teenagers was the lowest since 1973.

For those who became unemployed, the median duration of unemployment was 4.8 weeks compared to 10.1 weeks in 1983, when the demand for labor was relatively weak in the wake of the recession. The proportion of unemployed persons who lost their jobs rather than left voluntarily was 45.7 percent compared with 58.7 percent in 1982.

WAGES AND PRICES

Relatively low unemployment rates implied firm labor market conditions in 1989. Wage increases were quite low in 1986 and 1987, partly because of the temporarily low level of inflation. Increases in labor compensation in 1988 and 1989 were above the lows of 1986 and 1987. Boosted by an increase in Social Security tax rates, the employment cost index of labor compensation rose 4.9 percent over 1988, and a slightly lower 4.8 percent over 1989.

Labor compensation costs consist of wages and salaries and benefits. Benefits include items such as employers' health, disability, and life insurance contributions; contributions to Social Security and retirement plans; and compensation paid during vacations. The increase in the wages and salaries component of the employment cost index rose moderately from 3.1 percent in 1986 to 4.2 percent in 1989. The increase in benefit costs rose more sharply, from 3.4 percent in 1986 to 6.8 percent in 1988, and declined slightly to 6.1 percent for 1989. Nearly all of the acceleration in benefit costs can be traced to rising health insurance premiums.

Inflation remained moderate in 1989. The "core" CPI—a measure that excludes volatile food and energy prices—rose 4.4 percent, compared with 4.7 percent in 1988. (The CPI is a broad measure of the cost of a market basket of goods and services purchased by a typical urban consumer.) Within the CPI, costs of medical care increased sharply. Prices for shelter—a major part of household budgets—rose more moderately, as did apparel prices.

Consumer food and energy prices rose sharply over the early part of the year, owing to the 1988 drought and to higher oil prices.

Over the first 6 months of 1989, consumer prices for gasoline rose at an annual rate of about 44 percent. Later in the year the situation in agricultural and energy markets improved considerably. From July to December, consumer gasoline prices fell 21 percent. Including food and energy prices, the CPI increased 4.6 percent, essentially the same as the pace in 1988.

Movements in the finished goods producer price index—a measure of the costs of domestic goods used as inputs by businesses—were also dominated by developments in food and energy markets. During the first quarter, prices of finished foods jumped 13.1 percent at an annual rate, following a 5.7-percent rise during 1988. These striking increases stemmed mainly from even larger 14.2-percent increases in food prices at the crude materials level during 1988 and 16.9-percent increases during the first quarter of 1989, as the severe drought during 1988 curtailed food supplies. Over the following two quarters, however, prices of crude food materials declined steeply as a rebound in farm production began to show through in market prices, and finished consumer food prices declined in response.

Producer prices for finished energy products rose 36.3 percent at an annual rate over the first half of 1989. This increase stemmed in part from a reduction in production by the Organization of Petroleum Exporting Countries; from disruptions of production and distribution caused by the oil spill in Alaska, a refinery fire in California, and an accident on a North Sea oil rig; and from rising world demand. These events led crude oil prices to rise at an annual rate of 33 percent between January and June. Between June and December, however, producers' finished energy prices declined 12.1 percent at an annual rate, reflecting a 13.9-percent fall in crude prices.

SUMMARY OF 1989

The economy's continued expansion in 1989 set the stage for sound economic performance in the 1990s.

- Real GNP grew for the seventh straight year in 1989, and inflation remained under control.
- Nearly 2.5 million jobs were created, and the unemployment rate was at its lowest level since 1973.
- Fiscal policy during 1989 reflected efforts to reduce the Federal budget deficit. The trend toward slower growth of real Federal spending continued, and was bolstered by the sequester during the fourth quarter.
- After tightening early in 1989, monetary policy eased over the second half of the year in response to signs of sluggish growth and lower inflation.

- The composition of GNP growth was favorable, with less rapid increases in consumption and government spending, maintained growth of investment spending, and continued improvement in external balances.
- Economic conditions varied somewhat by sector. While the manufacturing sector experienced a slowdown, the farm economy maintained steady improvement and services continued to boom.

THE ECONOMIC OUTLOOK

The U.S. economy is expected to grow at a sustainable pace through 1990, and over the long run the potential for solid growth remains excellent. Assessments of the future inevitably rely heavily on historical experience, and a casual reading of the postwar experience may suggest that the very length of the current expansion implies that it must come to a close. A closer look at the historical record, however, shows that an economic expansion does not come with an expiration date.

WHY THE EXPANSION IS EXPECTED TO CONTINUE

Studies show that as an expansion continues, a recession does not automatically become more likely. Put differently, the probability of a recession starting during any given month does not rise as the period of expansion lengthens.

In the postwar period, rapidly accelerating inflation has often preceded economic downturns. When inflation becomes intolerable, politically or economically, there is little choice but to tighten monetary policy, which typically brings on a recession. Inflation accelerated in the years before the longest expansion in U.S. history ended in the 1970 recession. Inflation also accelerated before the 1974–75 recession. In the late 1970s, inflation rose to 14 percent over the 12 months immediately prior to the back-to-back recessions in the early 1980s. High inflation is not only bad *per se*, but can be very costly to reduce. Avoiding an acceleration of inflation, such as that which led to the recessions of 1981 and 1982, is an essential element of sound economic policy.

In marked contrast to all other expansions in postwar U.S. history, inflation in the current expansion has remained moderate and has not accelerated. The costs of relatively steady inflation around 4 percent are far below those imposed by the inflation of a decade ago, which averaged 9.6 percent, fluctuated widely, and reached a monthly peak of 18.6 percent. Nonetheless, the lower the inflation rate, the smaller is the risk of inflation rising to unacceptable levels. Hence, over the long run, further progress toward price sta-

bility is desirable. The containment of inflation is a key factor in the Administration forecast for continued expansion in the 1990s.

The economy is inevitably subjected to a variety of unanticipated events such as changes in foreign demand, rapid swings in financial markets, or abrupt movements in oil prices. However, these events may have less effect on economic activity today than in the past. The service industry is typically less susceptible to such shocks, and services have grown in importance in the U.S. economy. In addition, U.S. industry has moved to a lower inventory-sales ratio, a move that lessens the likelihood that a large inventory overhang will transform shocks into a sustained downturn. Finally, deregulation in areas such as energy markets has raised the potential to produce, but may also reduce the impact of shocks on the U.S. economy by permitting markets to reallocate economic activity more swiftly.

A final factor in ending expansions has been errors in economic policy. Because policy operates with a lag and the economy is hard to forecast, some misjudgments are unavoidable. The Administration's principle of systematic and credible fiscal and monetary policies is designed to minimize these policy mistakes by not changing policy frequently on the basis of the economic conditions of the moment or any short-run forecast. To do so would invite and perhaps guarantee costly errors. Instead, the goal of policy is to provide a stable environment that will foster strong economic performance over the long haul.

THE OUTLOOK FOR FISCAL AND MONETARY POLICIES

The Administration's primary economic policy goal is to promote further growth. Containing and eventually reducing inflation is key to achieving this goal. It is not sufficient merely to avoid a recession. Administration policies seek to remove impediments to more rapid growth. Faster growth carries with it expanded employment opportunities, an improved atmosphere for the creation of new business, and the means for society both to meet its obligations in the present and to provide for future generations.

Fiscal Policy

The projections presented below are contingent upon the successful implementation of the President's proposed policies. Economic growth will continue to raise Federal receipts and lower the budget deficit. However, it is essential that continued restraint on the growth of Federal spending permit the deficit to decline, leading to a balanced budget in fiscal 1993 and to a reduction in the national debt thereafter. In the near term, the Administration expects real Federal purchases of goods and services to fall by 2.7 percent in calendar 1990 (Table 2-2). Purchases of both defense and nondefense goods and services are expected to drop by roughly the same percentage amount.

nomic growth will continue to raise Federal receipts and narrow the budget deficit.

TABLE 2-2.—*Economic Outlook for 1990*

	1989[1]	1990 Forecast
	Percent change, fourth quarter to fourth quarter	
Real gross national product	2.4	2.6
Personal consumption expenditures	2.3	2.4
Nonresidential fixed investment	4.3	4.2
Residential investment	−6.1	5.1
Federal purchases of goods and services	−3.0	−2.7
State and local purchases of goods and services	2.5	2.0
GNP implicit price deflator	3.8	4.2
Consumer price index[2]	4.5	4.1
Compensation per hour[3]	5.5	5.8
Output per hour[3]	0.7	1.6
	Fourth quarter level	
Unemployment rate (percent)[4]	5.3	5.4
Housing starts (millions of units, annual rate)	1.3	1.5

[1] Preliminary
[2] For urban wage earners and clerical workers.
[3] Nonfarm business, all persons.
[4] Unemployed as percent of labor force including resident Armed Forces.
Note.— Based on seasonally adjusted data.
Sources: Council of Economic Advisers, Department of the Treasury, and Office of Management and Budget.

Recent developments in the Soviet Union and Eastern Europe have led some to conclude that it will be possible to spend far less on national defense. It is difficult to ascertain the potential size of such a "peace dividend" at this time. Real spending for national defense has already fallen 4.5 percent over the past 2 years. The Administration's fiscal 1991 budget projects that real defense spending will decline by 12.5 percent between fiscal 1989 and fiscal 1993. The President has already proposed reductions of $64 billion in budget authority and $29 billion in outlays over the next 3 years, relative to previously approved levels. Any further reduction can come only after a careful evaluation of the impact of current political events on our national security. If world events, negotiations for troop reductions, and progress in limiting strategic weapons permit, the size of the peace dividend could become substantially larger over time. Regardless of its size, any such peace dividend should be used wisely and with careful consideration of the Nation's domestic and foreign policy priorities. It should not be used to fuel large increases in entitlement programs, as occurred after the war in Vietnam. The President has made clear that the first priority use of any peace dividend is to reduce the Federal budget deficit.

In the longer term, it is desirable to do more than just reduce deficits. The Administration's proposed Social Security Integrity and Debt Reduction Fund is designed to guarantee that future consolidated annual Federal budget surpluses will not be used to in-

crease government spending, but instead will be dedicated to reducing the national debt. Moving away from deficits toward Federal saving will raise the low rate of national saving, lower interest rates, and increase capital formation. A credible commitment to reduced Federal borrowing will hasten the reduction in interest rates and the increase in investment.

Monetary Policy

The outlook for the economy depends in part on recent and projected monetary policy. Over the second half of 1989, the Federal Reserve eased the stance of monetary policy in view of signs of slower economic growth and reduced inflationary pressures. The lower interest rates that resulted from this easing should help to cushion the slowing in spending that became evident in 1989.

In July, the Federal Reserve announced provisional target ranges for growth during 1990 of 3 to 7 percent for M2, 3½ to 7½ percent for M3, and 6½ to 10½ percent for domestic nonfinancial sector debt. These provisional ranges are identical to the ranges for 1989. The Federal Reserve noted that, in view of various economic and financial uncertainties, it was unsure whether the velocities of M2 and M3—the ratios of GNP to these aggregates—were more likely to rise or fall in 1990. The Federal Open Market Committee (FOMC) will review these provisional ranges, and is expected to announce its decisions on the 1990 ranges in February 1990.

The FOMC will need to consider several factors. First, the Federal Reserve regards reasonably stable prices as a prerequisite to achieving its goal of maximum sustainable economic growth. Long-run price stability will require that the targets for money growth be gradually reduced in future years.

Second, short-run velocity developments are likely to differ considerably from the longer run trends. Given the substantial declines in market interest rates over 1989 and the associated fall in the opportunity cost of holding money balances, M2 velocity is likely to decline substantially into 1990. If, as the Administration is forecasting, interest rates drop further this year the decline in velocity may be accentuated, thereby requiring higher M2 growth to achieve the expected growth in nominal GNP. For M3 velocity, these interest rate effects could be offset somewhat by a reduction in managed liabilities in the thrift sector, as insolvent institutions are closed by regulators, and if other thrifts continue to expand their balance sheets slowly in order to comply with new capital requirements.

The forecast of expected nominal GNP growth of about 7.0 percent, expected lower interest rates, and any such decline in M2 velocity implies that M2 could exceed its provisional target range in 1990. If developments since July suggest that a significant decline in M2 velocity is likely in 1990, the FOMC could choose to raise its

target range. It may be reluctant to do this, however, because it may lead to misperceptions of the Federal Reserve's long-run intentions with regard to money growth and price stability. If the FOMC leaves the range unchanged, but economic and financial conditions develop according to the Administration's forecast, the higher demand for money could lead the FOMC to allow M2 to exceed its target range during 1990; if so, growth in the money stock should be slower in succeeding years as velocity returns to its long-run average. The Federal Reserve Act does not require the Federal Reserve to keep money growth within a year's target ranges if changing circumstances lead it to conclude that doing so is undesirable. In such a case, the Federal Reserve would be required to explain the reasons for its determination.

In any event, the Administration anticipates that monetary policy will continue to support economic growth with progress toward reduced inflation. The Administration's program to reduce deficits and raise government saving will complement the Federal Reserve's efforts by fostering lower real interest rates, which will help maintain economic growth while progress is made toward price stability.

THE PROSPECTS FOR GROWTH

The Administration's projections call for continued healthy economic growth and high levels of resource utilization, with inflation low and declining in later years. Economic policies and developments during 1989, particularly the containment of inflation, have set the stage for continued strong growth.

The Outlook for 1990

The Administration anticipates a 2.6-percent increase in real GNP from the fourth quarter of 1989 to the fourth quarter of 1990, somewhat faster than the drought-adjusted 1.9-percent increase in 1989 (Table 2-2). The transition from 1989 to 1990 has been affected by a number of disruptive events. During September, Hurricane Hugo battered South Carolina and in October the Loma Prieta earthquake struck northern California. In addition, the second longest strike in the history of The Boeing Company halted work from October 4 to November 22. Exceptionally cold weather in December may also have reduced economic activity.

On balance, these events temporarily slowed growth, with estimates indicating that the Boeing strike alone subtracted nearly one-half percentage point from fourth-quarter growth in real GNP. The return of production to normal levels will temporarily raise GNP growth in the first quarter of 1990. In addition, the rebuilding of both government and private structures in the aftermath of the disasters may spill over into 1990 and increase the level of GNP.

These effects notwithstanding, growth is expected to be relatively slow early in 1990 and then is expected to gain momentum later in the year. In the past, there have been several times when the economy slowed, then picked up and continued to grow for a substantial time; examples include 1966–67 and 1985–86.

The lagged effects of tight monetary policy early in 1989 are expected to spill over into the first half of 1990. But interest rates have been declining since the spring of 1989 and are anticipated to decline further. This decline is expected to contribute to the pickup in economic growth in 1990. As a result, the consumer durables and residential construction sectors are projected to rebound from weak patterns at the end of 1989. Fiscal restraint, in response to the need for deficit reduction, and a slowing in the increase of real net exports will tend to moderate growth in 1990.

The projected rate of increase of real consumer purchases from the fourth quarter of 1989 to the fourth quarter of 1990 is 2.4 percent (Table 2-2). Inflation for consumer purchases was lower in the second half of 1989, and increases in personal income have been strong. These factors are expected to support growth in consumer demand in 1990.

The projection calls for a 5.1-percent increase in residential investment in 1990, following a 6.1-percent decline in 1989. The decline of mortgage interest rates in the second half of 1989 has increased housing affordability. Further declines in interest rates and a rebound from slow housing production in 1989 are expected to stimulate housing construction in 1990. Housing starts are projected to average 1.5 million units at an annual rate by the fourth quarter of 1990.

The growth of nonresidential fixed investment spending in 1990 is expected to be about the same as the pace of 1989. Capacity utilization rates are anticipated to remain relatively high and the need for further capacity will continue to stimulate growth in investment, particularly for equipment. While still high, however, utilization rates fell during 1989. This fall, coupled with weak corporate profits in 1989, is expected to have a damping effect on the demand for capital goods. As Table 2-2 shows, real nonresidential fixed investment is expected to grow 4.2 percent in 1990, compared with 4.3 percent in 1989.

Inventory investment, after contributing to real GNP growth in 1989, is not expected to add to growth in 1990. The contribution in 1989 was driven mainly by a replenishment of farm stocks following the drought and partly by accumulation of inventories in the fourth quarter, particularly for motor vehicles. Farm inventory investment is expected to be much more modest in 1990. Furthermore, slower production aimed at reducing a fourth-quarter nonfarm inventory buildup is expected to contribute to modest growth in

early 1990. By year end, nonfarm inventory accumulation may still be below levels at the end of 1989.

State and local government purchases of goods and services are projected to increase 2.0 percent in 1990, somewhat slower than the pace of 1989. As discussed above, real Federal purchases of goods and services are projected to decline in 1990, reflecting a continued commitment to deficit reduction.

As in 1989, improvements in real net exports are expected to be smaller and more gradual over the near term, relative to the strong gains in 1987 and 1988. After falling for several years, the foreign exchange value of the dollar has increased slightly over the last year, and the growth rate of economies abroad is expected to decline modestly over the near term. Nevertheless, as the result of improved U.S. competitiveness in world markets since 1985, net exports are expected to continue to contribute to real GNP growth.

The CPI is projected to increase 4.1 percent between the fourth quarter of 1989 and the fourth quarter of 1990, while the GNP deflator is projected to increase 4.2 percent. These rates are similar to rates of inflation in recent years, excluding food and energy. In line with moderate real growth, little change is expected in the rate of capacity utilization and the rate of unemployment. This will reduce upward pressure on prices caused by sectoral capacity bottlenecks and tightening labor markets. Sharply rising and then falling prices for energy and food helped explain much of the acceleration and deceleration in inflation in 1989. Increases in these prices are expected to be modest over the near term.

Economic projections are, of course, characterized by uncertainty. The Administration was fortunate that its first official forecast (that accompanying the 1989 Mid-Session Review of the Budget) was quite accurate for 1989. Nevertheless, it must be emphasized that forecasting is an imprecise science. Unanticipated events with economic consequences, such as the hurricane and earthquake in 1989, occur from time to time. In addition, the reactions of businesses and households to changes in economic conditions or policies may shift over time. Thus, the current forecast inevitably involves uncertainties. For example, business investment, housing demand, and the improvement in international trade may be weaker than is currently projected. On the other hand, consumption growth could be stronger in 1990.

Such uncertainties are illustrated in the alternative projections presented in Table 2–3. The alternatives show somewhat stronger and somewhat weaker real growth, each with plausible associated paths for unemployment, inflation, and interest rates. Real growth in the lower path in 1990 is similar to the slowdown in 1986. The higher path shows real growth improving from the slow rate of 1989 to the faster pace of 1987 and 1988.

TABLE 2-3.—*Effects of Alternative Projections on the Budget*

	Calendar Year 1990[1]	Calendar Year 1991[1]
	Percent change, fourth quarter to fourth quarter	
Real gross national product:		
Higher growth	3.0	3.4
Administration	2.6	3.3
Lower growth	1.9	3.0
GNP deflator:		
Higher growth	4.4	4.3
Administration	4.2	4.1
Lower growth	4.0	4.1
	Percent	
Total unemployment rate:		
Higher growth	5.1	5.0
Administration	5.4	5.3
Lower growth	5.6	5.4
Interest rate, 91-day Treasury bills:		
Higher growth	6.9	5.7
Administration	6.7	5.4
Lower growth	6.5	5.5
	Billions of dollars	
Budget deficit:		
Higher growth	118.5	54.6
Administration	123.8	63.1
Lower growth	129.1	77.5

[1] Deficit is for fiscal year.

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

The evolution of the budget deficit is significantly affected by economic conditions. Hence, uncertainty in the economic forecast leads to uncertainty in the budget projections. The impact of each alternative path for economic conditions on the budget deficit is also shown in the table. The cumulative effect by fiscal 1991 ranges from a $14.4 billion increase in the deficit for the lower growth alternative to an $8.5 billion reduction under the higher growth alternative.

The Outlook Through 1995

Table 2-4 summarizes the Administration's medium-term economic projections through 1995. As the table shows, GNP growth between 1991 and 1993 is projected to be above 3 percent as the economy moves toward full utilization of its resources. Thereafter, the growth rate is expected to stabilize at around 3.0 percent, roughly equal to the economy's projected growth potential. Real compensation per hour is projected to rise in line with productivity growth at a rate of 1.8 percent per year. Inflation (as measured by the CPI) and interest rates on 91-day Treasury bills are projected to decline gradually from current levels, with real (inflation-adjusted) interest rates returning to levels closer to their historical averages.

These sustained declines in inflation and interest rates depend upon the Administration's systematic and credible macroeconomic policies, particularly those to eliminate the Federal budget deficit and then to reduce the national debt (Box 2–2).

TABLE 2–4.—*Administration Economic Assumptions, 1989–95*

	1989[1]	1990	1991	1992	1993	1994	1995
	Percent change, fourth quarter to fourth quarter						
Real GNP	2.4	2.6	3.3	3.2	3.1	3.0	3.0
Real compensation per hour[2]	.9	1.7	1.9	1.8	1.8	1.8	1.8
Output per hour[2]	.7	1.6	1.9	1.8	1.8	1.8	1.8
Consumer price index[3]	4.5	4.1	4.0	3.8	3.5	3.2	2.9
	Annual level						
Interest rate, 91-day Treasury bills (percent)[4]	8.1	6.7	5.4	5.3	5.0	4.7	4.4
Employment (millions)[5]	119.0	120.2	122.0	123.7	125.5	127.3	128.9
Unemployment rate (percent)[6]	5.2	5.4	5.3	5.2	5.1	5.0	5.0

[1] Preliminary.
[2] Nonfarm business, all persons.
[3] For urban wage earners and clerical workers.
[4] Average rate on new issues within period, on a bank discount basis.
[5] Includes resident Armed Forces.
[6] Unemployed as percent of labor force including resident Armed Forces.
Sources: Council of Economic Advisers, Department of the Treasury, and Office of Management and Budget.

The U.S. economy begins the decade of the 1990s at relatively high levels of resource utilization. Thus, unlike earlier years in the expansion, growth cannot rely heavily on fuller utilization of existing resources. Instead, future growth in the economy depends upon growth of resources and improvements in the economy's ability to produce.

Growth in output is the result of growth in the work force and improvements in labor productivity. Productivity growth, in turn, follows from increases in the quality of the work force, advances in the quality and quantity of the capital stock, and technological progress.

Growth in the labor force is the result of growth in the population and increases in the rate of labor force participation. Following the passage of the baby-boom generation into adulthood, growth of the population aged 16 and over is projected to slow in the 1990s. Population growth from 1989 to 1995 is projected to average 0.9 percent per year, down from slightly over 1 percent in the 1980s and nearly 2 percent in the 1970s (Table 2–5).

The changing demographic composition of the population affects participation rates. Overall participation rates in the 1970s were raised by the strong upward trend in the involvement of women and teenagers in the labor force. Continued strong participation increases by women furthered the rise in overall participation in the 1980s. Growth in the participation rate for women is projected to

Box 2-2.—Policy Credibility and the Economic Projections

Credible macroeconomic policies are a key to the Administration's projection of solid growth in the 1990s with gradually declining inflation. The success in containing inflation through 7 years of economic expansion has helped to build this credibility. The interest rate projections are influenced by the Administration's commitment to reducing the Federal budget deficit to zero in 1993 and dedicating projected future surpluses thereafter to reducing the national debt. The Federal Government's commitment to reduced borrowing in the future is expected to ease pressure on interest rates. Similarly, the Federal Reserve's continued commitment to move toward price stability is expected to help keep wage increases in line with productivity gains by reducing the expected inflation component of wage decisions.

There is no inconsistency in projecting continued low unemployment and declining rates of inflation. The idea that there is a simple, stable, and permanent tradeoff between inflation and unemployment does not accord with modern macroeconomic theory, which emphasizes the importance of expectations, or with historical experience. In the 1970s, inflation and unemployment were high, while in the 1980s, the opposite occurred—inflation and unemployment were relatively low. The United States and other economies are capable of sustaining growth, achieving low unemployment, *and* controlling and reducing inflation simultaneously. The notion that the *only* way to keep inflation in check is to run a slack economy with relatively high unemployment and excess capacity is incorrect.

The potential gains from credible policies are discussed more fully in Chapter 3.

slow somewhat in the 1990s, but this is expected to be offset by slower declines in the participation rates of older workers. As a result, growth of the overall participation rate is projected to average 0.4 percent per year through 1995, just below the average growth rate experienced since 1973.

The net effect of slower population growth and roughly unchanged growth in the rate of participation is slower expected growth of the labor force. Between 1989 and 1995, the projections show a 1.3-percent annual rate, down from 1.7 in the 1980s and 2.4 percent in the 1970s. With little anticipated change in the unemployment rate through 1995, employment is expected to grow at roughly the same rate as the labor force.

TABLE 2–5.—*Accounting for Growth in Real GNP, 1948–95*

[Average annual percent change]

	1948 IV to 1981 III	1973 IV to 1981 III	1981 III to 1989 III	1989 III to 1995 IV
GROWTH IN:				
1) Civilian noninstitutional population aged 16 and over	1.5	1.8	1.1	0.9
2) PLUS: Civilian labor force participation rate	.2	.5	.5	.4
3) EQUALS: Civilian labor force	1.8	2.4	1.7	1.3
4) PLUS: Civilian employment rate	−.1	−.4	.3	.0
5) EQUALS: Civilian employment	1.7	2.0	2.0	1.4
6) PLUS: Nonfarm business employment as a share of civilian employment	.1	.1	.3	.3
7) EQUALS: Nonfarm business employment	1.7	2.1	2.2	1.7
8) PLUS: Average weekly hours (nonfarm business sector)	−.4	−.7	−.0	−.1
9) EQUALS: Hours of all persons (nonfarm business)	1.3	1.4	2.2	1.6
10) PLUS: Output per hour (productivity, nonfarm business)	2.0	.7	1.4	1.8
11) EQUALS: Nonfarm business output	3.3	2.0	3.7	3.4
12) LESS: Nonfarm business output as a share of real GNP	−.0	−.1	.6	.4
13) EQUALS: Real GNP	3.3	2.2	3.1	3.0

Note.—Time periods for the first two columns are from business cycle peak to business cycle peak to avoid cyclical effects.
Sources: Council of Economic Advisers, Department of the Treasury, and Office of Management and Budget.

The productivity of each worker depends upon the skills generated by his or her training and experience, the technical sophistication of production, and the capital resources available to each worker. Following slow growth for most of the 1970s and early 1980s, productivity for the nonfarm business sector of the economy—which makes up four-fifths of GNP—is projected to increase at a 1.8-percent average annual rate through 1995. This rate is identical to growth during the years 1986–88, represents a rebound toward the 1.9-percent average for the period from 1948 through the third quarter of 1989, and contrasts with growth of only 0.7 percent for the 1970s and early 1980s.

Real investment spending has been strong from 1987 through 1989, contributing to an increase in the ratio of capital to labor, which will aid labor productivity. A stable, growing low-inflation economy provides a climate conducive to capital formation. Maintaining a low rate of inflation and low tax rates keeps the cost of capital low and the return to capital investments high. The accumulation of capital will also be aided by expected stable energy prices, which will allow firms to continue to focus on productivity-enhancing, rather than energy-conserving, capital equipment. Slower growth of the labor force and employment will also contribute to a higher capital-to-labor ratio.

Real GNP growth is expected to average 3.0 percent between 1989 and 1995. Despite expected slower growth of the labor force, continuing strong productivity growth is projected to contribute to output growth averaging 3.4 percent a year in the nonfarm business sector of the economy. Because growth is projected to be slower in the government and other sectors than in the nonfarm

business sector, total real GNP is expected to grow at a slightly slower rate.

SUMMARY OF THE OUTLOOK

- Administration policies and events are setting the stage for economic growth continuing in 1990 and later years. The containment of inflation in 1989 is a key factor in the Administration's forecast of continued expansion in 1990 and beyond. Periods of rapidly accelerating inflation are often followed by economic downturns.
- The goal for fiscal policy will be to continue to reduce government borrowing. Reduced deficits through 1993 and reduction of the national debt thereafter would contribute to lower interest rates, increased capital formation, and stronger growth.
- Monetary policy eased over the second half of 1989, lowering interest rates. Given the lags in the effects of monetary policy, this is likely to help some interest-sensitive sectors to rebound in 1990. Over the longer term, monetary growth is expected to be consistent with the Federal Reserve's goal of strong noninflationary growth.
- The Administration anticipates a 2.6-percent increase in real GNP in 1990, on a fourth-quarter-over-fourth-quarter basis, and lower inflation.
- Over the longer term, the Administration anticipates real growth in GNP at a rate of 3.0 percent per year, with continued progress in reducing inflation.

CONCLUDING COMMENTS

As the U.S. economy moves into the eighth year of growth, there is a strong basis for continued expansion in the 1990s. The Administration's goal is not simply to avoid recessions and extend the expansion. The goal is to sustain growth at a sufficiently strong pace to provide rising real incomes, expanding employment opportunities, and additional resources to address the needs and wants of the American people.

As described in detail in the next chapter, systematic and credible monetary and fiscal policies are essential for strong future growth and reduced inflation. The conduct of these policies should be governed by the goal of enhancing long-run performance, not by an exclusive focus on short-term outcomes, which would raise the likelihood of policy errors.

CHAPTER 3

Design of Fiscal, Monetary, and Financial Policies

MONETARY AND FISCAL POLICIES have powerful effects on the economy. It is essential that they be well-designed. These macroeconomic policies are powerful in part because they affect interest rates and exchange rates and thereby influence the willingness of households and businesses, both foreign and domestic, to purchase goods and services produced in America. These purchases translate into production, jobs, and income for Americans. Tax rates are among the most important determinants of incentives for saving, investment, and work effort. The government's policies toward financial markets significantly affect the stability of the economy and its ability to allocate capital efficiently.

The Administration's goals for macroeconomic policy are maximum sustained economic growth, economic stability, and low, stable inflation. Historical experience, both in the United States and abroad, has demonstrated that well-designed monetary and fiscal policies can help achieve these goals. But misguided policies can wreak havoc with the economy, by reducing its productivity, creating uncertainties that make planning for the future difficult or impossible, driving up inflation, and reducing standards of living.

THE DESIGN OF MACROECONOMIC POLICY

The power of monetary and fiscal policies to affect the economy has led some to advocate discretionary policymaking, with frequent changes in policy instruments, such as tax rates or expenditure programs, to influence near-term economic conditions. Indeed, a strong endorsement of discretionary policy was eloquently put forth in the 1962 *Annual Report of the Council of Economic Advisers* as a way to achieve the goals of the Employment Act of 1946—"maximum employment, production, and purchasing power." That *Report* argued that "discretionary policy is essential" and recommendations constituting a "far-reaching innovation in discretionary fiscal policy" were made.

In contrast, recent economic research and practical experience, while supporting the view that macroeconomic policy has powerful

effects, lead to the conclusion that discretionary macroeconomic policies can be detrimental to good economic performance. Instead, policies should be designed to work well with a minimum of discretion, with a clear focus on the longer term, and with allowance for future contingencies. Government should credibly commit to follow such policies consistently. As argued below, this approach to policy design can best achieve the Nation's economic goals.

ADVANTAGES OF SYSTEMATIC POLICIES

In its extreme form, discretionary policy involves frequently reacting to short-term developments, with little attempt to consider and communicate intentions for future actions. Such a shortsighted policy approach gives little weight to the benefits of outlining a contingency plan and committing to that plan. For this reason, discretionary macroeconomic policies can actually be counterproductive. Most businesses and many households are forward-looking; expectations of future tax rates, inflation rates, and government spending programs affect their decisions. Frequent unanticipated government actions cause uncertainty for the private sector and interfere with long-term business and household planning.

Without commitment to a clear plan, strong incentives exist to change policies in an attempt to achieve short-term gain. Economists refer to this incentive as "time inconsistency," because policymakers have a natural incentive to alter previously adopted policies or to follow "inconsistent" policies. Such policy changes can have detrimental long-term effects. For example, programs of fiscal stimulus can lead, over time, to long-run government spending that exceeds the level implied by an assessment of the costs and benefits of the programs themselves. Analogous problems exist for monetary policy. For example, an incentive exists to employ short-term monetary policy to boost output above sustainable levels. Such actions can lead to increased inflation over a longer term. Because inflation takes more time to develop than the rise in economic activity, it may not be adequately taken into account in the public policy process.

The drawbacks to discretionary policy go beyond these disadvantages. Experience has shown that the ability of discretionary macroeconomic policies to move the economy in the right direction at the right time is quite limited. First, assessing the current state of the economy is difficult because economic data are subject to appreciable errors and are generally available only after a considerable lag. Second, economic forecasting is difficult and quite imprecise, limiting the ability of policymakers to anticipate swings in the economy. Third, even if economic fluctuations are forecast correctly, determining the appropriate policy measures is difficult because the economy responds somewhat unpredictably to changes in fiscal

and monetary policy. Finally, lags between a policy action and its ultimate effect on the economy imply that timely implementation of a discretionary change in policy frequently may not be possible. To be sure, discretionary policy changes might partly offset unusually large and sustained economic fluctuations. But, in general, the ability of discretionary macroeconomic policies to contribute to economic stability is quite limited.

The alternative to discretionary policies might be called systematic policies. A systematic policy specifies, as clearly as possible, *a plan for the instruments of policy*, be they the Federal budget, the growth rate of the monetary aggregates, or tax rates. For a systematic policy to improve economic performance, it must of course be well designed. In some cases a systematic policy might be very simple and specific, such as a promise not to raise marginal tax rates or a law that sets a target for the budget deficit for several years into the future. In the 1960s and 1970s, a rule that specified a fixed growth rate of the money supply was proposed and might have been appropriate; changes in the financial sector in the 1980s, however, have rendered such a simple rule unworkable. In other cases it is appropriate and possible to specify contingencies for future policy actions, such as indexing tax brackets for inflation according to a numerical formula, or stating the conditions under which a budget target could be suspended.

However, the concept of a systematic policy is much broader than a simple or even complex numerical formula for policy. In some cases it may not be possible to be so precise about a policy plan or its contingencies, and some judgment in interpreting or implementing the plan is necessary. Even in such cases, a systematic policy has significant advantages over a discretionary policy if it places some discipline or general guidelines on future changes in the policy instruments, and if policymakers commit to this discipline. Moreover, even the most carefully designed systematic policies may need to be revised occasionally in view of significant changes in economic structure.

IMPORTANCE OF CREDIBILITY

Economic research and policy experience have led to a growing awareness of the importance of the *credibility* of policymakers to carry out a stated policy. Various definitions of policy credibility have been offered, but the following seems most useful: an announced policy is credible if the public believes that it will be implemented, and acts on those beliefs even in the face of occasional contradictory evidence. Policy credibility is not an all-or-nothing concept, and in many situations credibility can only be achieved gradually.

Policy credibility will often lead to economic performance that is superior to that in which policy is not credible. The more credible the policy, the more likely it is to improve performance. A credible disinflation plan initiated by the monetary authorities will bring down inflation more quickly and with less chance of recession than a plan with little credibility. For example, a billion-dollar stabilization fund for Poland, recently established by a group of industrial economies, is designed to lend credibility to the Polish disinflation plan by providing financial backing to help the Polish government stabilize the exchange rate. This will reinforce other policies to reduce inflation and promote external trade.

In addition, credibility can help resolve problems arising from unpredictable shifts in the structural relationships between the policy instruments and the state of the economy. Such changes can make it quite difficult for the public to assess the appropriateness of macroeconomic policies when the policy rules are complicated. If the public is confident that appropriate policies are being followed, households and businesses can plan for the future, which promotes saving, investment, and economic growth.

A NEW RULE FOR FISCAL POLICY

Since the mid-1980s, fiscal policy in the United States has been guided by the Gramm-Rudman-Hollings law, which has served as a fairly systematic rule for budget policy. As part of the fiscal policy agenda for 1990, the Administration is proposing an innovative new rule for fiscal policy, one that would be an unprecedented step in U.S. fiscal policy. The proposed new Social Security Integrity and Debt Reduction Fund would ensure that projected future surpluses in Social Security are not spent for other purposes, but rather are used to build reserves needed to help provide Social Security benefits in the future. As discussed in detail below, payments into the fund would be used to reduce government debt and decrease the legacy of deficit spending passed on to future generations. This policy rule would also increase the supply of savings, lower interest rates, and increase resources in the future. Committing such a strong rule to law will increase the credibility of the policy, which will speed up the reduction in interest rates and more quickly enhance investment and economic growth.

FISCAL POLICY

The spending and revenue activities of the government comprise its fiscal policy. In fiscal 1989 (October 1988 to September 1989) total outlays of the Federal Government for purchases of goods and services, transfer payments, grants, and interest payments amounted to 22.2 percent of gross national product (GNP). Tax and other

receipts were 19.2 percent of GNP, with a resulting budget deficit of 2.9 percent of GNP. Receipts were the same fraction of GNP in 1989 as they were 10 years before, but outlays were up by 1.6 percent of GNP over the same period. The sheer size of the Federal sector suggests that fiscal policy can shape aggregate economic activity, for the better or worse. Focusing only on the impact of fiscal policy on the level of GNP, however, understates the importance of fiscal policy.

THE IMPACT OF THE INSTRUMENTS OF FISCAL POLICY

Fiscal policy affects the economy in several ways. Government purchases of goods and services are a direct use of the productive resources of the economy, and change prices, profits, and the allocation of capital and labor. Taxes, transfer payments, borrowing, and interest payments shift funds among individuals and over time, and thereby alter incentives for work, saving, and investment. For example, income-support programs affect both the distribution of purchasing power and incentives to work. In some circumstances—for example, by reducing barriers to saving—this power of fiscal policy can improve economic performance. But poorly designed policies, such as a tax system with high marginal rates, reduce incentives for productive activity and lower the growth of national income.

In the short run, changes in government spending and revenues can significantly affect total output in the economy. For instance, increases in Federal consumption of goods and services directly boost the demand for firms' output. In the short run, firms meet this demand by producing more. But because government purchases do not increase the total productive resources in the economy, the increase will eventually diminish. After a period of time, prices begin to increase or increase more rapidly. Higher interest rates reduce domestic demand, and purchases by the private sector fall. The reduction in private purchases will occur primarily in interest-sensitive areas such as investment, and some types of investment may suffer more than others. As interest rates rise, exchange rates also rise, reducing demand for exports and raising demand for imports. The effects of the increase in government purchases are offset by the decline in investment and net exports. Over the longer term, the decline in investment in turn reduces the productive potential of the economy.

Conversely, decreases in government spending can slow growth of total demand in the short run. For example, a reduction in government spending lowers the demand for goods and services. But again, this decline is short-lived. Soon investment and net exports will increase, offsetting the reduction in government purchases,

and in the long term the higher level of investment will increase potential GNP.

Short-run changes in taxes paid by households have effects similar to changes in government purchases. To the extent that households do not save the extra funds available after a tax cut, their increased spending boosts the demand for goods and services. These increases in demand will raise production by firms and increase overall employment. Again, in the absence of an increase in the productive capacity of the economy, these increases will be short-lived.

Permanent reductions in tax rates are far more likely to expand long-run productive capacity than is a one-time tax rebate or credit. Reducing the tax-induced distortion of decisions to work, save, innovate, and invest will raise the resources devoted to production in the economy, permanently expanding total output.

THE DESIGN OF FISCAL POLICY

It is tempting to use fiscal policy in a reactive fashion, employing frequent discretionary changes in taxes and spending to alter economic activity temporarily and to counteract each aggregate fluctuation. This approach is fraught with so many difficulties that discretionary fiscal policy becomes inconsistent with ambitious goals for long-run growth. Fiscal responses to economic fluctuations should be credible and predictable. These characteristics reduce the distortionary effects of policy by aiding private-sector plans for saving and investment.

Automatic Stabilizers

During recessions, income tax receipts fall, even though tax rates are unchanged. In addition, income assistance payments (such as unemployment benefits and traditional welfare programs) rise. These kinds of systematic adjustments are called "automatic stabilizers." They are an important example of systematic policy and contribute to the predictability of short-run fiscal policy. They are clearly not discretionary, as they are embodied in legislation. Automatic stabilizers help to maintain individuals' purchasing power and mitigate the decline in aggregate demand. Studies show that, on average, disposable income falls by 40 percent of a fall in GNP. Historically, modifications to the features of automatic stabilizers undertaken for other reasons have also changed their responsiveness to economic conditions.

Systematic fiscal policies such as automatic stabilizers have distinct advantages over discretionary policies. For example, discretionary increases in spending provide a ready rationale for politically motivated increases in government programs. Also, because investors cannot undo the past, it may appear that discretionary tax increases levied on existing investments have no detrimental

effect. Over time, however, continuous application of such policies would teach investors to expect tax increases, reducing the incentive to invest and harming economic efficiency.

Budgeting Rules and Targets for Government Saving

Sustained economic growth requires continued increases in the Nation's productive capital. Government policies, such as fiscal, monetary, regulatory, and legal policies, affect national saving and are thus an important determinant of both the funds available to finance investment and their cost.

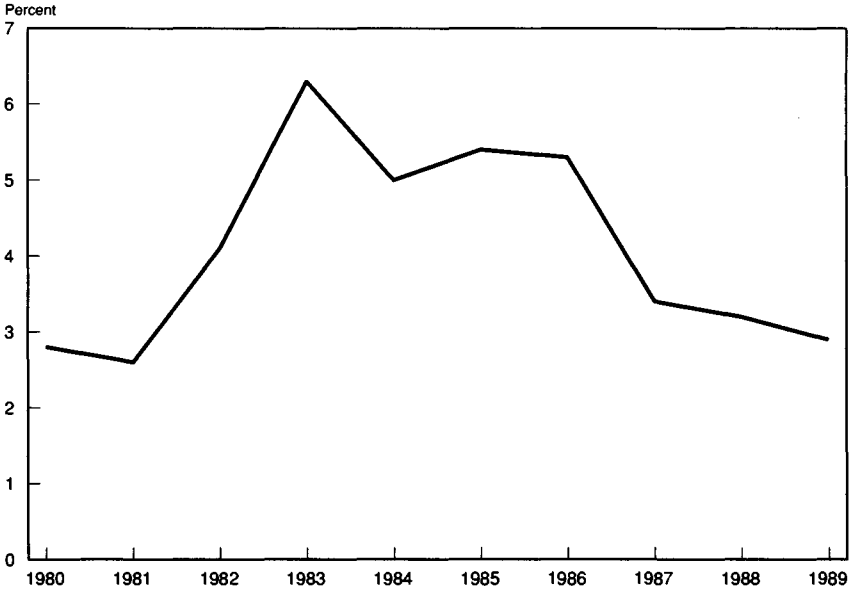
By definition, when the Federal Government budget deficit increases, government saving falls. Only if other savers—households or businesses—increase their saving dollar for dollar is there no detrimental effect on national saving—the sum of household, business, and government saving. Empirical studies find that when government reduces tax collections, increased private saving does not fully offset the decline in government saving. When government consumption increases, private investment and net exports decline; private consumption may fall, but not sufficiently to offset the rise in government consumption. Thus, chronic budget deficits reduce national saving, leading to lower domestic capital formation and reduced net exports.

The actual deficit is influenced by current economic conditions. For example, the budget deficit increased during the early 1980s in part as a result of the economic downturn. Accurately gauging the long-run impact of the deficit requires adjusting the deficit for changes caused by economic fluctuations. (This adjustment is made by calculating the difference between receipts and expenditures that would occur under current law if economic activity were equal to some estimate of the economy's high-employment potential.) At the trough of the most recent recession, the cyclical component was about two-thirds of the actual budget deficit. In the last few years, however, the economy has been closer to its potential output, making the cyclical correction less important. Nonetheless, the deficit as a fraction of GNP has fallen from 5.3 percent in fiscal 1986 to 2.9 percent in fiscal 1989 (Chart 3-1).

In 1985, the Federal Government adopted, and in 1987 amended, the Balanced Budget and Emergency Deficit Control Act, more commonly known as Gramm-Rudman-Hollings (GRH). GRH was a visible response to the record of deficit spending. At its heart are targets for the maximum allowable budget deficit, with the ultimate goal, as amended, of balancing the budget by 1993. GRH includes a mechanical procedure, known as sequester, for cutting Federal spending whenever deficits are expected to exceed the allowable target by more than $10 billion, except in fiscal 1993. (See Box 3-1 for an explanation of the sequester in fiscal 1990.) GRH provides a predictable means to reduce Federal deficits, thus serv-

Chart 3-1

FEDERAL BUDGET DEFICIT AS PERCENT OF GNP. The budget deficit as a percent of GNP has declined substantially since 1986 as a result of deficit control measures.



Note: Data are for fiscal years.
Source: Department of Commerce and Office of Management and Budget.

ing as a valuable rule for fiscal policy that reduces Federal borrowing.

In each year since the inception of GRH, the Federal deficit has exceeded the GRH target (Table 3-1). How can this happen? The most important reason is that a sequester can be implemented, if necessary, only in the first 2 weeks of a fiscal year. Thus, the GRH deficit can initially fall below the target, but rise later in the year through appropriations for new spending. For example, the fiscal 1989 budget deficit reflected the addition of large costs attributable to the rescue plan for savings and loan institutions. In addition, some programs have been excluded from the deficit calculation so that the spending they entail does not count under GRH. Finally, the inherent difficulties of economic forecasting and technical budget projections can cause the actual deficit to differ from the GRH target, although there is no systematic direction to this effect.

When viewed from a broad perspective, GRH has provided valuable control over Federal spending. To some, the failure to match the targets exactly is an indictment of GRH. But this is a narrow view. A focus simply on the difference between GRH targets and annual budget deficits ignores important progress in controlling deficits.

Box 3–1.—The GRH Process: How It Worked in Fiscal 1990

Under GRH, the Administration reviews the budget and estimates the deficit. GRH allows for a $10 billion cushion or "margin of error" (except in 1993, when there is no margin of error), but if the projected deficit exceeds the target by more than this amount, the Administration calculates automatic spending cuts (or sequester) needed in each program to meet the GRH deficit target. If legislation does not achieve this reduction by the end of the second week of the fiscal year, the President orders a sequester.

For fiscal 1990, the GRH deficit target was $100 billion. In October 1989, the Administration estimated a deficit of $116.1 billion—$6.1 billion above the target plus "cushion." Hence a sequester designed to reduce outlays by $16.1 billion was brought into operation, and the President stated that he would continue with a sequester until a satisfactory budget reconciliation bill was passed.

To meet the target, total outlays had to be reduced by 1.4 percent. GRH splits these reductions evenly between defense and nondefense spending, thus requiring an $8 billion reduction in each. However, 35.4 percent of defense outlays and 73.7 percent of nondefense outlays (largely entitlements and interest payments) are exempt by law from a sequester. To achieve the $8 billion reduction, nonexempt nondefense programs had to be cut by 5.3 percent and nonexempt defense programs by 4.3 percent.

Under the Reconciliation Act, the President issued a revised order that required a sequester of 1.5 percent for defense programs and 1.4 percent for nondefense programs. The revised sequester was designed to achieve outlay reductions equivalent to keeping the original sequester in effect until early February 1990. Hence, the Administration established the important precedent of not restoring previously sequestered amounts after the sequester period.

Since the adoption of GRH, the deficit has fallen steadily as a percentage of GNP. Moreover, deficits are far below the path projected prior to the adoption of GRH. One prominent study during 1985 projected that the unified deficit would reach $266 billion during fiscal 1989, more than $100 billion above the actual deficit. Further, the rate of Federal debt accumulation has stabilized—Federal debt held by the public rose from 26.6 percent of GNP in 1980 to 42 percent in 1986, but has remained at about this level since.

TABLE 3-1.—*GRH and Budget Deficits: The Record*

[Billions of dollars]

Fiscal Year	1985 Target	1987 Target	Actual Deficit	Actual as Percent of GNP
1986	171.9	171.9	221.2	5.3
1987	144.0	144.0	149.7	3.4
1988	108.0	144.0	155.1	3.2
1989	72.0	136.0	152.0	2.9
1990	36.0	100.0	NA	NA
1991	.0	64.0	NA	NA
1992	.0	28.0	NA	NA
1993	.0	.0	NA	NA

Sources: Department of the Treasury and Office of Management and Budget.

These improvements partly reflect better control over outlays. GRH has limited the ability to consider new spending programs or expand existing ones. Since GRH, the annual growth rate of real Federal outlays has fallen from an average of 4.7 percent for 1984 and 1985 to an average of 1.7 percent for 1986 through 1989. Controlling growth in Federal outlays is one part of sustained deficit reduction, and GRH has contributed to this process.

Although GRH has provided valuable control over deficits, it can still be improved. Currently, deficit targets may be circumvented too easily late in the fiscal year. The Administration has enunciated a principle that any increased spending after the sequester period has passed must be fully offset elsewhere in the budget. This principle serves to buttress GRH and improve the credibility of efforts to reduce Federal deficits. Reforms to the GRH law itself could further increase control over deficits initiated in this way. For example, introducing a second sequester period later in the fiscal year would maintain the discipline of automatic reductions for a longer time period. Alternatively, it may be useful to require 60-percent majorities of the House and Senate to pass any legislation that increases the deficit after the sequester period is over. A related measure is the Administration's proposal to give the President enhanced rescission authority—the power to cancel unnecessary appropriations. These cancellations would be subject to a vote by the Congress to override the rescission.

GRH could also be modified to eliminate the practice of using surpluses in the Social Security trust funds to offset the operating budget deficit. In fiscal 1989 there was a unified budget deficit of $152.0 billion. Social Security, however, had a surplus of $52.4 billion, indicating that the non-Social Security activities of the government had a deficit of $204.4 billion. As discussed below, the Administration proposes amending GRH as part of a program to protect the Social Security surpluses and reverse chronic Federal defi-

cit spending. Balancing the non-Social Security budget will require additional control over Federal outlays. In exercising that control, care must be taken to ensure adequate funding for programs that contribute to economic growth and meet essential national needs, such as research and development, education, and reductions of drug abuse.

The Importance of Eliminating Chronic Government Borrowing

The Gramm-Rudman-Hollings law has served as an important rule for reducing Federal borrowing. An improved rule for long-run fiscal policy would not only reduce deficits but would commit the Federal Government to annual budget surpluses after 1993.

Raising the rate of government saving will lower interest rates and increase capital formation and growth, leading to higher incomes. A credible policy of increased government saving would accelerate the reduction in interest rates and the increase in investment. By expanding U.S. economic resources, greater government saving will make it easier for society to meet the full range of private and government obligations. Increasing government saving will also reduce net interest payments, which constituted 14.8 percent of Federal outlays in fiscal 1989, thus freeing these resources to address other budgetary needs.

Fiscal policy should anticipate the effects of the large postwar baby-boom cohort. Total Social Security payments are projected to rise from 4.5 percent of GNP in 1989 to 6.8 percent of GNP in 2033. At the same time, the ratio of retirees to working members of the labor force is expected to increase dramatically. In the absence of a policy of government saving, financing these payments would require either extremely sharp increases in payroll taxes or large deficits, with negative consequences for economic welfare in the future.

Reforms to Social Security adopted in 1983 provide for higher future outlays by levying payroll taxes in excess of current benefit payments. At its peak in 2016, the resulting annual Social Security surplus (including interest) is anticipated to reach 1.9 percent of GNP, potentially contributing toward higher national saving, which will expand the pool of funds to finance capital formation and more rapid economic growth. It is important to establish a commitment now that this potential increase in government saving will in fact take place.

The Social Security Integrity and Debt Reduction Fund

The Administration's proposed Social Security Integrity and Debt Reduction Fund (SSIDRF) is designed to ensure that the expected surpluses are not spent for other purposes, but are used to build reserves necessary to help provide Social Security benefits

when the baby-boom generation retires. These reserves will be provided to the Nation's capital markets, thereby expanding investment and transforming the Federal Government from a drain on national saving to a source of enhanced growth.

The SSIDRF should not be confused with either the current Federal old-age and survivors insurance trust fund or the Federal disability insurance trust fund. This new fund would protect the trust fund surpluses by restricting their use to reducing the national debt. At the same time, the Gramm-Rudman-Hollings law would be amended to preclude deficits on the government's non-Social Security activities. In this way, the proposed law would provide more stringent fiscal discipline than the current GRH law, which permits Social Security surpluses to offset the deficit in the rest of the budget.

The Administration's proposal to establish the SSIDRF marks a sharp departure from a history of Federal deficit financing. Each year the Federal Government would pay from the general operating budget into the SSIDRF an amount equal to the projected surplus on the Social Security trust funds during that year. The payments into the fund could be used only to reduce outstanding Federal debt held by the public, the national debt. Outlays to the fund would be counted as any other outlay in the budget. Using Federal borrowing to finance these contributions would directly contradict the intent of establishing the fund. To preclude this possibility, the current GRH law would be amended to require a balanced budget in 1994 and thereafter. To ensure further that full payments are made each year, payments into the SSIDRF would be exempt from the sequester procedures in the GRH law. When viewed as a whole, Federal Government receipts would have to exceed non-SSIDRF outlays in order to both balance the budget *and* reduce the national debt.

Operation of the fund would be phased in over the fiscal years 1993 through 1995. The payments into the fund would be $14.1 billion in 1993, $53.6 billion in 1994, and $101.8 billion in 1995. These amounts are 15 percent, 50 percent, and 85 percent, respectively, of the Social Security trust fund surpluses projected for these years. From fiscal 1996 through fiscal 2000, the required payment would equal the surplus as projected in 1989. Thereafter, the projections would be updated at 5-year intervals.

The new proposal would not take Social Security off the budget. Receipts and outlays for Social Security would remain in the budget used to calculate the GRH deficit. Thus, any changes in Social Security benefits or contributions would be subject to the same overall constraints as other government programs. While Social Security is of vital importance, the government faces many pressing issues, and no single program should be exempted from the normal budget process.

Legislating a specific rule to reverse the established practice of Federal borrowing is a radical change in the conduct of U.S. fiscal policy. The SSIDRF would shift the government from chronic deficits to contributing to national saving. In the near term, saving allocated to the SSIDRF would rise quickly from only 0.3 percent of GNP in 1993 to 1.5 percent in 1995. At the peak in 2016, Federal saving would be $495 billion or 1.9 percent of GNP at that time.

By moving the government toward supplying funds to capital markets, the SSIDRF would raise capital formation and the economy's potential to produce. Reducing the national debt would release to the private sector funds to finance purchases of corporate stock, corporate bonds, or other financial instruments. These funds would, in turn, be used for increased capital expenditures.

Over the next half century the additional investment would lead to greater U.S. capital accumulation than would otherwise occur. This additional capital would provide substantial additional GNP to be used for a wide variety of private and government purposes. Among other uses, the additional national output would ease the burden of meeting the retirement costs of the baby-boom generation.

The Social Security trust funds are currently anticipated to begin to run annual deficits in 2030. In the absence of offsetting changes in other parts of the Federal budget, borrowing could act as a drain on national saving and capital formation. Nonetheless, implementation of the SSIDRF would endow the United States with sufficient resources to meet these demands. In effect, the more rapid growth of the capital stock generated by the SSIDRF would be used to finance retirement payments, in essentially the same way that individuals use accumulated saving to meet large, anticipated expenditures such as a college education.

Would the move toward increased Federal saving cause a drag on the economy in the short run? Economic theory and empirical evidence suggest that economic adjustment to this change in fiscal policy can be made easier by a credible commitment to the SSIDRF. A credible rule could bring a substantial reduction in interest rates prior to 1993. Economic models that take expectations of such credible policies into account indicate that a reduction in expected future short-term interest rates is likely to quickly lower long-term real interest rates by as much as a full percentage point. Lower interest rates would reduce the cost of capital, stimulating investment and economic growth. In addition, a credible rule and lower interest rates could permit more rapid, noninflationary monetary expansion.

Anticipating Potential Federal Liabilities

Broadly speaking, Federal liabilities are any obligations to pay out resources in the future. The most familiar liability is Federal

debt. Here the legal obligation is concrete and visible, embodied in the contractual terms of government bonds. However, there are many other obligations such as government insurance, loan guarantees, or costs of Federal programs in the future. Recognition of the full range of obligations underscores the importance of increasing government saving as a responsible fiscal approach to reducing the burden imposed on future generations.

The costs of many government programs will escalate in the future without matching increases in receipts. Social Security is the most prominent example, but the government will very likely also face increased outlays in the future for medicare, Federal civil pensions, and Federal military pension programs. Unlike Federal debt, these obligations are not fixed, as the exact costs of these programs may change in response to economic conditions or legislative initiatives. The government must maintain a constant vigil against escalating costs in entitlement programs. For example, improved cost control in the health care system would help to provide the increasing number of older Americans with high quality care without imposing an ever-larger burden on taxpayers. Even with improved efficiency in entitlement programs, additional resources may be necessary. Greater government—and national—saving will lead to the growth needed to expand economic resources to reduce the burden of meeting these demands as well as to enhance private living standards.

The Federal Government must monitor the need for outlays to cover Federal loan guarantees. Direct guarantees back loans for housing through, for example, the Federal Housing Administration and the Government National Mortgage Association, for agriculture via the Farmers Home Administration, and for college education via the Guaranteed Student Loan Program. In 1989, the face value of outstanding Federal Government loan guarantees was $588 billion.

Government-sponsored enterprises (GSEs) are chartered by the Federal Government but are generally privately financed. GSEs provide credit services in a variety of areas. For example, the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation operate in home mortgage markets. The agriculture sector receives additional credit through the activities of the Farm Credit System and the Federal Agricultural Mortgage Corporation.

The liabilities of GSEs are not backed by the Federal Government. In the past, however, the Congress has chosen to assist financially troubled GSEs, such as in the case of the Farm Credit System. The Administration is currently studying the risks undertaken by GSEs and the appropriate level of GSE capital consistent

with soundness, stability, and minimal potential exposure of taxpayers.

Lastly, the government must evaluate the need for increased Federal saving to meet government insurance obligations. The Federal Government meets a myriad of insurance needs: veterans' life insurance, Federal crop insurance, flood insurance, informal insurance against natural disasters, and others. In 1989, insured assets totaled $4.2 trillion, with the largest amounts in deposit insurance ($2.9 trillion) and pension fund insurance ($820 billion). The Financial Institutions Reform, Recovery and Enforcement Act of 1989 addressed weaknesses in the insurance of thrift institutions. In other areas of Federal insurance, implementing reforms, such as those discussed later in this chapter, is one way to improve the soundness of Federal insurance programs. Nonetheless, resources may be needed to meet Federal outlays for insurance over the next decade.

SUMMARY OF PRINCIPLES FOR FISCAL POLICY

- Fiscal policy should move toward credible, systematic policies that would promote strong noninflationary growth.
- The major long-run effect of fiscal policy is on national saving, capital formation, and growth. The Federal Government should continue to reduce deficits in accordance with the Gramm-Rudman-Hollings targets.
- The GRH process has provided a valuable contribution to deficit reduction. Nonetheless, it may be desirable to modify GRH to provide additional control over Federal deficits.
- Credible policies to enhance fiscal discipline by reducing the national debt after the budget has been balanced, such as the proposed Social Security Integrity and Debt Reduction Fund, will raise national saving, lower interest rates and the cost of capital, increase investment, and augment long-run growth.

MONETARY POLICY

Like fiscal policy, monetary policy is important in promoting strong economic growth and limiting the size and frequency of economic fluctuations. Over the long run, monetary policy is the most important determinant of the rate of inflation. Keeping inflation low is essential to promoting maximum sustainable economic growth and helping avoid recessions.

THE EFFECT OF MONETARY POLICY ON THE ECONOMY

When the economy is operating near its long-term potential, an expansionary monetary policy raises real GNP and lowers unem-

ployment temporarily. Wages and prices do not adjust immediately in response to a monetary expansion, but eventually they do adjust, and inflation begins to increase. If inflation increases to a level that instigates a subsequent sharp monetary tightening, a recession could be the ultimate result.

In the 1960s, many believed that the unemployment rate could be reduced permanently if only a higher rate of inflation was accepted. This belief was based largely on a negative relationship in historical data between the rate of inflation and the unemployment rate. Such historical data in the United States and other countries seemed to indicate that when inflation was higher, unemployment was lower, and *vice versa*. But the experience of the 1970s, with simultaneously rising inflation and unemployment (stagflation), and that of the 1980s, with inflation and unemployment both falling, cast grave doubt on any such simple relationship.

Since the late 1960s, economists have become increasingly convinced that a correct explanation of the relationship between inflation and unemployment depends critically on *expectations* of inflation. If expectations of inflation are low, workers will not demand large wage increases to compensate for the expected erosion of their real earnings caused by inflation. Businesses' costs of production will not rise rapidly, and increases in their product prices can be relatively low. Under these circumstances, a moderate increase in inflation may lead temporarily to lower unemployment.

Consequently, monetary policy under certain circumstances is able to reduce unemployment in the short run. An unexpected monetary expansion will produce a money-induced pickup in demand that will stimulate firms to expand employment, produce more, and raise prices.

Soon, however, people will notice the pickup of inflation. Firms will have incorporated it into their price increases; workers will add it to wage demands, eliminating the fall in real wages and leading to a return of the unemployment rate to its initial level. Because it is not possible for people to be "fooled" indefinitely about the rate of inflation, higher inflation cannot permanently lower the unemployment rate.

Moreover, under certain circumstances, higher inflation may not reduce unemployment at all. Suppose the central bank showed a persistent tendency to try to lower short-term unemployment below the level associated with realization of peoples' expectations of inflation—that is, below the nonaccelerating inflation rate of unemployment or NAIRU. (The concept of the NAIRU is explained in Chapter 5.) This tendency would be noticed and would foster higher inflation expectations. To the extent people correctly anticipate this behavior, even the temporary boom that a monetary expansion would otherwise produce would be thwarted.

THE COSTS OF INFLATION AND RECESSION

Low, predictable rates of inflation have little adverse effect on the economy. But for several reasons, high and fluctuating inflation can reduce economic performance.

First, excessive inflation leads to recessions. Monetary policy that is too expansionary will eventually bring on a rise in the rate of inflation. If left unchecked, inflation will reach a rate that is no longer tolerable. At that point, the Federal Reserve must reduce the rate of inflation by tightening monetary policy. Such a tightening may well lead to a recession, as it did in the early 1980s and in other postwar downturns.

Second, excessive inflation hinders economic growth and productivity. Inflation can depress investment by increasing the effective tax rate on capital. For example, inflation reduces the real value of depreciation allowances. In addition, excessive or fluctuating inflation tends to prevent an economy from reaching peak efficiency because inflation is associated with increased uncertainty about the future. The increased uncertainty adds a risk premium to interest rates, which raises the cost of capital and lowers investment. Also, because nominal returns on liquid deposits tend not to fluctuate point-for-point with market interest rates, depositors devote more resources to economizing on money holdings when inflation rises. Although this activity is productive from the point of view of the individual, from society's point of view it represents a waste because the resources are not being used to produce real goods and services. Moreover, because higher inflation tends to be associated with greater dispersion of prices, households and businesses will devote more resources to searching for the lowest price when inflation is high. For the same reason, resources will not be allocated efficiently.

Third, inflation raises issues of fairness. When inflation rises unexpectedly, lenders and recipients of fixed-income payments tend to lose, because the real value of their receipts falls with the rise in prices. Conversely, borrowers and others making fixed payments tend to gain. This transfer of income and wealth through unexpected inflation is arbitrary and capricious.

Containing and Reducing Inflation

High and variable inflation, such as the United States experienced in the 1970s, does great harm to the economy and must be prevented. Relatively steady inflation in the 4½-percent range, such as the United States has experienced over much of the 1980s, also has costs, although these costs are far lower than those of the late 1970s inflation. Thus, an important priority of policy must be to prevent inflation from drifting up to the 7-percent, 9-percent, and finally double-digit rates that were experienced in that decade.

Policy must also work to reduce inflation rates below the 4½-percent range over time while sustaining economic growth.

Preventing Recessions and Fostering Strong Economic Growth

Just as inappropriate monetary policies can damage economic performance by allowing excessive inflation, they also can lead directly to recessions. For example, excessively tight policies, when demand is already weak and rising inflation is not a threat, may contribute to a recession, with its attendant human and economic costs. Moreover, recessions can damage long-run economic growth by reducing confidence and thus aggregate saving and investment—crucial contributors to economic growth. But the Nation should not be satisfied merely with avoiding recessions. The U.S. economy can and should do better than that. It should sustain growth sufficient to provide rising employment and incomes to Americans as well as continued low unemployment. The President supports macroeconomic policies that promote strong, sustainable economic growth.

NEW CHALLENGES FOR MONETARY POLICY

Recent years have seen increased consensus on the appropriate goals for monetary policy. But monetary policymakers have been confronted with new technical problems in trying to achieve these goals. These problems make policy more difficult to carry out by obscuring the relationship between the tools that monetary policy has at its disposal and the objective of noninflationary growth. In addition, they make it more difficult for businesses, households, the Congress, and the Administration to monitor the conduct of monetary policy.

Changing Behavior of the Monetary Aggregates

Historically, certain measures of the money stock moved fairly closely with nominal spending, and thus represented useful measures of the stance of monetary policy. In the United States, transactions balances—currency and deposits that can be used as means of exchange—were especially noteworthy in this regard. The association appeared to be so close that the Federal Reserve took steps in 1979 and the early 1980s to increase its control over the growth of the monetary aggregate M1. (Box 3–2 provides definitions of the monetary aggregates.)

However, beginning in the early 1980s, M1's velocity (the ratio of GNP to M1) became much less predictable. Velocity no longer tended to increase steadily (Chart 3–2). At first, it was not clear whether the change in the relationship was temporary or permanent. Eventually, though, evidence accumulated that the breakdown was permanent and primarily reflected a regulatory change—the nationwide introduction of NOW accounts, which are

Box 3-2.—Definitions of the Monetary Aggregates

M1 includes currency, travelers checks, demand deposits, and other fully checkable deposits such as interest-earning negotiable order of withdrawal (NOW) accounts. It was designed to measure the quantity of transactions instruments, but the inclusion of NOW accounts implies that M1 in fact includes a substantial portion of savings balances. Moreover, certain other accounts that are not included in M1, such as money market deposit accounts (MMDAs) and money market mutual funds (MMMFs) can be used, within limits, for transactions.

M2 is defined as M1 plus a number of savings instruments, including savings deposits, MMDAs, certain MMMFs, and small time deposits. It also includes certain liabilities—repurchase agreements and Eurodollar deposits held by U.S. residents—issued by banking institutions on an overnight basis. M2 is designed as a broad measure of monetary assets.

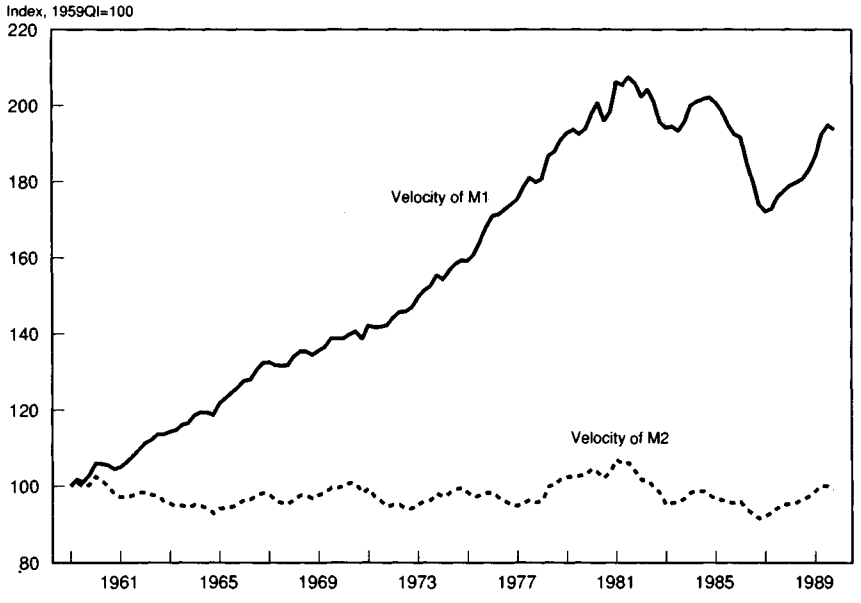
M3 comprises M2, shares in money market mutual funds that are available only to institutions, time deposits with balances of at least $100,000, and repurchase agreements and Eurodollar deposits with terms longer than 1 day.

interest-bearing, checkable deposits. Because these accounts pay interest, households shifted into NOW accounts (and therefore into M1) not only a large volume of transactions balances from demand deposits, but also savings balances that were in the non-M1 part of M2. This latter shift meant that M1 no longer so dominantly represented transactions balances. For related reasons, M1 and its velocity became much more sensitive to swings in market interest rates. In that light, it was not surprising that the relationship of M1 to GNP changed.

M2 and M3 are substantially broader than M1 and encompass many more types of financial assets. Probably because these aggregates represent broader measures of wealth than M1 and are not restricted to transactions vehicles, they have not historically related as closely to GNP as did M1 before the 1980s. Nevertheless, some stable patterns in their velocities can be detected. For example, the velocity of M2 has tended to fluctuate around a fixed level over the past 30 years (Chart 3-2). This pattern probably reflects the breadth of this aggregate and the resulting tendency for shifts from one liquid savings asset to another to be captured within it. The pattern also reflects the long-run tendency for interest rates on deposits to follow market interest rates. Because this tendency is incomplete, the velocity of M2, like that of M1, tends to rise and fall with short-term market interest rates, reflecting shifts between

Chart 3-2

VELOCITIES OF M1 AND M2. The velocity of M1 deviated in the 1980s from earlier patterns, while the velocity of M2 remained relatively stable.



Note: Data are quarterly.
Source: Board of Governors of the Federal Reserve System.

liquid balances and market instruments as their relative returns vary. But this tendency is less pronounced for M2 than for M1, making it more suitable as a monetary target.

Despite their relative stability, the relationship of these broader aggregates to nominal income over shorter periods has at times been erratic, and instances of these temporary shifts appear to have become more frequent in the 1980s. Some examples of such behavior have reflected regulatory influences. For example, M3 was noticeably affected in 1989 by changing regulations in the thrift industry. A provision of the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 mandated increased capital standards for thrift institutions. In order to comply with these standards, some thrifts sharply reduced assets and funding sources. A portion of these funding sources were managed liabilities included in M3 (but not in M2), such as large certificates of deposit and securities sold under repurchase agreements. In addition, a number of insolvent thrift institutions substituted borrowings from the Resolution Trust Corporation for liabilities included in the monetary aggregates. As discussed in Chapter 2, this drop in M3-type instruments meant that M3 growth, unlike that of M2, did not increase

significantly in the second half of 1989. The sensitivity of the monetary aggregates to such developments is one reason that monetary policymakers should not focus exclusively on the aggregates in formulating policy.

Changing Economic Relationships

Rapid changes in the structure of the economy and financial markets in recent years have also posed challenges for monetary policymakers. Such changes alter the relationships between monetary policy instruments and economic outcomes. Identifying these relationships is difficult to begin with; rapid shifts make identification all the more difficult, and thus complicate the conduct of monetary policy. They also make it harder for the public to assess the stance of monetary policy.

One such change is that the volume of imports and exports relative to GNP has risen considerably. Both imports and exports are sensitive to exchange rates. Thus, the larger international sector of the U.S. economy may have caused overall production to become more sensitive to exchange rates. Because exchange rates are importantly influenced by interest rates, this change in structure may constitute one channel by which the effect of monetary policy on the economy has changed.

Financial innovation and deregulation have also been important in the 1980s and may lead to an altered responsiveness of spending to interest rates. For example, the elimination of deposit interest rate ceilings, the development of highly liquid secondary markets for mortgage loans, and the wide availability of adjustable-rate mortgages (which usually offer relatively low initial interest rates) mean that mortgage credit is no longer as constrained during a period of monetary tightening as it was before the 1980s, reducing the interest-sensitivity of residential construction activity.

Another example of possible changes in interest sensitivity relates to household consumption spending. The increasing use of adjustable-rate mortgage and consumer loans in recent years has tended to increase the sensitivity of household expenses to changes in market interest rates. Consequently, the sensitivity of household spending to changes in interest rates may have increased. However, a greater proportion of households' financial assets now bears interest returns that vary with market interest rates than was the case before the 1980s. This fact would tend to offset any increased sensitivity of consumption.

Empirical studies that attempt to determine whether the responsiveness of spending to interest rates has changed obtain mixed results. Most studies confirm a lower interest sensitivity of residential housing expenditures; a few find a reduced sensitivity in other sectors as well. On the whole, there is some evidence for the proposition that the interest sensitivity of aggregate spending has fallen

in the 1980s, implying that larger changes in interest rates are needed to offset economic fluctuations.

THE DESIGN OF MONETARY POLICY IN THE 1980s AND 1990s

Substantial movements in the velocities of the monetary aggregates in recent years have made rigid monetary targeting inappropriate. Given this situation, but recognizing the disadvantages of shortsighted, discretionary policy discussed earlier in this chapter, the Federal Reserve has not regressed to an undisciplined, ad hoc approach to policy. Rather, it has attempted to develop a more systematic, longer run approach. By attempting to pursue such a forward-looking policy consistently over time, the Federal Reserve appears to have achieved a high degree of policy credibility.

The Framework for Monetary Policy

The Federal Reserve Act establishes a broad framework for the conduct of monetary policy. It calls for two policymaking bodies within the Federal Reserve: the 7-member Board of Governors, located in Washington; and the 12-member Federal Open Market Committee (FOMC), which includes the members of the Board and, on a rotating basis, presidents of 5 of the 12 regional Federal Reserve Banks.

The Federal Reserve Act sets goals for policy, requiring that the Federal Reserve shall "maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates." The law also requires the Fed to report to the Congress annual target ranges for growth of the monetary and credit aggregates.

Thus, the law establishes broad principles for the conduct of monetary policy. Within this framework, the Federal Reserve must design a policy to meet its goals. In the regular meetings of the FOMC (currently eight times per year), FOMC members decide what adjustments in the policy instruments, if any, are appropriate, and issue a directive for implementing these adjustments to the Federal Reserve Bank of New York, which acts as the FOMC's agent. The directive calls for adjustments in the supply of reserves; it is presented in the context of a public statement (released with a lag) that explains the FOMC's reasons for the change.

Changes in the supply of reserves lead to changes in short-term interest rates. For example, an increase in the availability of reserves means that banks will have to bid less aggressively for funds in the open market. Consequently, interest rates will decline, at least temporarily. An increase in reserve availability also means that fewer banks will need to borrow from the Fed's discount

window to obtain funds. Consequently, lower interest rates tend to be associated with reduced borrowing at the Fed's discount window, and higher interest rates with increased borrowing.

Since 1982, the Fed has relied on this association, using an operating target for the quantity of borrowed reserves as an index of the desired availability of bank reserves. Over the past 2 years or so, however, the relationship of borrowing to reserve market conditions has shifted somewhat unpredictably. Consequently, the Federal Reserve has gradually reduced its reliance on borrowed reserves and has focused more directly on interest rates—especially the Federal funds rate, the interest rate on overnight interbank loans—in implementing monetary policy.

Operating Strategies for Reserves and Interest Rates

The Federal Reserve generally increases interest rates when inflationary pressures appear to be rising and lowers interest rates when inflationary pressures are abating and recession appears to be more of a threat. In general, Federal Reserve policymakers base their assessment of inflation pressures and the state of economic activity on several key economic and financial indicators as well as on economic forecasts; some of these forecasts are constructed judgmentally by the Fed's staff, some are econometric, and some are produced by private forecasters. Financial markets can also provide valuable information. For example, long-term interest rates incorporate market participants' assessment of the future rate of inflation.

Assessing just how much the policy instrument needs to be changed as circumstances evolve requires judgment. Thus, a policy approach that relies on the expertise of the FOMC members is appropriate and should be preserved. If the operating stance of policy is gauged in terms of monetary aggregates, appropriate settings change with shifts in the behavior of velocity; if measured by interest rates, appropriate settings vary with the interest sensitivity of aggregate demand; and, if measured in terms of borrowed or nonborrowed reserves, appropriate settings change as the relationship between reserve measures and interest rates changes. Experience has indicated that predicting such changes accurately is often impossible. The Federal Reserve's ability to react flexibly to unforeseen, adverse shifts in financial market conditions is especially useful. For example, the Federal Reserve's provision of additional liquidity in the wake of the stock market break of October 19, 1987, was appropriate and contributed to a return of market confidence.

Role of Monetary Targets

As discussed above, the law requires the Federal Reserve to set annual target ranges for the monetary aggregates. Throughout the 1980s, the Federal Reserve set annual target ranges for the mone-

tary aggregates M2 and M3, and through 1986 it set ranges for M1. In view of the generally looser relationships of the monetary aggregates with GNP over recent years, however, the Federal Reserve has relied less on all of the aggregates. In 1988 and 1989, the FOMC set target ranges for M2 and M3 that were 4 percentage points wide, 1 percentage point more than had been specified earlier. In widening the ranges, the Federal Reserve noted the sensitivity of velocity to market interest rates as well as a more erratic relationship between velocity and interest rates. For much the same reasons, the Federal Reserve in conducting monetary policy has monitored a variety of economic and financial indicators in addition to the monetary and credit aggregates.

Despite problems with the monetary aggregates, the Federal Reserve has not adopted a purely discretionary approach to policy. Rather, the Fed has made clear that its long-run goal is to do its part to promote economic growth by reducing inflation and ultimately achieving price stability. Within this long-run policy orientation, the monetary aggregates can play a useful role. In particular, research at the Federal Reserve and elsewhere shows that the velocity of M2 has been essentially stable over the long run. M2 could serve therefore as an anchor for price stability and as a basis for a credible, systematic long-run monetary policy. That is, as long as there are no signs of *permanent* shifts of M2 velocity, the Federal Reserve would do well to commit to eventually maintaining *long-run* growth of M2 consistent with expansion of the economy's potential to produce, while allowing higher or lower growth rates over shorter periods of time to offset shifts in velocity. Such an approach would be consistent with the Federal Reserve Act's requirements for monetary policy.

By consistently following a forward-looking policy directed at this goal, the Federal Reserve appears to have achieved a high degree of credibility. This credibility is suggested by the lack of increase in measures of inflation expectations in the late 1980s as the economy drew closer to full utilization of its productive resources, a situation that in the past typically was characterized by rising inflation expectations.

IMPORTANCE OF A CREDIBLE MONETARY POLICY

A high degree of monetary policy credibility will often lead to superior economic performance compared with the situation where a policy is not perceived to be very credible.

Credibility and Disinflation

Suppose monetary policymakers announced their intention to lower the rate of inflation over a specific time interval and, to achieve this goal, slowed the growth of the money supply and allowed interest rates to rise. If the policy was not viewed as credi-

ble—for example, if the public thought that the policy would not be maintained—households and firms would continue to set wages and prices as they had previously, at least for a time. Meanwhile, the increasingly restrictive monetary policy would restrain demand and production. Thus, the lack of policy credibility would result in a worsening of the economic situation, as inflation remained high and unemployment rose. This outcome would persist until the public's expectations of the rate of inflation fell.

Suppose, on the other hand, that the public believed that the policy of reduced inflation would be achieved. In these circumstances, the more restrained monetary policy would be accompanied by a drop of inflationary expectations. The policy restraint would have a smaller effect on unemployment and production, relative to the situation of low policy credibility. Full employment would be maintained, or at least the period of limited slack would be shorter, and output would again achieve its potential, but with less inflation than before.

Policy credibility is also valuable during a period of falling inflation, because a temporarily higher rate of monetary growth may appear to contradict the stated policy of lower inflation. As the rate of inflation falls, the public will likely wish to hold a larger quantity of money, because the opportunity cost of doing so will be smaller—that is, money holders will be giving up less income by holding money, as opposed to investing in financial assets or appreciating durables such as housing. The Federal Reserve could accommodate this increased demand by allowing the money stock to grow more rapidly for a time. Ideally, the public will recognize that the increased rate of money growth is temporary and a natural consequence of the disinflationary policy. Even if the public does not understand this process but finds the policy of disinflation to be credible, inflation expectations will not rise in response to the pickup in money growth. If the policy does not have much credibility, on the other hand, the public might become concerned that the higher money growth is permanent, signaling an inflationary monetary policy. Any consequent heightening of inflationary expectations would hinder achievement of the Nation's economic goals.

Credibility and Economic Uncertainty

Credibility can help resolve problems that can result from unpredictably shifting economic relationships. For example, the looser relationship of the monetary aggregates to economic activity not only makes it more difficult for the Federal Reserve to conduct monetary policy, but it also causes problems for the public in monitoring the stance of monetary policy. The increased uncertainties about possible changes in structural economic relationships have a similar effect, by making it more difficult for the public to determine whether a given policy change will have the desired effect on

the economy and on inflation. If monetary policy is credible, short-run difficulties of monitoring the stance of monetary policy will not adversely affect the public's expectations.

Achieving Policy Credibility

Policy credibility is clearly useful to have, but achieving it may not be easy. Simply announcing a change in policy does not make it believable. Credibility depends in part on the plausibility and consistency of the announced policy in the context of the overall economic environment and other policies. Credibility probably depends most importantly on a track record of following the stated principles of policy.

SUMMARY OF PRINCIPLES FOR MONETARY POLICY

- Monetary policy, and macroeconomic policies more generally, should adopt ambitious but realistic goals for economic performance. The Nation should not be satisfied merely to avoid recessions and contain inflation. The U.S. economy can and should do better than that. It should sustain growth sufficient to provide rising employment and incomes and continued low unemployment.
- Monetary policy can contribute to the achievement of these goals by systematically controlling and reducing inflation.
- Monetary policy needs to maintain credibility, because credibility helps ensure that the goals of policy will be attained during a period of dynamic economic and financial developments. Policy credibility is enhanced by building a record of achievement of the stated goals of policy and by consistently following stated policy principles.
- Over long periods of time, the monetary aggregates are useful guides to monetary policy. In view of the difficulties of predicting velocity, however, monetary policymakers also need to monitor other economic and financial measures within a credible, systematic approach to policy.

INTERNATIONAL ASPECTS OF FISCAL AND MONETARY POLICY

As discussed above, the internationalization of the U.S. economy has implications for monetary and fiscal policy. For example, there is a tendency for government deficits to crowd out net exports and for larger, more sensitive international capital flows to influence the effects of domestic policies on interest rates. This section analyzes the international dimension of economic policy considerations in more detail.

Linkages between the United States and the rest of the world led to some of the most visible and significant features of U.S. economic performance in the 1980s. There were wide swings in the value of the U.S. dollar. For example, it rose from 1.82 Deutsche marks per dollar (DM/$) in 1980 to more than 3.40 DM/$ in early 1985 before falling back to 1.76 DM/$ on average in 1988. The U.S. current account, which includes trade in both goods and services, plummeted from a surplus of $8 billion in 1981 to a record deficit of $144 billion in 1987—a deficit equivalent to 3.2 percent of U.S. GNP. This deficit reflected a $160 billion excess of merchandise imports over exports. Since this peak, the merchandise trade deficit has been cut more than 30 percent to an annualized level of $111 billion.

The fact that the United States has important connections to the rest of the global economy must be considered in the design of fiscal and monetary policy. These policies influence economic performance in part through their effects on exchange rates, on international capital flows, and on the trade balance. The United States accounts for more than one-quarter of total world production of goods and services. Not surprisingly, U.S. policy actions have implications for other industrialized economies and for developing economies. Policy actions taken by other countries, especially the larger ones, also influence U.S. economic performance. Growing recognition of mutual concerns and international economic linkages has heightened awareness of the potential benefits from enhanced international coordination of economic policies. A challenge for the 1990s is to use and improve the process for policy coordination developed in the 1980s to achieve sustained, noninflationary growth for the global economy.

INCREASED OPENNESS OF THE U.S. ECONOMY

The growing economic interdependence of the United States and other countries is reflected in expanding international trade and capital flows. U.S. imports of goods and services increased from less than 5 percent of total demand on average in the 1960s to more than 11 percent on average in the 1980s and 12.7 percent in 1988. This increased presence of foreign products has generated concern over the competitiveness of U.S. industries. What is not as frequently recognized is that U.S. exports of goods and services to other countries have also grown to record levels. Nearly 11 percent of domestic production was sold abroad during the 1980s, compared with just 6 percent on average during the 1960s. Through international trade, economic expansion in the rest of the world contributes to the health of the U.S. economy.

International financial markets have also grown dramatically over the past decade. Capital flows from abroad help to finance in-

vestment expenditures in the United States. These flows respond quickly in 24-hour financial markets to differences in short-term interest rates and other developments across countries. Because capital movements are sensitive to differences in policy, the globalization of financial markets has increased the interdependence of what were traditionally regarded as domestic policies.

Implications of Openness for Monetary and Fiscal Policies

International considerations do not alter the basic principle that credible, systematic monetary and fiscal policies can promote noninflationary growth. The complex interactions among countries, however, should be taken into account in policy design.

U.S. policymakers must recognize that international linkages influence the effectiveness of their policy actions. The experience of 1980 to early 1985 provides an example. In a determined effort to bring inflation under control, the Federal Reserve, supported by the Administration, pursued firm anti-inflationary policies during 1980-82. Fiscal policy turned expansionary during the 1982 recession. These policies did contribute to the reduction of inflation and to strong economic growth in 1983 and 1984. However, they also contributed to rapid appreciation of the U.S. dollar (Chart 3-3) and a decline in net exports. First tight monetary policy and then declines in government and private saving relative to investment put upward pressure on interest rates in the United States. Partly in response to the resulting interest rate differentials, the dollar appreciated. Imports became relatively cheap, while U.S. exports became more expensive abroad. The resulting trade and current account deficits were the counterparts to the net capital inflows.

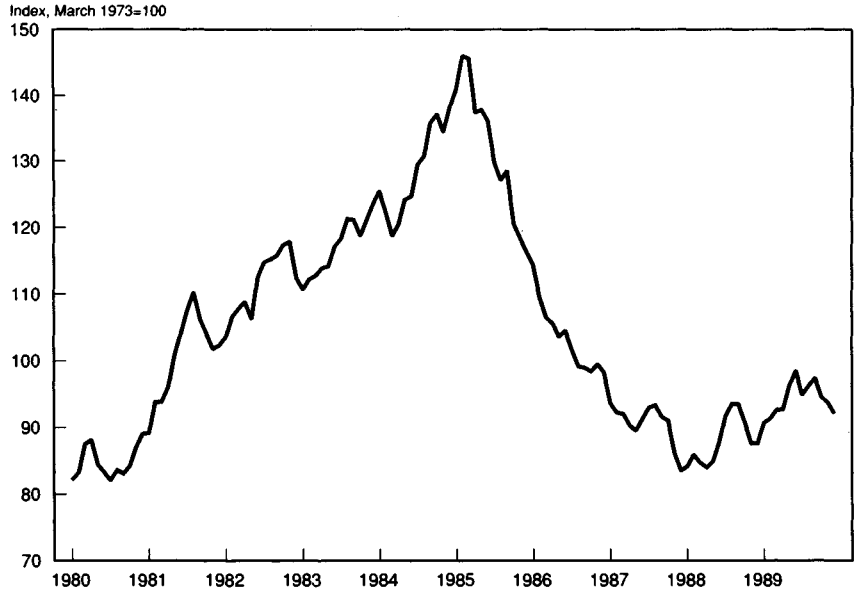
U.S. policy also affected the global economy. In particular, the U.S. economic recovery helped spur growth worldwide in the wake of the deep 1981–82 recession. At the same time, the increased demand for funds in international markets as the world economy recovered contributed to a rise in world interest rates, which added to the difficulties developing countries faced in meeting their external debt obligations.

EXTERNAL BALANCE AND EXCHANGE-RATE OBJECTIVES

To what extent should exchange-rate stability and external balance—current account and trade balance—be objectives of macroeconomic policy? The short answer is that both should be of concern to policymakers because, in an open economy, both are related to the fundamental objectives of economic growth and rising living standards. Like price instability, current account imbalances and exchange-rate fluctuations—especially large, persistent misalignments—may jeopardize efficient resource allocation and, thus, economic growth.

Chart 3-3

U.S. REAL EFFECTIVE EXCHANGE RATE. The real value of the U.S. dollar appreciated sharply in the first half of the 1980s before depreciating and then stabilizing at lower levels.



Note: Data are monthly.
Source: Board of Governors of the Federal Reserve System.

External Imbalance

Current account deficits reflect an excess of investment over domestic saving. If that gap resulted from unusually strong investment, it would not generally be considered a problem. Inflows of foreign savings can contribute to higher investment, spurring economic growth and putting in place productive capacity to service the debt in the future without slowing the growth of domestic living standards. A reason for concern over the rise in the U.S. current account deficit from 1982 to 1987 was that it primarily reflected a decline in domestic saving. As saving has revived, the deficit has been cut by more than 30 percent since the mid-1987 peak.

An aggregate current account deficit implies that imports exceed exports in some sectors, and some of these sectoral trade imbalances are often large. Competitively priced imports may threaten domestic production and fuel pressures for protectionist trade policies, such as import tariffs or quotas. Yielding to these pressures impedes the efficient allocation of resources and harms consumers. Taken to an extreme, increased barriers to trade in one country result in a retaliatory trade war that can lead to worldwide reces-

sion. This danger provides a second reason for concern about large and persistent external imbalances.

Exchange Rates

Chart 3–3 shows the value of the dollar relative to currencies of the main U.S. trading partners since 1980. The graph shows both short-term volatility and sharp longer term swings in the value of the dollar. In asking whether policymakers should be concerned about exchange-rate changes, it is important to distinguish between the two.

Short-term volatility of the major currency-exchange rates has been much greater during the floating exchange-rate period since 1973 than during the previous two decades of the Bretton Woods System of fixed but adjustable rates. Although this fact is widely recognized, the problems associated with short-term volatility may be overstated. Exchange rates are the prices of assets (U.S. dollars relative to other currencies). Short-term interest rates and other asset prices, such as stock prices, are even more volatile than exchange rates. Furthermore, short-term volatility should not disrupt production decisions, such as where to purchase imported inputs, provided that longer term trends are predictable. Forward and futures markets can be used to hedge against short-run uncertainties. Also, empirical studies have found very little evidence that short-term exchange-rate volatility has a significant influence on the volume of international trade, once the influence of other factors (including real incomes and the relative prices of traded goods) is taken into account.

Concern about pronounced medium-term swings in exchange rates is based on the perception that they reflect misalignments relative to long-term, sustainable exchange-rate levels. Although there are disagreements about which exchange-rate level is appropriate to use as a benchmark, swings in the 1980s were so large that they were widely believed to represent misalignments. Unlike short-term variance, medium-term misalignments can have a profound effect on the allocation of resources. Large changes in the value of the dollar relative to the Japanese yen, for example, have led to large changes in prices of American goods relative to prices of Japanese goods. These large relative price movements, and uncertainty about how quickly they might be reversed, may complicate decisionmaking for both producers and consumers.

An appreciation of more than 60 percent, such as the U.S. dollar experienced in the mid-1980s, can erode the international competitiveness of domestic exporters and import-competing firms, putting firms out of business and generating unemployment. At the same time, goods and services produced abroad become bargains to domestic consumers, helping foreign firms to capture a larger share of the home market. Even if the appreciation is fully reversed

within a few years, domestic firms may find it difficult to recapture the market share they held before the exchange-rate cycle. Macroeconomic policies that avoid large exchange-rate swings help to create an environment conducive to long-term growth.

MACROECONOMIC POLICY TOOLS

Monetary and fiscal policies influence external balances and exchange rates. For example, monetary policy can be used to maintain fixed exchange rates—at least temporarily. Monetary and especially fiscal policy can alter domestic saving and investment, and thus the current account balance. External balance and exchange rates are determined by a wide variety of factors, however, including policy and economic performance in other countries. Exchange-rate determination is especially complex. There is some tendency for high interest rates in the United States relative to those abroad to be associated with a stronger dollar. However, political events, credibility of policies, and news about economic performance at home or abroad also influence the value of the dollar. Furthermore, objectives of policymakers may come into conflict. A more expansionary monetary policy would tend to bring down the value of the dollar, but often with the cost of increased domestic inflation.

Exchange-Market Intervention

Policymakers can intervene directly in foreign exchange markets by buying and selling currencies. Following the dollar's peak in February 1985, policymakers used this tool more actively. However, the amounts of dollars sold or purchased by authorities are small relative to the total daily sales and purchases in the foreign exchange market, approximately $650 billion per day.

As a hypothetical example of foreign exchange intervention, suppose the dollar were overvalued. The Federal Reserve or the Treasury could sell dollars and purchase Deutsche marks in attempting to decrease the value of the dollar. When such actions are not permitted to affect the level of bank reserves, they are said to be "sterilized" intervention. The Federal Reserve can always sterilize any change in bank reserves through offsetting transactions in Treasury securities. If the Federal Reserve made no transactions to offset, or sterilize, the increase in bank reserves from a sale of dollars, the intervention would be called unsterilized. Unsterilized interventions, in effect, constitute monetary policy actions. The general practice of the Federal Reserve has been to sterilize intervention operations.

There is little disagreement that expansionary monetary policy tends to depreciate exchange rates. Most of the recent intervention by major central banks has been routinely sterilized, however, and some analysts have raised doubts about the effectiveness of steri-

lized intervention—at least as an instrument that produces lasting changes in exchange rates. Arguments in support of the effectiveness of sterilized intervention hinge largely on the fact that official transactions may signal the future course of domestic policy. If other market participants recognize, believe, and act in response to the signal, then sterilized intervention can be an effective tool for moving exchange rates.

What has been the actual experience with intervention in foreign exchange markets? Most studies have concluded that sterilized intervention is unlikely to be an effective tool for moving exchange rates in directions that are inconsistent with underlying fundamentals of policy and performance—except perhaps in the very short run. The effects are larger and more lasting if backed by other policy changes such as interest rate adjustments, which help to make the signal credible. Also, coordinated intervention by monetary authorities in more than one country seems to have a greater and more sustained effect on exchange rates than intervention by a single country alone.

INTERNATIONAL POLICY COORDINATION

Recognition of the increasingly integrated global economy and dissatisfaction with economic performance, including exchange-rate swings and persistent external imbalances, have precipitated calls for more consistent and compatible policies among major industrial countries. Since 1985, these countries have strengthened the process for international coordination of policies.

What Is Policy Coordination?

There is no single definition of international policy coordination. To some, the term has a rather lofty meaning: jointly determined policy actions in support of mutually agreed-upon objectives. However, national objectives will often differ substantially or conflict with one another. A more limited definition of policy coordination would be: a process through which national policies are modified in recognition that economic performance is interdependent.

Neither definition need imply that countries follow identical policies. Countries have different technologies, tastes, and political institutions. They may also be subject to different economic shocks. For example, many economists believe that a coordinated effort to reduce external imbalances while avoiding a slowdown in real growth worldwide would include fiscal contraction in the United States, which has a current account deficit, and an expansionary fiscal stance in Japan and West Germany, which have current account surpluses. Thus, even if countries adopt the same policy objective, actual policy settings are likely to differ.

Is Macroeconomic Policy Coordination a Good Idea?

The arguments in favor of policy coordination stress that the effects of one country's policies spill over to other countries. This spillover is especially true for the larger industrial economies, but even here, the linkages are stronger among some countries, such as those within Western Europe, than for others. However, policymakers may not take these spillover effects into account in weighing the costs and benefits of policy options. Coordination can improve domestic policy decisions by helping policymakers to consider the global implications of their actions. Small developing countries are likely to benefit greatly from policy coordination among the developed countries, if such coordination is successful in increasing world growth. At the same time, the most important aspect of promoting noninflationary growth in any one country is that it pursue sound domestic monetary and fiscal policies. Thus, macroeconomic policy coordination can also make a positive contribution by encouraging individual countries to pursue the proper credible and systematic policies at home.

International cooperation is important in other areas as well. In particular, agreement on rules for trade improve the functioning of the international trading system, with widespread benefits. The United States places a high priority on its active participation in the General Agreement on Tariffs and Trade, and is pursuing further international cooperation to advance mutual concerns about the environment.

What Is the Policy Coordination Process?

Since 1975, the leaders of the seven largest industrial economies (the United States, Japan, West Germany, France, the United Kingdom, Italy, and Canada) have met in annual economic summits to discuss economic issues of common concern. Over time, recognition of the growing integration of world goods and financial markets and shared concerns have led to the realization that further policy cooperation could be mutually beneficial.

The divergence of economic policies and performance among the major industrial countries after 1982 contributed to the sharp rise in the value of the dollar and to the emergence of large trade imbalances. In 1985, responding to shared concerns over these developments, finance ministers and central bankers from the United States, Japan, West Germany, the United Kingdom, and France (collectively called the G–5) met in New York. They agreed to work to strengthen the process for coordinating macroeconomic policies, to bring down the value of the dollar, and to reduce trade imbalances while maintaining noninflationary growth. In 1986, the G–5 together with Canada and Italy (the G–7) initiated regular meetings of their finance ministers and central bank governors. The

purpose of these G–7 meetings is to promote more consistent and compatible economic policies among members so as to work toward sustained global growth with low inflation, reduced trade imbalances, and greater exchange-rate stability.

The policy coordination process that evolved during the 1980s has two main elements. First, the G–7 has instituted a regular, high-level dialogue on economic policy, performance, and objectives. Second, the G–7 has developed economic indicators to provide a framework for multilateral surveillance of their economies and to help monitor the international effects of national policies. This process is supplemented through frequent additional discussions in other forums, notably the International Monetary Fund, the Organization for Economic Cooperation and Development, and the Bank for International Settlements.

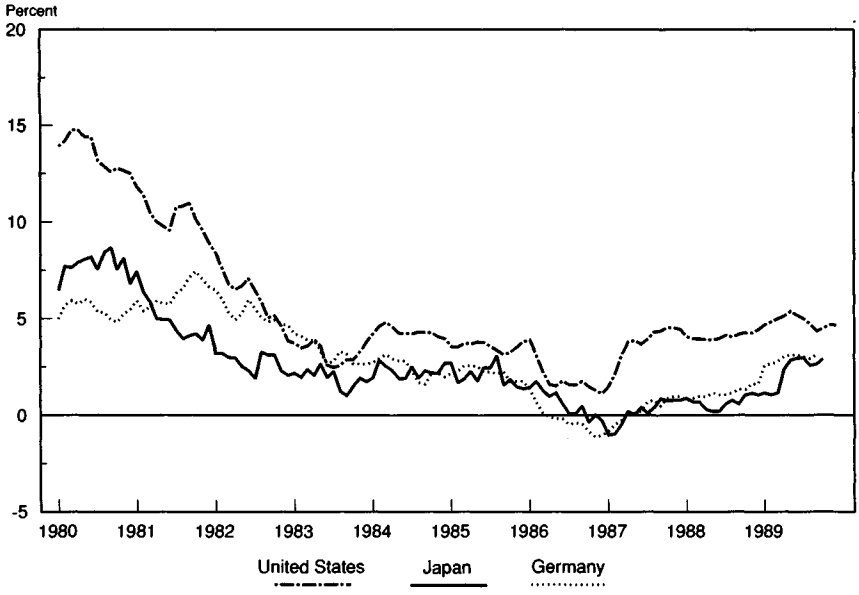
To What Extent Has Policy Coordination Been Useful?

To what extent has the G–7 process achieved its goals? Some observers note the continued fluctuations and last year's appreciation of the dollar and the persistence of trade deficits in the United States and surpluses in West Germany and Japan and conclude that policy coordination has been a failure. This view is extremely narrow and misleading. The economic policy coordination process has promoted more consistent and compatible policies among the major countries, helping to sustain the expansion of output and employment while reducing external imbalances. A regular dialogue on key economic policy issues now exists. The use of indicators has helped to focus their discussions on key linkages between economies. Further, the discussions have highlighted the importance of structural measures, such as lowering marginal tax rates, decreasing regulation, and reducing barriers to trade, to promote greater efficiency and openness, thereby facilitating noninflationary growth and adjustment of external balances.

Over the past decade, a substantial convergence in the longer term orientation of monetary policies among G–7 members has occurred. This convergence reflects increased mutual awareness among central bankers of the desirability of reducing inflation rates and moving toward price stability. As shown in Chart 3–4, this convergence has resulted in an overall reduction in the average inflation rate and the range of inflation rates among West Germany, Japan, and the United States. With this awareness, there was also a common response to the indications of inflation resurgence in 1988. At the same time, international discussions have reflected concern that the effects of several countries responding together might result in too great a response. Such discussion is a natural part of the evolving policy coordination process and would have been more difficult just 15 years ago.

Chart 3-4

CONSUMER PRICES. During the 1980s consumer price inflation rates declined and converged among industrial countries.



Note: Data are 12-month changes.
Source: Department of Commerce.

SUMMARY OF PRINCIPLES FOR INTERNATIONAL MACROECONOMIC POLICIES

The increased internationalization of the U.S. economy has important implications for monetary and fiscal policies and helps shape the principles that should form a basis for such policies.

- The United States is part of a global economy that is becoming increasingly integrated. This development implies both that policymakers must take international linkages into account when they design monetary and fiscal policies and that there are potential gains from working together.
- Credibility, highlighted in the previous discussions of monetary and fiscal policy, is equally important in this context. Consistently following appropriate policies, both in the United States and abroad, fosters an environment conducive to saving, investment, and economic growth.
- The ultimate objectives of monetary and fiscal policy are economic growth and rising living standards, *not* exchange-rate stability or current account balance per se. Nonetheless, reasonably stable exchange rates and sustainable external bal-

ances are important aspects of a healthy economy. Particularly when these variables get far out of line, they should be of concern to policymakers.

- The best means to adjust external imbalances and to avoid dollar misalignments is to alter the fundamentals. In the United States, such measures should include reducing the Federal budget deficit and taking steps to raise private saving. Sterilized intervention by itself is not an effective means for altering long-run exchange-rate levels.
- International macroeconomic policy coordination has had some important successes over the past 5 years but further progress could be made. The G–7 coordination process has been most effective in coordinating policies to respond to shared concerns.

FINANCIAL EVOLUTION AND FINANCIAL SOUNDNESS

A highly developed financial system is central to a modern economy. Financial institutions perform the vital function of channeling savers' funds into the hands of those who wish to use the resources for investment. When these institutions do their job well, funds flow to their most productive uses, stimulating growth and improvements in the standard of living. One of the most important challenges facing policymakers over the next several years is to ensure that the financial system continues to adapt efficiently to both domestic and international competitive challenges. At the same time, policymakers must take care to preserve the fundamental soundness of the system, and to prevent it from imposing unnecessary costs on taxpayers.

BANKING-TYPE INSTITUTIONS AND THEIR COMPETITORS

Broadly speaking, savers' funds can be allocated to investors in three ways. The first is through banking-type financial intermediaries such as commercial banks and savings and loans. The second is through nonbanking financial intermediaries such as pension and mutual funds. The third way is for funds to move directly from individual lenders to borrowers via securities markets. All three have advantages. Banking-type institutions, however, have historically received special attention from policymakers because they hold the bulk of the funds used by the public to make payments—deposits on which checks can be written. For this reason, preserving the integrity and stability of the banking system is essential to the daily functioning of the economy.

In recent years, the banking industry has been buffeted by unanticipated problems with loans to developing countries and to the oil

and real estate industries, as well as by increased competition from other types of financial institutions, such as securities firms. The increased competition comes from both foreign and domestic sources and shows no signs of abating; the innovation of financial products and the globalization of financial services continues at a rapid pace.

While these competitive developments enhance efficiency, they are worrisome to many observers in view of the government's enormous stake in the financial sector. As the thrift industry crisis has illustrated, the combination of poorly designed policies and sharp changes in the external environment can be extraordinarily costly.

In the larger commercial banking sector, where the Federal Deposit Insurance Corporation insures almost $2 trillion of deposits, difficulties have also arisen. For example, in 1988, the commercial banking industry suffered bad debt losses (also known as charge-offs) on almost $18 billion of loans, representing 0.97 percent of loans outstanding. Before peaking in 1986, this ratio had climbed steadily over the decade—in 1980, it stood at only 0.36 percent. Although the problems in commercial banking are not comparable in scope with those in the thrift industry, they do underscore the importance of sound regulatory and supervisory policies to ensure that taxpayers are not asked to bear undue costs.

Thus, policymakers must deal with a difficult tension: many of the banking industry's troubles can be traced to increased competition from other providers of financial services, but policies that would protect banks from competition would impose large costs on their customers and on the economy as a whole. For example, restricting competition in financial services could lead to lower returns to savers, higher borrowing costs for companies, and a concomitant decrease in investment. Furthermore, any such restrictions may be unworkable as international competition increases. In planning more sensible policies, it is useful first to understand the basic economic functions of banks and of their principal competitors, the securities markets.

The Economic Role of Banks

Banks have traditionally performed two distinct economic services, one on the asset side of their balance sheets, and one on the liability side. On the asset side, banks produce and monitor information that is used to evaluate the returns on investment projects. When such information production is expensive, it is more efficient to have it carried out in a centralized institution (i.e., a bank) than to have the work needlessly duplicated by a large number of securities market participants.

On the liability side, banking-type institutions provide a medium of exchange by issuing claims (checking accounts) that are immediately payable on demand, and that can be used by consumers and

firms for transactions purposes. Unlike money market mutual funds, banks issue these claims while simultaneously devoting some of their investment portfolios to illiquid assets. Consequently, bank instability can pose a serious threat to the financial system and to the functioning of the broader economy. If many of a bank's depositors demand immediate repayment and a run begins, the bank will be unable to satisfy its contractual obligations. Furthermore, a sharp drop of bank liabilities, if not offset by other factors, would result in a decrease in the money supply, which could cause a recession. The U.S. experience with bank panics in the late 19th and early 20th centuries was the motivation for the current system of deposit insurance, as well as for the Federal Reserve's role as lender of last resort to banks. This system has worked very well in preventing further panics, although it has become apparent that deposit insurance can also encourage excessive risk-taking by institutions that do not have enough of their own capital at stake.

While banking-type institutions have clear economic advantages, allocating credit directly through the securities markets also has benefits. First, circumventing the intermediary reduces costs. These costs take the form not only of brick-and-mortar overhead for banks, but also of reserve requirements, capital requirements, and deposit insurance premiums, which act as a "tax" on intermediated, or bank-channeled credit. Second, securities markets create assets that, unlike many bank loans, are easily traded among a wide array of investors seeking to diversify their portfolios.

CHANGES IN THE FINANCIAL INDUSTRY

Many recent developments in the financial system can be understood in the context of a single trend: an increase in the appeal of direct, or securities-channeled, credit allocation relative to fully intermediated credit allocation.

Examples of the growing importance of direct credit abound. On the lending side, commercial paper—uncollateralized borrowings in the open market—has made large inroads into commercial banks' traditional business of short-term lending to industrial corporations. The volume of nonfinancial corporations' commercial paper outstanding has grown from $7 billion in 1972 to $125 billion today, an annual rate of increase of 18 percent. Over the same time, bank commercial and industrial loans have grown at only 10 percent per year. Partly as a consequence, banks' market share of short- and intermediate-term credit extended directly to domestic nonfinancial companies has fallen from 82 percent to 49 percent.

A similar phenomenon has occurred in mortgage finance. Mortgage-backed securities allow home loans to be purchased directly by investors, rather than being funded by thrifts or banks. These securities were developed in the mid-1970s, and by the end of 1988,

approximately $810 billion in these securities were outstanding. More than one-third of the financing for mortgage loans on one- to four-family homes is currently channeled through the mortgage-backed securities market.

The high yield, or "junk" bond market, provides another example of the move to direct finance. Before this market's development in the late 1970s, only the relatively small number of companies with investment grade (top-quality) debt ratings of BBB and above were able to access the public markets for debt. Lesser known or riskier borrowers had to rely on banks or privately placed debt. By 1988, such noninvestment grade companies had issued more than $130 billion in new public debt.

Several structural factors, notably the revolution in information and communications technology, have produced this shift toward directly allocated credit. With information costs reduced, banks have found that one of their principal comparative advantages—efficient production of credit information—is no longer as valuable for some types of credits as it used to be.

Impact of Innovation on Bank Profits

Whatever their causes, the innovations of the past several years have had a profound impact on the business of banking. Overall, bank profitability has been falling modestly. The average return on assets for all banks was 0.79 percent in 1980; over the period 1986 to 1988, it averaged 0.52 percent. This broad trend, however, does not fully capture the changes in the industry's economics. Variations between the performance of successful and unsuccessful institutions have become much more pronounced. For example, the return on assets for banks in the lowest 5 percent of the industry fell precipitously over the same interval, dropping from 0.28 percent in 1980 to an average of -2.18 percent during 1986 to 1988. In many cases, the largest banks (known as money center banks) experienced more pronounced declines in profitability than their smaller counterparts, partly as a result of their large exposure to developing country loans. These banks' traditional customers had included the largest and most well-known corporations, for whom the shift to securities market credit was often accomplished with relative ease.

ADAPTATION TO CHANGE

The widening variations in profitability across banks highlight a fundamental economic reality: as competition intensifies, some banks will find that the range of activities where they retain a distinct competitive advantage has narrowed. Many banks still maintain an economic advantage in some traditional lines of business, such as consumer lending, where information costs are still rela-

tively high, and where banks and thrifts in the aggregate have maintained their market share.

New Lines of Business for Banks

Some banks have also successfully redeployed old skills into new lines of business that have been spawned by innovation. The rapid growth of standby letters of credit (SLCs) illustrates this trend. Bank SLCs are often used to guarantee the creditworthiness of commercial paper issues, particularly those of less well-known borrowers. In this way, the provision of credit to corporate borrowers is efficiently specialized into two component parts—credit analysis and funding. Banks continue to perform a portion of the credit analysis, and bear a contingent responsibility should the borrower be unable to repay. At the same time, the loan is funded more cost-effectively through the public market. Thus, unlike a conventional loan, an SLC does not appear as an asset on a bank's balance sheet.

The volume of bank SLCs grew at a 26-percent annual rate from 1980 to 1988. SLCs are disproportionately important for money-center banks, which have been most affected by the loss of traditional lending customers. More generally, other activities have been specialized in such a way that banks only participate in an off-balance-sheet fashion. This change is reflected in the increasing relative importance of fees to banks. From 1984 to 1988, the ratio of noninterest income to assets for all banks rose from 1.09 percent to 1.47 percent. The increase was much more dramatic for money-center banks, which saw the ratio rise from 1.15 percent to 2.11 percent. As the above discussion suggests, valid economic reasons support the shift by banks to off-balance-sheet activities. Still, some have expressed concern about the risks involved, particularly in light of the fact that current regulations do not impose capital requirements or deposit insurance premiums on all of these activities. (As discussed below, recently adopted international risk-based capital standards do include letters of credit and thus mitigate this concern.)

Efficiency of Industry Adaptation

In an unregulated industry, the market mechanism can be relied on to carry out adjustment efficiently. Indeed, the widening gaps between strong and weak firms that accompany intensified competition would be seen as a healthy sign of evolution—those that found a niche of competitive advantage would prosper, while those that failed to adapt would quickly find themselves in trouble. Unfortunately, deposit insurance can hamper the ability of the banking industry to adapt efficiently to changes in the competitive environment. Normally, firms that stop being profitable are subject to discipline from their capital suppliers—they are no longer able to raise money to reinvest in unprofitable lines of business. In this

way, excess capacity is flushed from an industry. However, deposit insurance allows banks to keep raising funds even when these funds are being devoted to activities that are not economically viable.

According to this line of reasoning, the deterioration in bank credit quality seen in recent years (as measured, for example, by the increases in loan chargeoffs) may not simply reflect one-time adverse shocks in particular sectors and geographic regions. It may in part be systemic, and attributable to the interaction of intensified competition and lack of capital market discipline. It is interesting to note that the growth in loan chargeoffs has occurred while net interest margins for banks have remained fairly stable. In other words, banks have suffered from more bad loan experience, but in the aggregate have not received increased compensation from borrowers. One interpretation of this evidence is that some banks have reacted to heightened competition in part by loosening their credit standards and offering better terms to lower quality borrowers.

From the perspective of a policymaker, it is extremely difficult to identify *a priori* when banks are pursuing activities where they add real economic value as opposed to ones where they do not earn sufficient profits to justify continued investment. A line of business that is wholly appropriate for one institution may be a money-loser for another. Often it can take several years for the costs and benefits to show up in the data in such a way that they are visible to an outsider.

POLICY ACTIONS AND PROPOSALS

The events of the past few years have prompted some important changes in banking policy. In addition, other options are receiving increased attention.

Risk-Based Capital Requirements

Risk-based capital requirements are an example of a policy measure that addresses the issues discussed above. In the summer of 1988, 12 industrial nations, including the United States and its major trading partners, agreed to phase in a risk-based capital system by the end of 1992. The essence of the system is that banks investing in riskier types of assets would be made to hold more capital against such assets, that is, assets would be "risk-weighted" for the purposes of calculating capital requirements. Two other noteworthy features are that: (1) some off-balance-sheet items such as SLCs would also be added to risk-weighted assets, and hence would require a capital cushion of their own; and (2) banks from the 12 participating countries would, for the first time, be subject to common minimum capital standards.

By making required capital a function of risk, these rules increase the incentives for self-monitoring among banks choosing the most aggressive strategies. Also, the risks associated with off-balance-sheet activities are now explicitly recognized. This diminishes the likelihood that banks will want to engage in such activities simply as a way to do business without increasing their capital base.

While the self-disciplinary benefits of increased capital are well understood, risk-based requirements also allow banks whose comparative advantage lies in safer activities—gathering deposits from smaller, retail customers, for example—to focus on such a niche without being unduly penalized for doing so. Were all institutions to face the same high capital requirements, relatively safe ones would find it difficult to earn a satisfactory return, and might even feel pushed toward riskier activities in an attempt to boost returns.

Finally, the international nature of the accord recognizes that although not all bank product lines should be treated the same, all banks offering the same product lines should. Maintaining a level regulatory playing field across different countries is an important goal, and will become increasingly crucial as cross-border investment in financial services continues. Indeed, the need for an international approach to financial policy extends well beyond banking regulation, and includes such key objectives as harmonizing the clearing and settlement procedures for securities transactions.

The risk-based capital agreement is certainly not a panacea. The risk categories involved are quite broad, and do not capture true economic risk precisely. For example, there is no consideration of risk caused by movements in the general level of interest rates. Nonetheless, the accord is a step in the right direction. Improvements in the quality of information available to regulators—perhaps through the adoption of market-value accounting techniques—could lead to better risk measurement and further benefits from such an approach.

Risk-Based Deposit Insurance Premiums

A similar measure that is often discussed is the use of risk-based deposit insurance premiums. Institutions currently pay a flat fee per dollar of deposits for deposit insurance, irrespective of the riskiness of their portfolios. Making the cost of insurance vary in a market-like fashion, with the risk assumed by the insurer, would further improve the incentives of banks with respect to choice of investments.

Both risk-based capital requirements and risk-based deposit insurance programs illustrate an important general principle: many of the concerns outlined above can be addressed with a system that allows institutions to opt into a set of rules that best suit their strengths and strategies. In the above examples, banks can choose

whether to adopt high- or low-risk strategies, and are then presented with capital requirements or insurance premiums appropriate for the strategy selected. This opting feature is consistent with the goal of encouraging institutions to focus on the activities that they do best.

Thrift Industry Legislation

The recent thrift legislation, the Financial Institutions Reform, Recovery, and Enforcement Act of 1989, also contains such opting features. The legislation curtails the direct powers of savings and loan institutions (S&Ls), requiring them to focus more narrowly on their traditional areas of expertise, deposit-taking and home mortgage lending. At the same time, the act permits separately capitalized affiliates of thrifts to engage in a broad range of activities so long as these activities are not funded with insured deposits.

The new law also recognizes that the traditional direct product lines alone may no longer be profitable for all S&Ls, and provides for a market-based transfer of S&L assets into the less-restrictive commercial banking regulatory system: S&Ls can either be acquired by existing commercial banks, or, with some costs, can choose themselves to switch to a commercial banking charter.

The Need to Modernize the Financial Framework

The dramatic changes of recent years have exerted pressure on the Nation's Depression-era financial framework. Financial institution law consists of half-century-old statutes and ad hoc deregulation by courts, States, and Federal regulators. The result is a complex web of overlapping rules that can potentially create inequities and market inefficiencies.

One example is the Glass-Steagall Act, a 1933 law designed to separate investment banking from commercial banking. Although recent rulings by the Federal Reserve and the Comptroller of the Currency have eased certain restrictions, banks are still constrained in a number of activities, including the underwriting of corporate equity securities. In the current environment, these activities may represent a natural way for some banks to redeploy existing assets and skills, with concomitant benefits for the economy.

While some favor abolishing Glass-Steagall constraints, others have expressed concerns—namely, that some institutions might take advantage of broadened powers to diversify in an uneconomic fashion, and that the costs of such mistakes may ultimately be borne in part by Federal deposit insurance. These concerns underscore the fact that Glass-Steagall initiatives, and those related to deposit insurance, cannot be considered separately from one another. Rather, they must all be seen as coherent parts of a larger

effort—an attempt to reevaluate and modernize the Nation's laws to compete in a global context.

There is no consensus on a single paradigm for modernizing financial regulation, although several models have been proposed. A glance at other countries reveals a diversity of approaches to issues such as deposit insurance and the separation between banking and securities activities. Moreover, many countries are in the midst of financial reforms themselves, reforms that may have important implications for global competition in financial services.

Clearly, any sweeping proposals to revamp the structure of financial regulation would require study and refinement before they could be seriously considered for implementation. The Department of the Treasury is now coordinating a detailed study of Federal deposit insurance, as mandated in the thrift legislation. The time may be ripe for further work that provides a fundamental reassessment of financial policy, particularly if the analysis is grounded in the sound logic of encouraging efficient, focused competition among financial institutions.

SUMMARY OF PRINCIPLES FOR FINANCIAL REGULATION

As the above analysis makes clear, no easy solutions exist to the difficult problems surrounding financial regulation. Nevertheless, important policy principles emerge:

- Continued competitive pressures on banks from new products and new institutions (domestic as well as foreign) are both desirable and inevitable. Predicting exactly the areas in which these pressures will next manifest themselves is difficult. Thus, regulation should create an environment that is hospitable to a broad range of adaptive behavior by banks.
- Efficient adaptation entails not only entering profitable new lines of business, but also exiting old ones that are no longer attractive, and avoiding inappropriate new ones. Regulation must not encourage institutions to do business in areas where they would not otherwise be competitive.
- A great deal of information is needed to assess precisely which activities are profitable for a given institution. Thus, rather than relying on an inevitably arbitrary list of prohibited activities to guide decisions, it may be preferable to let institutions themselves make the assessments. If this is to be done, however, it is critical that incentives be properly aligned—institutions must be forced to bear the costs of their mistakes.
- Rules should be applied consistently across all types of institutions undertaking the same activities. At the same time, it can make sense to have different rules for different activities, and

to allow institutions to opt for those rules that best fit their competitive strengths.

SUMMARY AND CONCLUDING COMMENTS

Macroeconomic policies can make substantial contributions to achievement of the Nation's economic goals if these policies are formulated appropriately. Experience and research have indicated that a properly chosen systematic policy program is more likely to perform well than a short-sighted discretionary approach to policy. Unpredictable changes in economic and financial relationships imply that appropriate rules for policy in some circumstances are rather general. In such cases, when it is inappropriate to specify in advance how the tools of policy will be adjusted in reaction to particular events, policy credibility is especially useful. Credibility that policy will achieve its ultimate goals helps to bring about a better economic outcome in the face of unpredictable change by reducing uncertainty about future developments and making it easier for economic decisionmakers to plan for the future.

Increased credibility in one area of economic policy can reinforce credibility in another area. For example, public belief that the deficit will be reduced according to the Gramm-Rudman-Hollings targets would help build credibility that monetary policy will succeed in achieving low inflation.

The increasingly integrated world economy implies that policymakers must take careful account of international linkages in designing macroeconomic policies. The international macroeconomic coordination process can help policymakers work toward sustained global growth with low inflation, reduced trade imbalances, and greater exchange-rate stability.

The pace of innovation in financial markets remains rapid. Maintaining a healthy economy and efficient markets for capital allocation will require that policies enhance rather than constrain the ability of financial institutions to adapt to change.

Macroeconomic policies should emphasize long-run economic performance. Thus, these policies should be directed at strong economic growth through increased national saving and investment, controlling and gradually reducing inflation, and fostering a safe and competitive financial marketplace. Such policies will ensure both continued leadership by the United States in the world economy and rising living standards for American families.

CHAPTER 4

Investing in America's Future

A MAJOR CHALLENGE of the 1990s will be to increase the rate at which the productive capacity of the U.S. economy grows. Increasing the rates of growth of productive capacity and living standards will require higher rates of saving and investment. Yet longstanding tax, spending, and regulatory policies impede national saving and investment. Partly, if not entirely, because of these government policies, Americans save and invest a smaller fraction of gross national product (GNP) than their counterparts in other industrialized countries.

The Federal Government cannot, alone, produce dramatic increases in capacity growth. But it can foster an environment conducive to rapid long-term economic growth. *The President is committed to maintaining America's economic leadership, and has thus made it a central element of his economic program to remove impediments to saving, investment, and innovation.*

A higher rate of growth will significantly increase living standards and expand opportunities for both current and future generations. The cumulative effect of even a modest increase in the economic growth rate is enormous. Italy had only 40 percent of the per capita income of the United Kingdom in 1870, but, with an annual growth rate about one-half percentage point higher, overtook the United Kingdom by the 1980s. Growth rate differences of fractions of a percentage point have a substantial effect on how rapidly living standards increase from one generation to the next.

Economic growth can shape society more broadly as well. Rapid growth creates good jobs, thereby increasing economic opportunities for everyone. The poor benefit not only from these new economic opportunities, but also from the greater willingness of others to share their gains. Higher economic growth can reduce the potential for conflicts between generations. As the baby-boom generation begins to reach retirement age early in the next century, the ratio of retirees to workers will rise dramatically. Improving the productive capacity of the economy will permit the United States to accommodate more easily the needs of the future elderly population.

The prospects for rapid, long-term economic growth in the United States depend on investment in factories, equipment, knowledge, and skills. The rate of investment in the United States

is below that of other major industrialized countries, in part because the United States saves at a lower rate than other countries. A higher rate of investment will increase the competitiveness of the U.S. economy. Reducing the bias toward current consumption will increase saving, thereby raising the accumulation of capital assets—both domestic and foreign—by Americans. This accumulation in turn will expand the resources available for future consumption. Raising the rate of national saving is essential to fostering greater increases in future standards of living.

Government policies can have a major impact on the environment for economic growth. As stressed in Chapter 3, credible, stable monetary and fiscal policies are a key to reducing uncertainty and to promoting long-term growth. Tax and spending policies designed to remove impediments to working, saving, investing, and innovating can have a strong positive influence on economic growth. For example, reductions in marginal tax rates and broadening of the tax base, especially after the Tax Reform Act of 1986, have reduced the impact of tax distortions on economic decisions. Reducing the uncertainty in the legal system, removing barriers to the free flow of capital across international borders, and adopting regulatory policies that maximize market flexibility and encourage innovation can all improve the climate for growth.

DETERMINANTS OF GROWTH

The Nation's productive capacity depends on the level of technology, the supply and quality of capital, and the number and skills of workers. Increased utilization of labor and capital translates quickly into growth in the output of goods and services. As in most economic expansions, much of the relatively rapid growth since the recovery began in 1982 can be attributed to increases in the employment and utilization of existing resources, although productivity growth has also played a role and, indeed, has improved since the 1970s. Because fewer opportunities to increase utilization of available resources remain, the economy will need to rely more heavily on other sources of growth in the 1990s.

TECHNOLOGICAL CHANGE

Technological advances improve the productivity of inputs and the quality of output, thereby increasing the rate of economic growth and raising living standards. Innovations—in the form of new products, new machines, new production techniques, and new communication and transportation methods—exert an important beneficial effect on growth. Entrepreneurs, taking substantial risks (and sometimes failing), often translate new ideas into new products or processes. The Administration has advanced policies de-

signed to spur investment in research and innovation and to provide a more favorable environment for entrepreneurial activity and new business formation.

INVESTMENT IN PHYSICAL CAPITAL

Investment is a second major vehicle for increasing the rate of economic growth. Increases in physical capital—such as tools and machinery—make the labor force more productive, as each worker has more capital to use. Further, new investment permits technological improvements to permeate the U.S. economy, providing each worker with better capital. Investment is also needed to start the new business ventures that help to give the U.S. economy its vitality. Sustained high investment leads to higher productivity, higher wages, and higher standards of living.

The cost and availability of financial capital are critical parts of the investment climate. Increases in the total supply of funds to finance investment decrease the cost and increase the availability of capital. Although domestic saving has provided the bulk of funds for U.S. investment in recent years, foreign capital inflows—reflecting in part the attractiveness of U.S. investment opportunities—have provided about one-sixth of investment financing. Increasing the rate of national saving will provide more funds for investment and, as discussed below, should help to reduce the U.S. trade deficit. For these reasons, removing impediments to saving is a high priority of the Administration.

INVESTMENT IN HUMAN CAPITAL

A third major source of growth is raising the number of workers and improving their skills. Efforts by workers to increase their skills through training and education is investment in human capital. A highly skilled work force and a flexible labor market have long been basic economic strengths of the United States. But the increased complexity and competitiveness of the world economy demand new skills, greater training, and additional flexibility. Chapter 5 analyzes the challenges and opportunities for growth in human capital in the next decade.

TECHNOLOGICAL PROGRESS AND ECONOMIC GROWTH

Technological change has played a central role in economic growth. Many famous innovations—in agriculture, textile manufacture, transportation, communications, and electronics—have played an important role in economic growth and have led to a transformation of society over the past two centuries. The combined effect of a host of less visible minor improvements in product designs and

production techniques has been equally important. There is a role for government policy in financing technological progress because the full benefits of research are rarely captured solely by the firm or individual undertaking the research. Rather, additional benefits accrue to society as a whole. Because these additional benefits cannot be captured as part of the private-sector return, there is a natural tendency for private markets to do too little research and development from society's broader viewpoint. The Federal Government can offset this tendency through policies to raise national spending on research and development.

FACTORS THAT AFFECT TECHNOLOGICAL PROGRESS

Many people view technological progress as the result of work by solitary scientists or inventors motivated solely by curiosity. Yet ample evidence suggests that economic factors influence innovation. Thomas Edison, after unsuccessfully trying to sell his first invention (an automatic vote counter), vowed that he would work only on ideas for things that people would buy. The size of the potential market determines the return on invention and therefore influences investment in applied research. Even in universities, the availability of funding influences the direction of basic research.

But invention is only the first step in technological progress. To raise economic growth, an idea must be translated into a marketable product or service, applied on a production line, or built into a new machine. Development, which brings the fruits of research to market, is expensive: two-thirds of U.S. research and development (R&D) expenditures in 1988 were devoted to development rather than to basic or applied research. The actual application of an innovation is an important step beyond development. Information about the technological advance must be disseminated, and workers must be trained to use it. In many cases, it is prohibitively expensive to modify the old capital stock to embody new technology. Therefore, *the rate at which new technology actually augments productivity depends in part on the rate at which new capital goods are created, i.e., on the rate of investment.* A recent study estimates that 20 percent of the contribution of technological change to growth in the United States between 1949 and 1983 came from advances that were embodied in capital.

Raising the rate of investment in the United States may increase the rate of technological progress in other ways, although the size of these effects is difficult to determine. Higher rates of investment shorten the lag between innovation and use, increasing the return on research efforts and spurring additional advances. Further, use of new capital equipment and facilities may trigger discoveries of new ways of doing business, new production processes, and new potential products.

TRENDS IN R&D SPENDING

The United States spent $127.7 billion on R&D in 1987. This level reflects dramatic growth, as real R&D spending grew more than fivefold since 1953 and doubled as a fraction of GNP. As shown in Table 4–1, the United States spends more on R&D than four other leading industrialized nations combined. The share of total world R&D performed by the United States has, however, fallen over the past 25 years as other countries have grown rapidly and have approached or reached the technological frontier.

TABLE 4–1.—*R&D Expenditures for Five Major Industrialized Countries, 1987*

	France[1]	West Germany	Japan[2]	United Kingdom[2]	United States
R&D expenditures (billions of dollars)	16.4	22.8	41.7	15.7	127.7
As a percent of GNP	2.4	2.8	2.8	2.4	2.8
Estimated nondefense R&D expenditures (billions of dollars)	13.1	21.6	41.4	11.7	88.6
As a percent of GNP	1.8	2.6	2.8	1.8	2.0

[1] Data for France are based on GDP; consequently, percentages may be slightly overstated compared to GNP.
[2] Data for Japan and the United Kingdom are for 1986.

Note.—Foreign currency conversions to U.S. dollars are calculated based on Organization for Economic Cooperation and Development purchasing power parity exchange rates.

Source: National Science Foundation.

To the extent that R&D produces knowledge with the same benefits regardless of the size of the economy, the absolute level of R&D spending is the critical measure of R&D investment. An alternative measure of national R&D spending is its intensity—the share of GNP devoted to R&D. The United States, West Germany, and Japan each currently spend about 2.8 percent of their GNP on R&D, with France and the United Kingdom spending only slightly smaller fractions of their GNP (Table 4–1). But a larger proportion of the R&D in the United States is defense-related. The $88.6 billion that the United States spent on nondefense R&D in 1987 was a smaller fraction of GNP than were nondefense R&D expenditures in West Germany and Japan.

Although investment in R&D is only part of the explanation for the rate of technological change, it is clearly important. Average private rates of return on R&D investment are extremely high: estimated rates exceed 20 percent a year. Moreover, these returns do not reflect all of the returns to R&D, because it is difficult for an innovator to capture all of the benefits of an innovation. Some innovations cannot be patented; some patents are hard to defend; all patents eventually expire. An innovation may have spinoffs or ramifications that others bring to market. Users of the product, as well as the innovator, receive benefits. For these and other reasons, the returns to society of R&D investment are estimated to average twice those to the firm that makes the investment.

THE ROLE OF GOVERNMENT

For basic research, the difference between the benefits to society and the returns to those who perform the research is often particularly large. Basic research frequently increases knowledge that has wide application. Because it is usually difficult or inefficient to keep advances in basic research secret, the benefits accrue broadly. Private firms must weigh the costs and risks of a potential investment in basic research against the modest fraction of the total expected social benefit that they generally receive, and thus tend strongly to underinvest in basic research. Moreover, basic research contributes to the strength of universities, which train scientists and engineers for the private sector, as well as to our national defense. *The Federal Government has a key role in supporting basic research.*

Although industry performs about three-quarters of all R&D in the United States, the Federal Government plays an enormous role in science and technology. It provides 47 percent of the funds for R&D, most of which is undertaken by industry and universities. The Federal Government carries out R&D at many facilities, accounting for 11 percent of national R&D spending. It helps to finance the education of scientists and engineers. It protects the intellectual property rights of innovators through the patent system and laws dealing with copyrights, trademarks, and trade secrets. It encourages private innovation through a 20-percent income tax credit for research and experimentation (R&E) and by allowing most R&D expenses to be deducted for tax purposes immediately rather than spread over several years.

STRENGTHENING THE U.S. RESEARCH BASE

The Administration has proposed a broad program of initiatives that will strengthen the Nation's basic research base and enhance private-sector incentives to translate this knowledge into productive innovations.

Improving the Legal Environment

The Administration has advanced important proposals to improve the legal environment for innovation. First, the Administration is aggressively pursuing improved international protection of intellectual property. The current negotiations in the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) are an important forum for developing better international rules. Negotiations on intellectual property rights are also being conducted in the World Intellectual Property Organization and in trilateral talks with the European Community and Japan.

Second, the Administration has proposed reform of product liability laws. The current product liability system, with 50 different

State laws, generates excessive litigation, increases the cost of doing business in the United States, and discourages innovation, particularly in the form of new products. The Administration supports the adoption of uniform product liability standards based on three principles of fairness: the right of an innocent person to fair compensation for actual damages; liability based on responsibility for harm and not ability to pay; and encouragement of alternatives to costly litigation. The proposed changes to product liability laws would maintain incentives to produce safe products, but would restore balance to the tort system and reduce uncertainty—particularly for new products.

Third, the Administration supports continued elimination of unwarranted regulation. Deregulation can spur innovation as well as lower prices. New telephone equipment was rapidly introduced after deregulation of the market. Airlines created more efficient route structures after deregulation. Lives are extended and research is accelerated by the expedited approval of drugs for acquired immune deficiency syndrome (AIDS).

Deregulation also requires a continuous reexamination of existing regulatory policies in light of new technologies. Antitrust regulation, in particular, must be sensitive to changes in technology and in international competition. Unnecessary and burdensome regulations must not be allowed to stifle new products and processes.

Restoring the Capital Gains Tax Differential

Although applied research and development have high average rates of return, they are also quite risky. The high cost of capital such risk produces is a particularly onerous burden for new ventures and small businesses, which have only limited access to traditional sources of finance. Much of the return to entrepreneurs and their backers who bring new products to market—particularly through startup ventures—comes through increasing the value of the business. Reducing the tax rate on capital gains will reward those who bring successful ideas to market and will help provide a climate that encourages businesses to invest in new technologies and products.

Because capital gains are taxed only when assets are sold, the current high tax rate discourages the sales of assets and locks in investors. Reducing the tax rate on capital gains will free these investors to search for more productive new investments.

The Administration has proposed restoring a capital gains tax differential such as existed before the Tax Reform Act of 1986. Most major foreign competitors tax long-term capital gains less heavily than ordinary income, if they tax them at all. A lower tax rate on capital gains will encourage entrepreneurs to take risks to advance themselves by creating wealth for others: new firms hiring

new workers producing new products for new markets here and abroad. *Reducing the capital gains tax rate will encourage innovation and, by increasing investment, hasten the adoption of these innovations.*

Making Permanent the R&E Tax Credit

Under current law, the R&E credit is scheduled to expire on December 31, 1990. Before 1989, the credit was designed so that higher R&E expenditures reduced future credits, which diminished the incentives to undertake further research. In 1989, the incentives in the R&E credit were improved without substantially affecting revenue. *The Administration proposal to make the credit permanent would be an even more significant reform.* It would permit businesses to establish and expand research facilities without fearing that the tax laws will suddenly change.

Increasing Basic Research Funding

America's leadership in science and technology depends on excellence in basic research. Support for basic research, especially at the Nation's universities, makes a critical investment in the 21st century, both by creating knowledge and by training a new generation of scientists and engineers.

The Administration believes that Federal investment in research should focus on fundamental advances in science and technology that have broad relevance and that no individual firm or industry would have the incentive to produce on its own. Accordingly, the Administration supported substantial increases in Federal investment in basic and applied research in the 1990 budget. For 1991, the Administration has a number of new initiatives designed to expand the human frontier. These initiatives include major increases in funding for the National Science Foundation's research programs (continuing the progress begun in fiscal 1990 toward doubling the Foundation's budget by 1993), for space science and exploration to maintain America's leadership into the next century, and for the Superconducting Super Collider to provide new insight into the fundamental structure of matter. Increased funding will be more effective if it is accompanied by improved management of Federal research programs. One way to increase the effectiveness of Federal research spending is to encourage the timely transfer of scientific advances to private-sector applications.

Relying on the Market

Some have argued for a broad new Federal role: choosing specific civilian technologies and financing their development or commercialization by special tax treatment or direct subsidy—a so-called industrial policy. Such an expansion of the current Federal role is strongly opposed by this Administration.

The private sector has inherent advantages over government in identifying potentially useful new technologies. Private decisions are disciplined by careful market evaluations of their prospects. Government decisions, in contrast, are often influenced by noneconomic objectives and based on information supplied by self-interested parties, without regard to taxpayers' cost.

Governments in the United States and elsewhere have shown themselves to be less able than private businesses to pick specific technologies that will be commercially successful. They have often supported fashionable technologies with powerful advocates, rather than those that are economically productive. The billions of dollars in development costs and operating losses that have been invested in the Concorde by the British and French governments illustrate this phenomenon well. Moreover, in many cases governments have continued to support technologies in which they have invested, even if those technologies have been long since demonstrated to be economically unsound by market and technological developments. For example, the synthetic fuels program in the United States lived on for years after its economic futility was evident to most observers.

Over the past 40 years, the world has learned that excessive government involvement in the economy leads to unsound decisions, chokes off productive innovation, and, in the final analysis, slows growth and costs jobs. *The best way to support development of civilian technology is through improving private incentives for applied research and development, not by attempting the impossible job of second-guessing private-sector investments.* It is appropriate, however, for the government to support the development of technologies clearly related to national defense that a careful analysis indicates would not be generated by the private market. In such cases, the government has always relied primarily on the private sector to undertake the R&D required in the development process.

The Administration's proposals will improve incentives for innovation by:

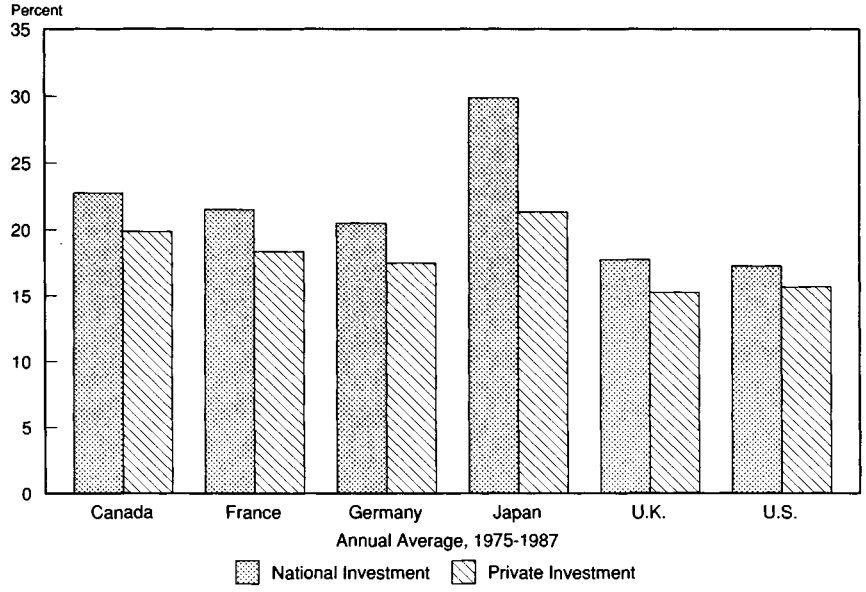
- Protecting intellectual property through international negotiations,
- Reforming product liability laws to restore balance to the tort system,
- Removing regulatory barriers to research, innovation, and development,
- Reducing the tax rate on capital gains to spur entrepeneurial activity,
- Making the R&E tax credit permanent to reduce uncertainty, and
- Substantially increasing funding for the basic research essential to America's future.

CAPITAL INVESTMENT

The United States has devoted substantial resources to investment, but the U.S. investment rate is low by international standards. Gross domestic investment, as a percent of GNP in the United States, is the lowest of the six major industrialized countries shown in Chart 4-1. Between 1975 and 1987, while the other countries devoted an annual average of 22.5 percent of their GNP to national investment, the United States invested only 17.3 percent. Even in Canada—a North American country with a similar economic structure—investment as a share of GNP was 5.5 percentage points higher than in the United States.

Chart 4-1

GROSS FIXED INVESTMENT AS PERCENT OF GNP. Investment in the United States between 1975 and 1987 was low by international standards.



Source: Organization for Economic Cooperation and Development.

One reason that the United States has a lower investment rate than other countries is that government policies are biased against investment. Moreover, several past attempts to address this policy imbalance have been abandoned after a short period, leading to increased uncertainty in the investment environment. *The Administration is committed to removing impediments to investment and to creating a stable environment conducive to long-run growth.*

CAPITAL ACCUMULATION IN THE UNITED STATES

The comparatively low rate of investment in the United States is not a recent phenomenon. As shown in Chart 4–2, real capital purchases have fluctuated around 16 percent of real GNP for the entire postwar period. During the long expansion since 1982, however, U.S. real gross investment performance has been quite strong. Similarly, the rate of investment in nonresidential fixed capital compares favorably with the historical record.

Using an alternative measure of investment, however, the recent U.S. investment record appears less impressive, even by historical standards. Chart 4–3 shows investment rates excluding depreciation—real net investment as a fraction of real net national product (NNP). (NNP is GNP less depreciation.) Using this measure, net investment has remained below the postwar average for the decade of the 1980s.

The difference between the gross and net investment rates during the 1980s reflects a change in the composition of the capital stock. Over time, equipment has risen as a share of the total capital stock. Because equipment wears out more quickly than other capital, this shift has raised the fraction of the capital stock that depreciates each year. Because measuring depreciation is difficult, true economic depreciation may differ from the estimates in the national income and product accounts. Nonetheless, the movement toward a greater share of equipment in the capital stock implies that the difference between gross and net investment has grown over time.

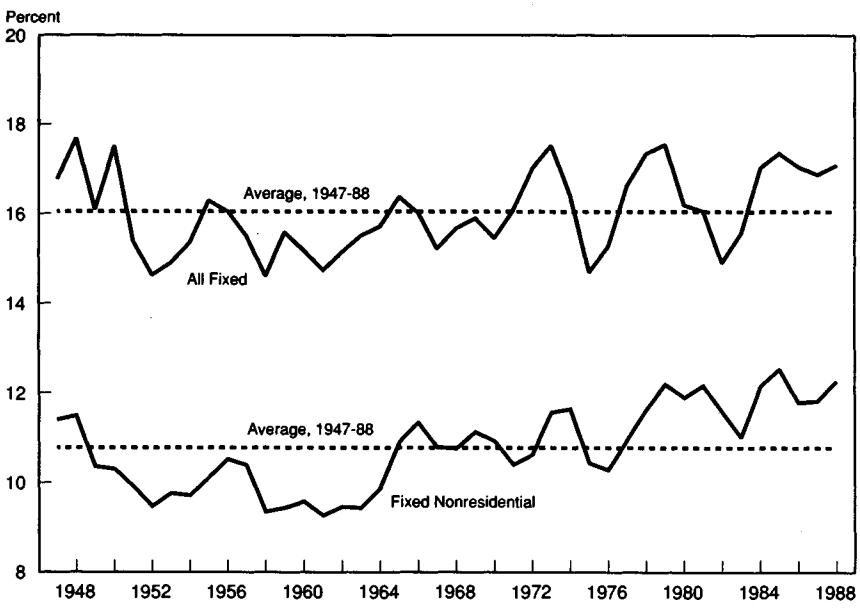
The significance of this trend goes beyond accounting. The gross rate of investment is particularly important when new capital is necessary to incorporate technical advances into production. Both replacement investment and capacity expansion will offer the opportunity to install improved equipment and newer technologies. In these circumstances, increasing the gross rate of investment permits faster adoption of innovations, raising the quality of the capital stock.

On the other hand, investment also contributes to economic growth by increasing the total amount of capital available for production. Only investment above the amount lost to depreciation, or net investment, serves to increase the available capital stock.

Neither investment measure alone is sufficient to judge the U.S. investment performance. The gross investment rate is a better indicator of opportunities to improve the quality of the capital stock, but may substantially overstate total capital accumulation. The rate of net investment may understate improvements in capital, but will better measure increases in the stock of available capital. *On balance, the investment rate in the United States is healthy by*

Chart 4-2

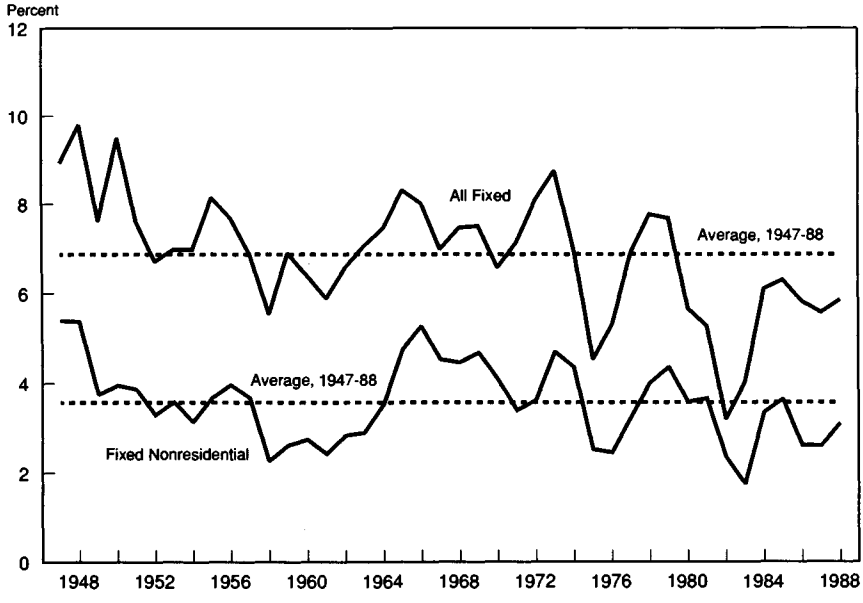
REAL GROSS INVESTMENT AS PERCENT OF GNP. Gross investment was high in the 1980s.



Source: Department of Commerce.

Chart 4-3

REAL NET INVESTMENT AS PERCENT OF NNP. Net investment was below average in the 1980s.



Source: Department of Commerce.

historical standards, but remains below the investment rates of other nations.

HOW A HIGHER INVESTMENT RATE BENEFITS THE ECONOMY

At first glance, small changes in the investment rate may not seem to have important consequences for economic growth. A simple example shows that this impression is misleading. Consider the effect of raising the net private investment rate by 1 percentage point of NNP. Using 1988 levels, this higher rate of investment would raise the annual growth rate of the net private capital stock by 0.5 percentage point. After 10 years, this higher growth rate would generate 6.4 percent more capital. A conservative estimate of capital's contribution to economic growth is its share of national income—roughly 30 percent. Using this estimate, the increased capital accumulation would imply that the level of GNP would rise by an additional 1.9 percent, which is equivalent to an increase in the annual growth rate of GNP of 0.2 percentage point.

Small Improvements Matter in the Long Run

Such seemingly small improvements have important implications over time. A 0.2 percentage point increase in the annual growth of output would substantially speed improvements in the standard of living for future generations. Raising the annual growth rate of real GNP from 2.8 percent to 3.0 percent, for example, would ultimately yield 10 percent more national income after 50 years than otherwise would have been available. This effect is sizable: 10 percent of 1988 GNP was $490 billion, much larger than total residential and nonresidential construction spending or than spending for defense and medicare combined.

Thus, even though the consequences of changes in the national investment rate are substantial, they emerge only gradually. Because even substantial increases in the rate of capital accumulation have only a small immediate effect on GNP, policymakers may underestimate the importance of a favorable investment climate. Moreover, the benefits of good policies that are not pursued cannot be observed directly. The costs of inappropriate policies are accordingly difficult to identify.

ALLOWING CAPITAL TO FIND ITS MOST PRODUCTIVE USE

Capital should be allowed to move freely to its most productive use. Private capital markets, driven by the search for the highest return, weed out investments expected to be inefficient or unsuccessful. Thus, *markets are the best judges of investment opportunities, and success and failure are best determined in the competitive marketplace.*

The sharp reductions in marginal tax rates in 1981 and 1986 have significantly reduced Federal Government interference with the allocation of funds among types of investment. The Federal Government has a smaller impact on private choices. Nevertheless, Federal Government policies still distort the allocation of funds across different industries because some industries are protected and others subsidized. While Federal policies sometimes provide investment funds directly, more often they alter investment incentives. For example, the double taxation of corporate income reduces incentives for corporate compared with noncorporate investment. Similarly, the mix of investment between purchases of equipment and additional business construction has been affected by recent swings in tax policy. Government tax, regulatory, and spending policies should interfere as little as possible with the efficient allocation of investment funds provided by capital markets. The Administration believes that preserving the efficient functioning of these markets is an important foundation for healthy growth.

INVESTING IN INFRASTRUCTURE CAPITAL

Roughly one-quarter of the capital stock in the United States is owned by Federal, State, and local governments. It is typical for discussions of investment behavior to focus on business investment, but government capital accumulation can also affect growth. Because the value of its product is not revealed through market transactions, the role of government capital in supporting the economy is sometimes underappreciated. For the same reason, however, government investment is not automatically subject to the same comparison of expected costs and returns that markets impose on private investment. Government investment plans should accordingly be carefully scrutinized using rigorous benefit-cost analysis.

The bulk of nonmilitary government capital is owned by State and local governments, although the original investment may have been in part federally financed. State and local government capital consists largely of schools and public infrastructure such as highways, streets, bridges, and sewers. Over the past two decades, a slowdown has occurred in State and local capital accumulation; the growth of the capital stock fell from an average rate of 4.9 percent a year in the 1950s and 1960s, to 2.2 percent in the 1970s, and to 0.9 percent in the 1980s. Part of this decline simply reflects a reduction in the size of the school-age population and the completion of road networks. But part of this decline is a real slowdown, and inadequate government infrastructure can impede improvements in productivity growth.

A growing share of travel is carried by aviation, but many parts of the current aviation infrastructure need to be modernized and expanded. The Administration proposes substantial funding in-

creases for aviation programs in 1991. These programs include modernization of aviation facilities and equipment, expansion of airport capacity, and increased funding for operations and R&D.

State and local governments—along with the private sector—must also fulfill their responsibilities to maintain and expand the Nation's infrastructure. *Taking advantage of productive opportunities to maintain and improve the infrastructure is an important part of Federal, State, and local government policies to raise economic growth.*

FINANCING NATIONAL INVESTMENT

For most of the postwar period, U.S. domestic saving was sufficient to finance domestic investment. As Table 4-2 shows, from 1950 to 1979, gross national saving—the sum of household, business, and government saving—exceeded gross private domestic investment in the United States, leaving an average of 0.3 percent of GNP available for net U.S. investment abroad. In those years, international capital flows were often ignored by policymakers and analysts, a practice that would be mistaken in today's economic environment.

TABLE 4-2.—*The Changing Finance of Investment, 1950–88*

[Percent of GNP]

	1950 to 1979	1980 to 1988
Gross private domestic investment	16.0	15.8
EQUALS:		
National saving	16.3	14.1
Private	16.8	16.7
Household	5.0	3.8
Business	11.8	12.9
Government	−.4	−2.6
Federal	−.6	−3.9
State and local	.2	1.3
PLUS:		
Net foreign capital inflows	−.3	1.6

Note.—Detail may not add to totals because of rounding.
Source: Department of Commerce, Bureau of Economic Analysis.

FOREIGN SOURCES OF FINANCING FOR NATIONAL INVESTMENT

The total flow of foreign saving into the United States has been about one-sixth of domestic investment in recent years. Between 1980 and 1988, the share of GNP devoted to gross investment was essentially the same as the average from 1950 to 1979, but the share of national saving fell more than 2 percentage points of GNP. As a matter of arithmetic, the difference between domestic

investment and domestic saving was provided by increased net inflows of foreign saving into the United States.

Foreign individuals and institutions invest their saving in the U.S. capital market to take advantage of available productive, high-yield investments. In 1988, these flows of foreign saving into the United States totaled $219.3 billion. Similarly, some U.S. domestic saving is directed toward investment opportunities in other countries; in 1988, this saving amounted to $82.1 billion. The difference, $137.2 billion in 1988, is the net capital inflow.

Foreign saving in the United States takes two forms. Some is foreign direct investment (FDI)—defined as development of a new business or acquisition of at least a 10-percent interest in a domestic company or tangible asset, such as an office building. The remainder is portfolio investment—purchases of financial instruments such as stocks or bonds. Of total foreign investment in the United States in 1988, $58 billion, or 26.7 percent, was FDI. FDI in the United States has grown rapidly in recent years. According to balance of payments measures, the book value of all foreign direct holdings reached $329 billion at the end of 1988, having increased at an annual rate of 19 percent from its 1983 value of $137 billion.

Some commentators view the growth in FDI with concern, arguing that direct foreign ownership of assets is somehow different from, and more threatening than, "passive" portfolio investments such as Treasury bills or corporate stocks and bonds. In general, such concerns are misguided. FDI benefits both foreign investors and the host economy. Like domestic investment, it can create jobs, produce valuable technological spillovers, and generate long-run increases in productivity. *Interfering with the free flow of foreign direct investment into the United States would harm the U.S. economy.*

The Magnitude of FDI in Perspective

The magnitude of FDI is widely misperceived. Although FDI in the United States has increased a great deal in the past several years, cumulative foreign holdings in the United States remain modest by international standards. In many other industrialized countries, total foreign holdings are a substantially larger proportion of gross domestic product (GDP) than in the United States. Moreover, with the exception of Japan, cumulative investment by the United States in other countries (again as a proportion of host-country GDP) far exceeds these countries' respective cumulative investment in the United States (Table 4-3). Indeed, because investments are measured at book value or acquisition cost, the figures in Table 4-3 understate the point. While the bulk of foreign holdings in the United States was recently acquired, many U.S. investments abroad were made in the 1950s and 1960s. The historical ac-

quisition cost greatly understates the current market value of these older U.S.-owned assets.

TABLE 4-3.—*Foreign Direct Investment, 1988*

[Direct investment holdings as percent of host-country GDP]

	Foreign holdings in the United States	U.S. holdings in foreign country
United Kingdom	2.1	5.7
Japan	.8	[1].5
Netherlands	1.0	6.8
Canada	.6	12.2
West Germany	.5	1.8
Switzerland	.3	10.4
France	.2	1.3

[1] Data for 1987.

Sources: Department of Commerce and International Monetary Fund.

Thus, *the recent increase in FDI is properly viewed not as an event unique to the United States, but as part of a process of global economic integration.* It is instructive to recall that the growth of U.S. direct investment abroad in the 1950s and 1960s was greeted with widespread mistrust in Canada, Europe, and many developing countries. One prominent commentator warned that U.S. investment would destroy established European companies. Hindsight shows that such alarmist sentiment was inappropriate, and that U.S. investment significantly benefited European economies.

In fact, foreign firms play a relatively small role in the American economy. Companies with 10 percent or more foreign ownership employ less than 4 percent of the U.S. labor force. Even in manufacturing, where the FDI presence is the largest, such companies account for under 14 percent of assets and employ only 7 percent of all workers. Thus, in absolute terms, as well as in comparison with other countries, the magnitude of foreign direct investment in the United States is relatively modest.

DOMESTIC SAVING AND NET CAPITAL INFLOWS

International capital flows break the link between domestic saving and investment rates in the short run. Net foreign capital inflows in the 1980s have helped to sustain U.S. investment and thus have contributed to economic growth, despite the low U.S. national saving rate. Nonetheless, for several reasons, increases in the national saving rate would further enhance growth in U.S. living standards.

First, over longer periods, the investment rate in advanced economies is ultimately constrained by the supply of domestic saving. Therefore, raising domestic saving is essential to sustaining the high levels of investment on which economic growth depends

over the long run. It is uncertain to what extent the United States could rely on sustained large capital inflows, even if it chose to do so.

Second, net capital inflows have, in recent years, allowed U.S. spending to exceed U.S. income. However, this pattern cannot persist indefinitely. Ultimately, although no one can be sure when, the United States will have to move to both a current account surplus and a net capital outflow as foreigners receive the returns on their investments in the United States. Some have inaccurately claimed that this transition will mean a reduction in U.S. living standards. In fact, the transition will require only that U.S. income grow faster than U.S. spending. The more rapidly U.S.-owned capital accumulates, the more rapidly U.S. income will grow. More rapid accumulation of U.S.-owned capital requires a higher rate of U.S. national saving. A higher saving rate will thus permit continued healthy growth of U.S. living standards during the transition to a current account surplus.

Third, increased net foreign capital inflows are accompanied by reduced net exports of goods and services (Box 4-1). This can lead to calls for protectionist trade policies, which interfere with international trade of goods and services and can lower living standards in the United States and abroad.

The goal of Administration policy is to remove impediments to national saving. Increased national saving will allow a higher level of domestic investment that is sustainable over the long run—a level that can be achieved regardless of the future of net foreign capital flows.

DOMESTIC SAVING TO FINANCE NATIONAL INVESTMENT

If U.S. investment performance is poor by international standards, recent U.S. saving performance is abysmal. Chart 4-4 indicates that the national saving rate has been much lower in the United States than in other industrial economies. Although substantial difficulties arise in measuring "the" rate of saving, by any measure the national saving rate in the United States is the lowest of these countries. Moreover, the lower rate of saving does not appear to be concentrated in one sector of the U.S. economy. Businesses, governments, and households all save at lower rates than their counterparts in other advanced economies.

The gross national saving rate (national saving as a percent of GNP) varied around 16 percent during the postwar period until the early 1980s, when it fell, as shown in Chart 4-5. Although the gross saving rate has partially rebounded over the past 2 years, during the 1980s it averaged more than 2 percentage points less than in the previous three decades (Table 4-2).

Box 4–1.—The Link Between Lower National Saving and Net Export Performance

As a matter of accounting, changes in net capital inflows and changes in trade flows are linked. Changes in trade flows do not, however, solely determine changes in net capital inflows. Neither are changes in net capital inflows totally responsible for movements in the balance of trade. Instead, economic factors affect both trade and capital flows simultaneously. It is generally recognized, however, that the imbalance between the U.S. saving rate and the higher U.S. investment rate is the fundamental source of the U.S. trade deficit.

When foreign investors enter U.S. capital markets, they must first exchange foreign currencies for U.S. dollars. In large part, these foreign currencies will ultimately be used to pay for goods and services imported from abroad. At the same time, U.S. investments abroad create similar transactions involving the U.S. dollar. The excess of foreign investment in the United States over U.S. investment abroad is the net capital inflow or borrowing from abroad. In order to balance the supply of dollars with the demand, this excess must be matched by a corresponding excess of imports to the United States over exports to other countries.

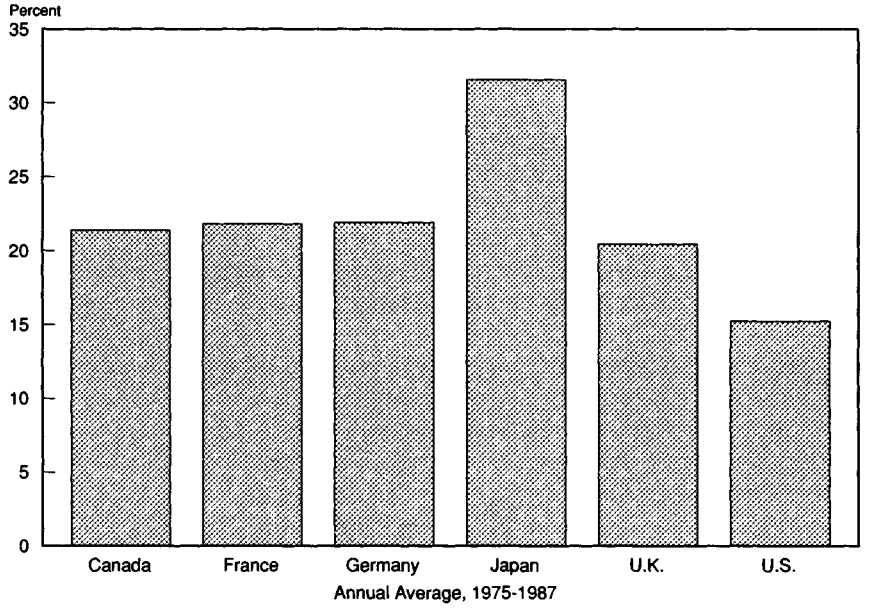
Adjustments in foreign exchange rates and differences in rates of return serve to coordinate this process by altering the incentives for investment and the attractiveness of imports and exports. For example, as capital flows into the United States, purchases of dollars raise the exchange value of the dollar, making imports cheaper and raising the purchase price of U.S. exports.

The sectoral gross saving rates shown in Table 4–2 help to identify the sources of this decline. The private saving rate has declined only slightly, but the composition of saving has shifted. During the period 1980 to 1988, the household saving rate fell by more than 1 percentage point relative to the 1950–79 period, but this decline was almost fully offset by a rise in business saving.

One possible reason for the decline in household saving in the 1980s is the large rise in household wealth attributable to increases in the value of household assets. For example, the stock market boom caused a doubling of the value of corporate stock owned by households between 1981 and 1988. Increases in wealth that are not spent are conceptually equivalent to new saving, but are not included in the national income and product accounts.

Chart 4-4

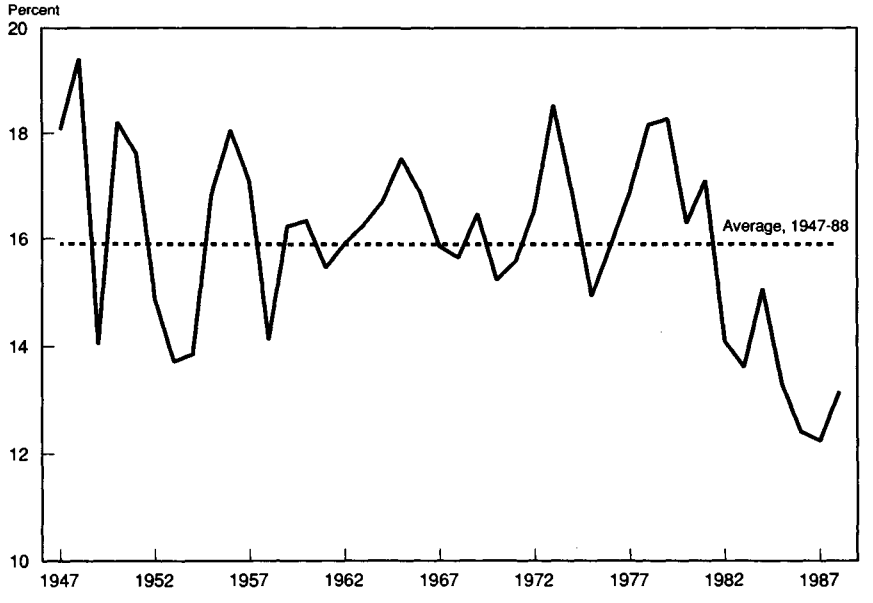
GROSS NATIONAL SAVING AS PERCENT OF GNP. Saving in the United States over the period 1975-1987 was low by international standards.



Source: Organization for Economic Cooperation and Development.

Chart 4-5

GROSS SAVING AS PERCENT OF GNP. National saving was below its historical average in the 1980s.



Source: Department of Commerce.

The government borrowing (or dissaving) rate has risen by more than 2 percentage points between the 1950–79 period and the 1980s, although State and local governments ran surpluses. In the 1980s, Federal Government deficit spending increased by more than 3 percentage points of GNP from its average over the period 1950 to 1979. *Federal Government deficits were the principal reason for lower gross national saving in the United States during the 1980s.*

For some purposes, it is useful to take account of the wearing out of the capital stock by considering the net saving rate: gross national saving minus depreciation, as a percentage of GNP. The decline in the net saving rate (4.5 percentage points) is even larger than the fall in the gross rate in the 1980s. While the increase in depreciation can be traced to shifts in the composition of assets, as discussed above, its measurement is imprecise. Using net saving rates, the decline in national saving reflects lower saving by all three sectors. Between 1950 and 1979, the business saving rate net of depreciation was 2.9 percent, while between 1980 and 1988, the net business saving rate was only 1.8 percent.

POLICY TOWARD INVESTMENT

Increased capital investment is a necessary part of more rapid U.S. economic growth. Policies should be designed to enhance the opportunities to make productive investments. To do so requires an understanding of the factors that influence firms' demands for capital investment. Moreover, in an increasingly integrated global economy, policies should not discriminate among investments by inhibiting foreign direct investment.

FACTORS THAT AFFECT DOMESTIC INVESTMENT

Investment is largely determined by four factors: expected growth in future demand for business output and the cost of capital (particularly real interest rates) affect expected profitability, business confidence influences the risk associated with investment, and business cash flow alters liquidity. When businesses expect demand to grow in the future, they must anticipate the pressure on productive capacity. Unless current capacity utilization is low, the need to increase the stock of plant and equipment raises investment. Studies find that growth in current output serves as a good proxy for expected growth in future demand and, of the four factors, has the strongest effect on investment.

Firms will invest as long as the expected profitability of investment exceeds the user cost of capital (Box 4–2). A higher cost of capital reduces investment by requiring investment projects to meet a higher standard. The magnitude of this reduction depends

on business expectations—investment responds most strongly to lasting changes in the cost of capital.

Box 4-2.—The User Cost of Capital

The user cost of capital for any specific investment, such as a new machine, is the minimum expected pre-tax rate of return it must yield in order to be profitable. The user cost includes all costs associated with financing and operating the machine. Two components of the user cost are strongly affected by government policy.

The first of these is the cost of the money tied up in the investment (sometimes called the cost of capital or the cost of capital funds). This cost varies directly with market interest rates and is thus affected by monetary and fiscal policies and the relation between domestic investment and domestic saving.

The second component is the taxes associated with operation of the investment. Thus, higher tax rates raise the user cost of capital, while more rapid depreciation allowances lower it by postponing tax payments. The double taxation of corporate profits increases the cost of equity-financed investments.

In addition to its cost, the availability of capital is a significant factor. Greater business cash flow potentially aids capital formation by allowing firms to finance investment internally. Cash flow is particularly critical when adverse financial market conditions raise the difficulty of external finance. Empirical studies support this argument, finding that higher levels of cash flow are related to greater investment.

Finally, although difficult to measure, increased confidence about the economic future reduces the perceived risk of investment decisions, thereby promoting investment. Policies should reflect the determinants of investment and be designed to minimize interference with investment decisions. *Investment responds most strongly to sustained increases in output and to maintained reductions in the cost of capital.*

IMPLICATIONS FOR DOMESTIC INVESTMENT POLICY

The analysis of key investment factors—output, the cost of capital, cash flow, and the uncertainty of the investment environment—offers insight into policies that can increase investment.

Policy Stability

Monetary and fiscal policies affect both the level and volatility of the cost of capital and sales growth. Erratic monetary and fiscal policies make the path of inflation and output more uncertain, inducing lenders and investors to demand a higher rate of return as

insurance against the risks of inflation and economic downturns. Policies that keep the economy close to its potential will improve expectations about sales growth, and thus encourage investment. When people expect stable growth, the risk component of interest rates is lowered and the cost of capital falls.

Stable tax and regulatory policies also encourage investment. When the rules change sporadically in ways that penalize previous investment, firms quickly learn that they cannot rely on current taxes and regulations in the future. These firms are less likely to invest or to respond to the new incentives. Governments, like individuals, benefit from reputations for credibility.

Unstable policy can also influence the timing and type of investment. Because firms do not know exactly what will happen in the future, they must consider the risk associated with their choices. If the environment is highly uncertain, investors may be less willing to commit their money today, preferring to wait for the cost or likelihood of mistakes to decline tomorrow. Those who do invest will likely shift toward short-term ventures at the expense of long-term undertakings.

Maintaining consistent policy toward investment, although difficult, is crucial. Investment spending each year involves a mix of new projects and completions of those started in the past. Hence, it takes time for investors to respond to changes in policies. Moreover, as discussed earlier, even substantial changes in the rate of investment require time to alter the rate of economic growth visibly. Thus, policymakers may be tempted to abandon well-designed, long-run policies in the interests of short-run expediency.

Given the desirability of stable policies, it is important to avoid sharp swings in investment incentives. The Economic Recovery Tax Act of 1981, for example, contained sharply accelerated depreciation allowances that were scaled back or eliminated the following year. Temporary incentives may produce a temporary investment boom, but will increase uncertainty about the long-run course of policy and ultimately discourage long-term growth.

Tax Policy Toward Investment

Tax policy significantly affects the cost of capital. The corporate and individual income taxes alter the cost of capital, as do depreciation allowances, and, in some past years, investment tax credits. Tax-induced increases in the cost of capital can lower overall investment. In addition, unequal tax treatment of different types of capital distorts incentives, alters the allocation of investment funds, and reduces investment efficiency.

The taxation of capital income at both the corporate and individual shareholder levels increases the cost of capital for corporations. Corporations pay taxes on earnings from new investment. Shareholders pay additional taxes on these earnings when they receive

dividends or when their sale of shares results in a capital gain. This double taxation of the returns on equity has existed for over 70 years and increases the cost of capital for investments financed in whole or part by corporate shareholders. Because corporations may deduct interest payments, but not dividends, the double taxation of returns on corporate equity also induces corporations to rely more heavily on debt finance. The induced increase in debt, in turn, raises the risk of corporate bankruptcies, with the attendant disruption and job loss.

It has been argued that double taxation is illusory because tax-exempt entities such as pension funds are large suppliers of capital funds, and they are not affected by Tax Code provisions applying to individuals. Similarly, a large fraction of current investment in the United States is financed from foreign sources. For these investment funds, the incentives depend upon the tax treatment of U.S. earnings in the home country.

These observations notwithstanding, the evidence favors a view that firms behave as if their new investment funds come, at least in part, from new equity. As a result, the cost of capital depends on the combined effect of corporate and individual taxes. The double taxation of equity earnings raises the cost of capital to U.S. corporations. Reducing combined taxes on equity earnings such as dividends and capital gains will therefore reduce this restraint on investment.

Tax policy also affects investment by unincorporated businesses. In 1988, nearly 15 percent of real, nonresidential fixed investment was undertaken by noncorporate businesses. For these businesses, one of the most important features of the income tax is the tax rate on capital gains. Much of the return on noncorporate investment takes the form of increases in the value of the business itself. Increasing the tax rate on the capital gains on ownership equity raises the cost of capital and reduces noncorporate investment. *A lower capital gains tax rate provides not only an incentive for increased investment by corporations, but also an incentive to raise noncorporate business investment.*

Further cuts in corporate tax rates would generate only limited investment incentives. As tax rates fall, taxes have a smaller impact on the after-tax return to investment. The Tax Reform Act of 1986 reduced marginal tax rates for corporations and for individuals, limiting the additional investment incentive that can be expected from further rate reduction. The Tax Reform Act also moved toward equalizing effective tax rates for different assets. The equalization provided an important benefit by reducing the significance of tax considerations in choosing among investment opportunities.

In the past, investment tax credits (ITCs) and changes in depreciation schedules were used to provide investment stimulus. ITCs reduced firms' tax liabilities by a fraction of the cost of equipment purchased, and hence reduced the user cost of capital for equipment. The ITC was introduced in 1962. Over the next two decades, the ITC was repealed, modified, or reinstated 7 times, sometimes in response to business cycle conditions. These frequent alterations in investment policy increased the uncertainty of the investment environment.

Depreciation allowances have also been used as an investment incentive. Depreciation allowances are intended to adjust profits for the costs of using capital assets during production. Accelerated depreciation was instituted in the 1950s and modified repeatedly thereafter. The acceleration was designed to lower the user cost of capital, to adjust imperfectly for inflation distortions, and to provide an incentive for greater investment.

While ITCs and accelerated depreciation stimulated investment, numerous studies indicated that they had an unfavorable effect on the allocation of investment among competing investment opportunities. For ITCs, the value of the investment credit was higher for shorter lived assets. With accelerated depreciation, the stimulus was also uneven, varying between structures and equipment and within asset classes. The uneven treatment led to underinvestment in assets that had less generous allowances and in some cases fostered unproductive investments. The Tax Reform Act of 1986 eliminated ITCs and attempted to match tax depreciation schedules and real economic depreciation more closely.

The most important investment incentives the Federal Government can provide are stable macroeconomic policies that keep output near its potential and inflation low, as well as an institutional framework that permits the free flow of investment to its most valuable use and encourages new business formation. The United States should also work toward removing longstanding tax impediments to investment by:

- Restoring the capital gains tax differential and
- Reducing the double taxation of corporate equity earnings.

FACTORS THAT AFFECT FOREIGN DIRECT INVESTMENT

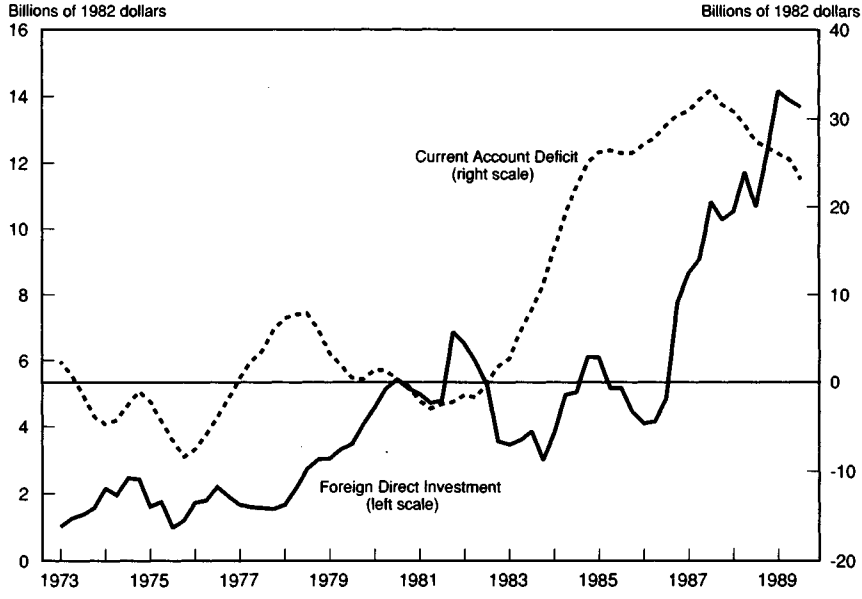
Many observers see the recent increases in FDI as closely related to macroeconomic factors, such as the trade deficit or the decline in the value of the dollar since 1985. But no automatic mechanism links FDI and the current account deficit. Although, as a matter of accounting, a higher current account deficit does imply higher *net* capital inflows, this change in flows can be effected by receiving increased gross inflows of either direct or portfolio investment from

abroad or by a reduced rate of U.S. gross direct or portfolio investment in other countries. For example, FDI in the United States can increase *without* a change in the current account if at the same time the United States is increasing its investment abroad. Indeed, U.S. companies have continued to increase their direct holdings abroad in recent years, in spite of large current account deficits—a recent example being the Ford Motor Company's acquisition of the United Kingdom's Jaguar PLC.

The data confirm that FDI is driven by much more than just current account balances. As Chart 4-6 shows, FDI inflows climbed in the late 1970s before a large current account deficit developed and continue to increase even as the current account improves. The experience of other countries is even more striking. For example, West Germany has run a current account *surplus* for decades but has seen foreign ownership of its manufacturing sector climb to 15 percent.

Chart 4-6

FOREIGN DIRECT INVESTMENT AND THE CURRENT ACCOUNT DEFICIT. Movements in foreign direct investment are not closely related to movements in the current account deficit.



Note: Consumer price index used as deflator. Data are quarterly.
Source: Department of Commerce and Department of Labor.

The upward trend in FDI over the past several years has coincided with a surge of mergers and acquisitions in the United States. In this same period, acquisitions of existing assets have played a growing role as a vehicle for FDI. Between 1982 and 1988, the pro-

portion of all new FDI (i.e., all foreign acquisitions or establishments of new enterprises) accomplished through mergers and acquisitions rose markedly.

This change reflects in part the development of a larger and more efficient market for corporate assets—a market that facilitates the movement of those assets into the hands of owners who expect to use them most productively. Not only can whole companies be purchased more easily, but also, because of restructurings and divestitures, particularly desirable assets or divisions can often be acquired on a stand-alone basis.

The United States is one of the most attractive nations in which to invest, in part because of the sheer size and scope of its markets: the United States produces 26 percent of the gross world product. As the global economy becomes more integrated and both U.S. and foreign firms adopt more sophisticated strategies in response, it is hardly surprising that foreign companies are, with increasing frequency, the highest bidders for U.S. corporate assets. International differences in capital costs for some foreign acquirors may also partially explain the rise of FDI in the United States.

Foreign-owned firms operating in the United States receive "national" treatment—they are subject to the same environmental, antitrust, and other regulations as domestically owned firms. Although the exact tax treatment may be affected by the tax code in their home country, they are liable for U.S. taxes and are subject to international tax treaties. They hire from the same labor pool as U.S. companies. As these facts might lead one to expect, foreign-owned firms do not differ markedly from their domestic counterparts in such business decisions as employee compensation and R&D expenditures.

IMPLICATIONS FOR POLICY TOWARD FOREIGN DIRECT INVESTMENT

U.S. policy toward foreign direct investment has long recognized that a free flow of investment capital across borders benefits both host and investor countries. As noted above, the United States generally provides foreign investors nondiscriminatory treatment under U.S. laws and regulations. It is in the interest of U.S. consumers, workers, and investors to maintain this open policy.

National security considerations have been a longstanding exception to this open investment policy. Like other developed countries, the United States has imposed restrictions on FDI in certain sectors for national security reasons. Various statutes incorporate these restrictions, including the Atomic Energy Act, the Federal Aviation Act, the Shipping Act, and the Federal Communications Act.

Under the Exon-Florio provision of the Omnibus Trade and Competitiveness Act of 1988, the interagency Committee on Foreign Investment in the United States reviews investments with potential national security implications and investigates sensitive transactions. The President can prohibit or suspend investments that threaten to impair U.S. national security. By the end of 1989, this committee had reviewed more than 200 transactions, undertaken investigations of 6 and referred 3 to the President for a decision. In each case, the President decided not to intervene. In line with the Administration's open investment policy and the provision of law, the Exon-Florio authority will be used only when no other measures are adequate to protect the national security.

Restricting foreign investment in the United States would weaken the economy. The Administration is pursuing the constructive approach of working to remove formal and informal barriers to international investment throughout the world. The initiatives being pursued include: encouraging the Organization for Economic Cooperation and Development (OECD) to strengthen the voluntary accord that grants national treatment to foreign-owned enterprises; making removal of investment barriers an important part of the negotiations with Japan on structural impediments; and working during the Uruguay Round of GATT for discipline on government-sponsored trade measures associated with investment.

POLICY TOWARD SAVING

The saving performance of the United States reflects, in part, longstanding features of Federal Government policy. Large, persistent Federal budget deficits directly reduce national saving. Many types of personal saving are taxed twice, once when the income is earned and again when the returns on the saving are received. Inflation increases taxable returns to capital without affecting real returns; these extra taxes further penalize saving and investment. For businesses, returns to corporate equity, particularly dividends, are taxed at both the corporate and individual levels. These and other policies need to be reexamined as part of any effort to increase national saving. *Current policies are biased toward consumption—whether in the household, business, or government sector—and against saving.*

National saving reflects the actions of the three principal sectors of the economy. Household saving is the result of the spending decisions by individuals and families; business saving reflects decisions by firms to retain after-tax profits; and government saving is the outcome of the political debate over revenue measures and spending priorities.

Government policy should focus on *national* saving. National saving determines the amount of domestic funds available for investment, affects the cost of capital, and influences the balance of trade. Policies toward saving must be analyzed both for each sector of the economy—household, business, government—and for the Nation as a whole. Policymakers must be especially careful not to develop incentives to raise private saving at the expense of public borrowing, thereby simply transferring a portion of the low national saving rate from the private to the public sector.

GOVERNMENT SAVING

The single most direct way for the government to increase national saving is to continue to reduce the Federal budget deficit. Some economists argue that reducing Federal deficits would not succeed in raising national saving because private savers would recognize the increased government saving and feel a corresponding reduction in their need to save. In this view, private saving adjusts to offset changes in government saving. This argument is both flawed and inconsistent with the evidence. For example, in the early 1980s, household saving fell even as Federal deficits rose. Because there is no offsetting decrease in private saving, reduced deficits will increase the pool of domestic funds available for private investment. To raise national saving effectively, however, deficit reduction should not be attained by increasing disincentives for private saving or by reducing government investment.

The Gramm-Rudman-Hollings Act was designed to reduce the deficit each year, reaching a balanced budget in 1993. The Administration remains firmly committed to deficit reduction. The Federal Government must end its role as a chronic borrower and stop draining the Nation's scarce savings pool.

Deficit reduction is not enough in view of the likely future demands that the retirement of the baby-boom generation will place on the Social Security system and, indeed, on the whole economy. The Administration proposes to establish a Social Security Integrity and Debt Reduction Fund to safeguard projected surpluses in the Social Security trust funds and to reduce the national debt. Reducing the national debt will increase the pool of domestic saving, reduce the current account deficit, lower the cost of capital, spur investment and productivity growth, and lead to higher future living standards. This proposal would prevent the use of Social Security receipts to finance other spending, reduce the legacy of public debt, and leave a more secure fiscal status to future generations.

HOUSEHOLD SAVING

Household saving is the most familiar component of national saving. Because the saving decision reflects so many individual

goals, however, fostering household saving is a difficult policy task. Households save as a precaution against accident, illness, or loss of job. For these purposes, savings must be sufficiently liquid to meet unexpected needs. Households also save to purchase homes and big-ticket durable goods and to pay future educational expenses. These saving goals are particularly important for young families who have few assets and relatively little financial flexibility. People also save to help finance their retirement and to leave bequests to their heirs. For these long-term goals, security or the rate of return to saving may dominate considerations of liquidity.

The overall household saving rate can change even when all individuals have the same proclivity to save over their lifetimes. One source of change in overall saving is change in the age structure of the population. Because of the baby-boom generation, those under 35 have constituted an unusually large fraction of the working population over the past 15 years. Young people typically save relatively little of their income, which explains part of the overall decline in saving. As the baby-boom generation ages, the household saving rate will rebound somewhat.

The response of household saving to changes in the rate of return on saving is a critical issue, because tax policy directly affects the rate of return. But increases in the rate of return have two opposing effects on saving. Higher rates of return lower the price of future consumption, thus *increasing* the incentive to save. Higher rates also reduce the amount of saving required to achieve a given level of future consumption, thereby *reducing* the incentive to save. Although this area is being actively researched and debated, empirical studies on balance suggest that saving increases modestly with higher rates of return.

Several options are available to allow savers to earn the untaxed rate of return for retirement purposes, but such options are not typically available for shorter term saving goals. Pensions, Keogh and 401(k) plans, and, for those eligible, deductible individual retirement accounts (IRAs) all permit individuals to deduct their contributions, with both contributions and earnings taxed only upon withdrawal.

Another form of tax-preferred savings account would not allow deductions for contributions. Withdrawals of both contributions and earnings, however, would be tax free. If a taxpayer is in the same tax bracket at the time of contribution and at withdrawal, such accounts would offer the same rate of return as deductible IRAs. As long as households realize this fact, their spending would be the same under either type of account.

Individual Retirement Accounts

IRAs represent one means to reduce the double taxation of saving and reduce the bias against saving. The degree to which this incentive is successful depends in part upon the limit for contribu-

tions to the IRA. Higher contribution limits increase the number of households who receive a saving incentive, because the pre-tax rate of return will apply to their last dollar saved. Higher contribution limits therefore raise private saving.

Deductible IRAs and pensions lower the distortion produced by tax treatment of retirement saving and are a valuable contribution to the climate for saving. Because of penalties for early withdrawal, however, they are not an attractive vehicle for savers with intermediate saving goals. The inaccessibility of savings in IRAs and pensions prior to retirement restricts their usefulness for these purposes. To address this issue, the Administration proposes easing the withdrawal requirements on IRAs to permit savers to use these funds for first-time home purchases.

Family Savings Accounts

To further reduce the bias against saving, especially for families with pre-retirement savings objectives, the Administration proposes creating a Family Savings Account (FSA). Contributions to FSAs would be nondeductible, but earnings on contributions would be exempt from income tax. Annual contributions to an FSA could be up to $5,000 for married couples and $2,500 for single people. FSAs would be limited to married couples with incomes below $120,000, singles with incomes below $60,000, and heads of households with incomes below $100,000. If contributions were held for at least 7 years, both the original contribution and all earnings could be withdrawn without tax. Withdrawals made in the first 3 years would be subject to both ordinary income tax and a 10-percent excise tax on the *earnings* alone. Earnings included in withdrawals made after 3 years, but before the 7-year period, would be subject to ordinary income tax.

The enhanced liquidity of the FSA provided by the shorter holding period is an important addition to policy toward saving. It is particularly valuable for families who wish to save for such pre-retirement objectives as a child's education or a down payment on a home. Further, the contribution limits are more generous than for existing IRAs. FSAs will increase household saving. Moreover, they are best viewed as part of the larger program to reduce the bias against saving in the United States.

Social Security

The most important Federal Government policy toward retirement is the Social Security program. Its effect on personal saving has been the object of intense study and controversy among economists. Individuals can substitute Social Security for retirement saving. In addition, Social Security reduces the riskiness of retirement consumption because benefits are indexed for inflation and are paid until the death of both the worker and spouse. As such,

they are essentially government insurance of a constant base level of consumption. These effects may reduce private saving.

Until recently, Social Security ran on a pay-as-you-go basis, with current workers' payroll taxes paying current retirees' benefits. As a result, no government saving was available to offset any reduction in private saving, suggesting that Social Security reduced national saving. After many studies and opinions, the weight of the evidence suggests that Social Security modestly reduced saving in the postwar period. However, reforms enacted in 1983 will produce substantial government saving in the future. As discussed above, the expected increase in government saving will be an important contribution to national saving, and the Administration has proposed policies to ensure that the integrity of projected future Social Security surpluses is protected.

BUSINESS SAVING

Corporate saving typically accounts for well over one-half of gross private saving, yet most debate regarding saving—whether among policymakers, academics, members of the press, or the public at large—focuses on either household saving or government saving. Businesses save out of earnings, by retaining and reinvesting some profits within the business rather than paying them out as dividends or share repurchases. The impact on business saving of a particular policy therefore depends critically on its effects on the level of earnings and on the incentive to pay them out.

By increasing the incentive to retain earnings, a lower capital gains tax rate will increase business saving. For shareholders, the return to retained earnings comes in the form of higher stock prices, which are taxed at the capital gains rate. Therefore, retained earnings are taxed both when the corporate income is earned and again when the gains are received. Lower capital gains tax rates will both reduce the pressure to pay dividends and increase the incentive for equity finance. Both effects increase retained earnings.

Under current law, dividends are also taxed twice, once when the income is earned by the corporation and again when it is paid out to shareholders. Eliminating the double taxation of corporation income—which can be accomplished in a variety of ways—has a theoretically uncertain effect on business saving. It would increase equity finance, but corporations would have a reduced incentive to retain their earnings.

Even if business saving is reduced slightly, however, total private saving might not fall. Eliminating the double taxation of dividends and lowering the tax rate on capital gains would increase the rate of return to household savers. Personal saving may increase in response by enough to offset any decline in business saving. More-

over, shareholders may change their saving in direct response to changes in business saving—they may see through the so-called corporate veil. If corporations save less for their shareholders, the shareholders can compensate by increasing their household saving. The available evidence indicates that a reduction in business saving is indeed offset—at least in part—by an increase in household saving. Shareholders consume only part of the higher payouts.

Share repurchases, takeovers, and leveraged buyouts have increased dramatically in recent years; net equity issues by U.S. nonfinancial corporations have been negative in each year since 1984. The effect of these repurchases on the corporate debt-to-equity ratio has been mitigated by the rise in the market value of equity over the same period. Still, the increasing trend to debt finance makes it more likely that the net effect of removing the tax bias against equity finance would be to increase private saving.

REMOVING IMPEDIMENTS TO SAVING

The Administration's proposals are a comprehensive approach to reducing the current policy bias against saving by households, businesses, and government.

- Reducing the Federal budget deficit is the most reliable policy to increase national saving. The Administration proposes to go further, establishing the Social Security Integrity and Debt Reduction Fund and using it to safeguard projected surpluses in the Social Security trust funds, to reduce the national debt, and to help finance increased investment and spur growth.
- Restoring the capital gains tax differential, as proposed by the Administration, will increase saving by both households and businesses.
- Establishing Family Savings Accounts (FSAs) will further reduce the bias against saving. The enhanced liquidity of the FSA is particularly valuable for families who wish to save for such pre-retirement objectives as a child's education or a down payment on a home.

SUMMARY

Economic growth is the foundation upon which the Nation's future rests. Ensuring solid growth and enhancing the economy's growth potential are therefore the primary goals of the Administration's economic policy. Economic growth will provide rising living standards and employment opportunities for American families, as well as the resources to achieve other national goals. In order to spur growth, the United States must increase its rate of investment in physical, intellectual, and human capital. It must also raise the low national saving rate.

Current Federal Government tax, spending, and regulatory policies discourage saving and investment. At a minimum, these policies should be moved toward neutrality between consumption and investment.

The Administration has proposed new initiatives to increase saving and investment. The most important is the commitment to a budget policy that will reduce the budget deficit and then the national debt. Restoring the capital gains tax rate differential will increase innovation, investment, and saving. Making the tax credit for research and experimentation permanent will expand private expenditures for innovation. Increased Federal spending for research will strengthen the Nation's knowledge base. Instituting Family Savings Accounts will encourage personal saving.

These initiatives represent a strong commitment to increasing national saving and investment and encouraging entrepreneurship and innovation.

CHAPTER 5

Human Resources in the 1990s

THE SUSTAINED ECONOMIC EXPANSION of the 1980s has produced remarkable growth in employment and increased economic opportunity. As the Nation looks ahead to the 1990s, new challenges demand attention. Some have forecast that labor shortages—especially among skilled workers—will dominate the next decade and may limit the potential for economic growth. Based on the experience of past decades, however, the remarkably flexible U.S. labor market should—if left to itself—respond well to these new challenges. But continued growth will require increased labor mobility, reduced barriers to employment, and ongoing investment in the skills and knowledge of the work force.

The President has proposed a variety of new initiatives that will improve the productivity of American workers and the well-being of American families. The efforts of this Administration include new initiatives to raise the quality of the Nation's schools, changes in existing programs to ensure effective employment assistance to disadvantaged workers, implementation of a newly designed welfare system, innovative initiatives to improve housing opportunities for low-income families, and support for legislation that will decrease employment barriers for disabled workers. Coupled with sound macroeconomic policies, these initiatives will help ensure productive employment opportunities and economic security for American families.

ACHIEVEMENTS OF THE 1980s

Job opportunities for the U.S. population improved markedly in the 1980s. Since the beginning of the current expansion, the economy has created more than 20 million new jobs. The civilian unemployment rate has fallen from 9.7 percent in 1982 to 5.3 percent in 1989, its lowest level in 16 years. In 23 States, the unemployment rate in late 1989 was 4.5 percent or lower. And for almost every major demographic group, jobless rates in 1989 were at their lowest levels since the early 1970s. These gains stand in sharp contrast to the 1970s, when the rate of unemployment was successively higher at each business cycle peak.

U.S. employment growth has been especially strong in comparison with other developed nations. Major industrialized countries

such as the United Kingdom, West Germany, France, and Japan have all experienced slower employment growth than the United States throughout the 1980s. Indeed, the total increase in employment in the United States since 1982 is greater than the increases in Western Europe, Canada, and Japan combined and is nearly as great as the entire work forces of Spain and Portugal combined.

Over the past three decades, the American people have clearly benefited from a remarkably flexible labor market that has successfully created jobs for its workers despite major demographic and industrial changes. This flexibility stems partly from an ongoing commitment to limit government interference that hinders economic adjustments. It also reflects the historic willingness and ability of the U.S. private sector—both workers and firms—to adapt to economic change.

For example, the baby-boom generation, born between 1946 and 1964, flooded the labor market in the late 1960s and 1970s. Yet, the economy successfully absorbed this group. Similarly, women's labor market participation has risen markedly over the past three decades. That increase in supply did not lead, as might have been expected, to lower wages and higher unemployment among women. Instead, women have enjoyed substantial economic gains. Female and male unemployment rates converged in the 1980s for the first time since World War II. And women's wages increased substantially relative to men's, closing almost a quarter of the gap in pay rates between the sexes.

In addition, the labor market has responded to major shifts over the past decade in labor demand across industries and occupations. International competition, technological change, and changing consumer demands have altered the nature and location of many U.S. jobs. Job mobility, migration, and skill retraining have all helped most workers to find new jobs in this rapidly changing labor market.

Labor markets do not adjust instantaneously. Rather, workers and employers respond over time to changes in supply and demand through the workings of the market. The growing economy in recent years has made it even easier for unemployed workers and new labor market entrants to find jobs and for working Americans to increase their living standards.

CHALLENGES OF THE 1990s

Perhaps shaped by experiences during the Great Depression in the 1930s, the debate on macroeconomic policy over the past five decades has been heavily influenced by fears that the U.S. economy could not produce enough jobs for its workers. Undoubtedly, occasional episodes of declining economic growth and rising unemployment will occur. But analysis of impending labor market develop-

ments in the 1990s suggests that other concerns will also demand attention. Many observers now worry about the availability of workers—especially skilled workers. Some have even argued that labor shortages will dominate the 1990s and may slow economic growth.

Indeed, changes in the labor force and the economy over the next decade will produce new challenges. The relatively small baby-bust generation is moving into its working years, reducing the share of new labor market entrants in the population. At the same time, the demand for skilled labor is likely to increase as the relative importance of the service sector grows.

As in earlier decades, the labor market should naturally adapt to these changes over time. Firms will shape compensation packages to attract and train the workers they need, and workers will respond to the higher wages that result from expanded skill demands by seeking additional training. Appropriate government policies can help quicken the pace of adjustment. To ensure an environment in which economic growth can be sustained over the next decade, private business must work together with all levels of government to provide Americans with the skills and the education necessary to function effectively as workers in a modern economy.

Chapter 4 of this *Report* discusses the need to increase investment in physical capital and in research and development. This chapter examines the concurrent need to increase the Nation's investment in human capital by expanding the skills and knowledge of the Nation's youth and strengthening job training for the existing work force. Reducing barriers to labor mobility and to the use of additional sources of labor—such as immigrants, the elderly, and the disabled—will also be necessary if employers and workers are to adapt quickly to labor market change.

The years ahead will provide a unique opportunity to integrate the poor and disadvantaged into the work force. A healthy and growing economy will provide additional opportunities for poor families to raise their living standards. Policies that increase employment and earnings of the poor can both reduce poverty and add to the Nation's productive resources.

Impending changes in the labor force pose real challenges for the 1990s. But those who argue that labor shortages will stall the economy in the next decade ignore the flexibility and adaptability of U.S. firms, workers, and governments.

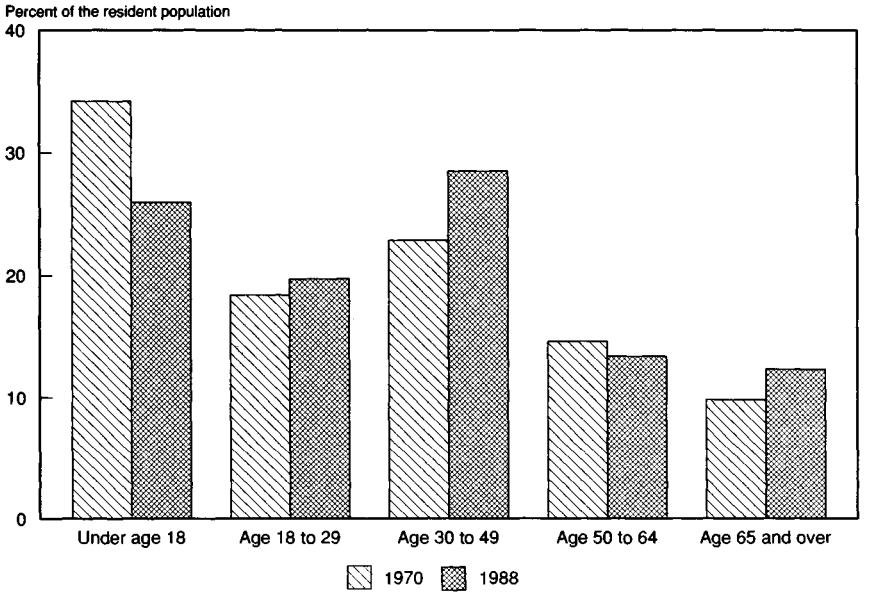
THE CHANGING U.S. POPULATION

Several major demographic trends will influence the U.S. economy and its labor markets in the 1990s. The steady aging of the baby-boom generation will continue to increase the average age of

the work force. As Chart 5-1 shows, the percentage of the population between ages 30 and 49 rose from 23 to 29 percent between 1970 and 1988, and is projected to rise to 31 percent by 2000. The percentage of the population age 65 and over will also continue to grow, while the percentage age 85 and over will grow even more rapidly. At the same time, the lower birth rates that followed the baby boom have resulted in a declining number of teenagers and young adults in the population.

Chart 5-1

AGE DISTRIBUTION OF THE U.S. POPULATION. The aging of the population means a more experienced work force, a declining share of teenagers, and an increasing share of elderly.



Source: Department of Commerce.

In addition, the share of the population composed of racial and ethnic minorities—particularly blacks, Hispanics, and Asians—continues to increase. Growth in the Hispanic community has been particularly rapid. Since 1980, as a result of higher birth and immigration rates, the Hispanic population has expanded at a rate five times as fast as the rest of the population. Inflation-adjusted weekly earnings among full-time minority workers have not risen since 1980. After several decades of steady growth, relative weekly earnings of black men have also remained flat throughout the 1980s, at about three-fourths of white men's weekly earnings. Employment has gone up among minority workers, however, increasing labor market income for this group as a whole.

This changing population mix has important implications for the U.S. labor market. The movement of the baby-boom generation into its thirties and forties means a work force that is, on average, older and therefore somewhat less flexible and mobile. The declining share of teenagers and young adults has meant labor shortages for those industries that traditionally hire young people for part-time jobs. At the same time, employment opportunities have increased for those older persons who seek employment.

The growing population of Hispanic and Asian workers, many of whom speak English as a second language, will need to adapt fully to the U.S. labor market. This population will also create new challenges for schools and employers to offer training and assistance to enable these workers to be fully integrated into the economy. Historically, this challenge is familiar to the U.S. economy; current immigration rates, while above those of recent decades, are well below those around the turn of the century. The labor market successfully absorbed these earlier immigrants, who worked hard for economic security in their adopted country. The growing share of racial and ethnic minorities in the work force also underscores the importance of ensuring equal economic opportunities for all workers.

Not only is the composition of the U.S. population changing, but so are the ways in which individuals form families and households. The proportion of individuals who do not live with any relative continues to increase, both because young adults spend more years living on their own and because the number of elderly single individuals has been rising. The share of female-headed households with children is also increasing, from 5 percent of all households in 1970 to 7 percent in 1988. Concurrently, the share of married-couple households has declined, from 71 percent of all households in 1970 to 57 percent by 1988. The nature of these married-couple households has also changed dramatically; in most of today's marriages, both husband and wife work. Even among married women with preschool children, 53 percent work at least part-time outside the home.

These trends underscore the increasing importance of women's earnings. More women are the sole earner in the household, either as single individuals or as single parents. Moreover, married couples are relying more heavily upon women's earnings. By 1985, women's earnings provided 28 percent of all income among white households and 46 percent of all income among black households. Women's wages have risen relative to men's over the past decade, and continued improvements in job opportunities and wages for women will help many low-income households improve their standard of living.

These demographic and household trends set the stage for some of the important labor market challenges of the 1990s:

- Adjusting to an aging labor force and a smaller number of new labor market entrants.
- Absorbing a larger share of workers from varying ethnic and racial backgrounds and ensuring economic opportunities for all workers.
- Continuing the expansion of women's labor market opportunities.

The Department of Labor estimates that more than two-thirds of all new labor market entrants between 1988 and 2000 will be Hispanic, Asian, black, or female. Strong economic growth depends on finding productive employment opportunities for these workers.

SKILLS AND EDUCATION: INVESTING IN HUMAN RESOURCES

A modern growing economy requires an educated and flexible labor force. The median years of schooling acquired by young adults (aged 25 to 29) rose steadily in this country to an historic high in 1976 of 12.9 years. But there has been no increase since then, while the need for a more highly skilled labor force continues to grow. Raising the quality of education in elementary and secondary schools is at least as important as increasing years of schooling. Higher achievement among students of every age will better prepare tomorrow's workers for productive employment. The Federal Government can play an important leadership role in stimulating improvement in the education and training of U.S. workers, but it is important to recognize that the primary responsibility for this task resides in State and local governments and in the private sector.

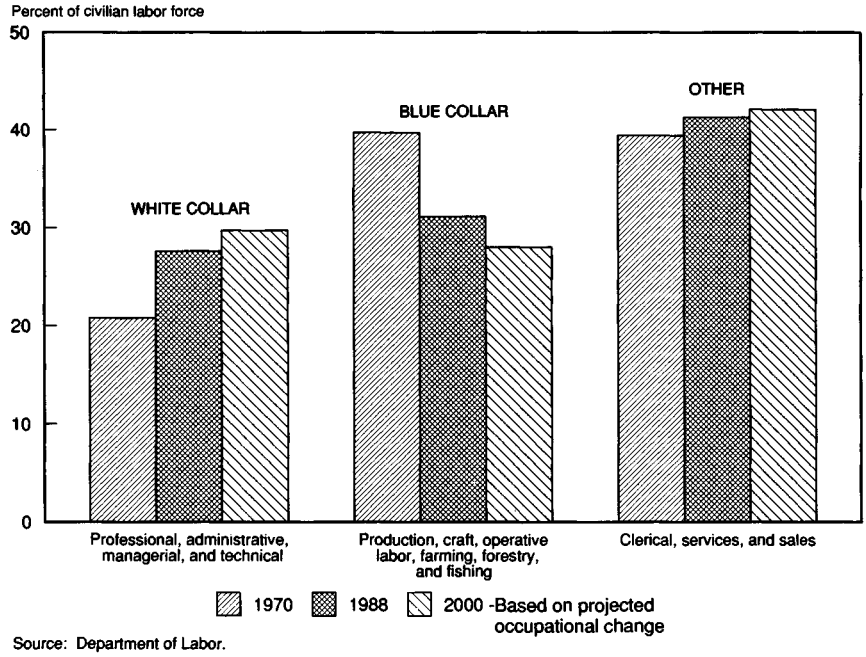
THE GROWING NEED FOR SKILLED LABOR

The demand for more highly educated labor has increased steadily for many decades in the United States. As Chart 5-2 indicates, the share of jobs in occupations requiring greater education has expanded. In 1970, 21 percent of the work force were in white-collar jobs (professional, administrative, managerial, and technical occupations). By 1988, 28 percent of workers held these jobs. Correspondingly, the share of blue-collar jobs (production, craft, operative, labor, and agricultural work) fell from 40 percent to 31 percent. The share of sales, clerical, and service jobs rose slightly, and there was a shift toward more skilled jobs within these categories.

These occupational changes have been closely related to the declining share of employment in traditional manufacturing industries and the rising share in service-producing industries. In con-

Chart 5-2

TRENDS IN OCCUPATIONS. Projected growth in white collar and service occupations will demand a more highly skilled labor force in the future.



Source: Department of Labor.

trast to the stereotype of service-sector jobs as low-skilled labor, the growing service sector in general contains a higher percentage of jobs requiring more education. Fully 24 percent of workers in the service-producing sectors of the economy held a college degree in 1980, while only 20 percent had no high school diploma. In contrast, only 11 percent of the workers in the goods-producing sectors held college degrees, while 30 percent had not completed high school.

As the economy continues to shift toward services, the need for skilled labor will continue to rise. The Bureau of Labor Statistics predicts that the fastest employment growth between now and the year 2000 will occur in white-collar occupations, where 57 percent of all workers are college graduates and 97 percent are high school graduates. Blue-collar occupations, where only 5 percent are college graduates and 71 percent are high school graduates, will continue to shrink.

EDUCATION AND PRODUCTIVITY

Just as a healthy economy requires investment in physical capital to maintain productivity growth, so it requires investment in

human capital—in the education and training of workers. The skills and attitudes that young workers bring to the labor force are shaped by their families and by the public and private school systems of this country.

Education raises skill levels that increase job performance and productivity. Higher mathematics and verbal achievement scores are associated with higher labor productivity and wages. Years of school are related to increased future earnings and lower risk of unemployment. Moreover, studies show that workers who are better at understanding directions, asking questions, and solving problems are also more productive.

Increased education also provides greater job flexibility for workers in a changing economic environment. When production technologies change, better educated workers learn new procedures more easily. Moreover, when economic change leads to job loss, better educated workers find new jobs more readily.

Concern over declining school quality in the United States has led researchers to probe more deeply into the relationship between educational achievement and economic growth. Studies suggest that 10 to 15 percent of economic growth after 1945 was attributable to improvements in education. Thus, improving the quality of education may have lasting effects on the Nation's standard of living.

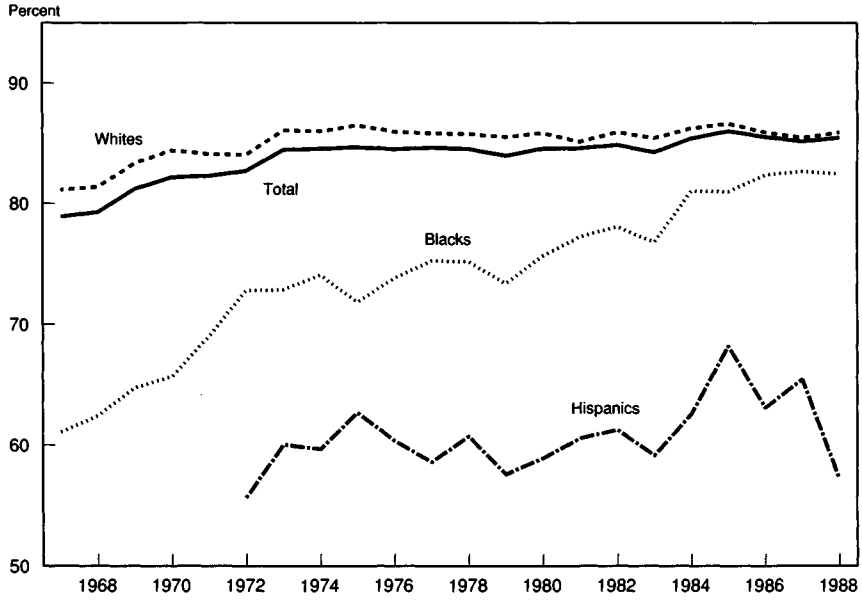
TRENDS IN BASIC SKILLS

A high school diploma is often considered the minimal requirement for a good job. Currently, 85 percent of the 20- to 24-year-old population has completed high school. High school graduation rates have been largely stagnant since the mid-1970s (Chart 5–3). The primary exception occurs among young blacks, whose dropout rates have fallen and whose high school completion rates have increased steadily to a current level of 82 percent. Among young Hispanics, however, high school completion rates remain at a very low 57 percent. The 15 percent of young adults who are high school dropouts face low earnings and high unemployment rates (Box 5–1). The lack of significant progress over the past decade in raising overall high school completion rates is a serious concern for an economy with a declining need for unskilled workers.

As important as whether a student has completed high school is the level of achievement a student attains in high school. The National Assessment of Educational Progress (NAEP) indicates that high school students' performance in basic subject areas either improved slightly or remained constant over the past two decades, although minority students showed marked improvements. Nonetheless, a significant number of high school students still lack adequate basic skills. The NAEP indicates that about 14 percent of 17-

Chart 5-3

HIGH SCHOOL COMPLETION RATES BY RACE. Total high school completion rates have been largely stagnant for the last decade, although completion rates of blacks have increased.



Note: Data are percent of 20 to 24 year olds with high school diplomas.
Source: Department of Commerce.

year-olds cannot read above the "intermediate" level, attained by nearly three-fifths of all 13-year-olds. Nearly 60 percent of all 17-year-olds cannot read well enough to "understand, summarize, and explain relatively complicated information," according to the NAEP. International comparisons of science and mathematical competency show U.S. students performing below students from such countries as Japan, South Korea, the United Kingdom, and Spain. Major improvements in the quality of U.S. schools are badly needed. Policies must be implemented that will reward excellence and increase the skills and achievement of U.S. students at all levels of ability.

TRENDS IN HIGHER EDUCATION

An increasing number of jobs in today's economy require college-level training. Moreover, maintaining competitiveness in technological development and innovation requires a pool of well-trained researchers with advanced university degrees.

Box 5–1.—Widening Earnings Differentials

Real median hourly earnings (earnings adjusted for inflation) have increased over the past decade, but since the mid-1970s the hourly earnings of young male high school graduates and dropouts have fallen dramatically relative to the earnings of more educated workers. More educated workers have seen substantial real earnings growth, implying that the economic rewards to education are rising. But real earnings among less educated workers have actually declined, even during the expansion of the 1980s. These changes have occurred across all age groups.

These shifts in relative earnings are still only partially understood, but they are clearly related to the increased competition in the world market for manufactured goods, which has led to a decline in high-wage, low-skilled jobs. The widening earnings differences are attributable to more than just sectoral shifts away from manufacturing, however, for they are also occurring within nonmanufacturing industries. If these changes persist, economic opportunities for low-skilled workers in the United States will be seriously limited. The rising rewards to education, however, will enhance the incentives for workers and students to invest in education and training.

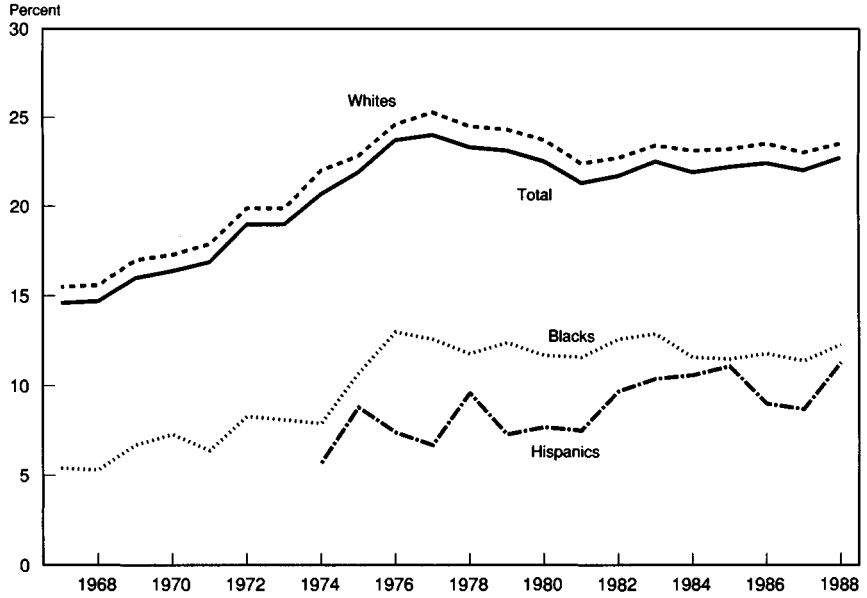
Undergraduate Degrees

The growing demand for skilled workers means a growing need for college graduates. However, the share of 25- to 29-year olds who have completed 4 or more years of college has been virtually unchanged at about 22 percent of the young adult population since the early 1980s (Chart 5–4). Some evidence indicates increasing college enrollment rates among recent high school graduates, but this increase has not yet fed through to college completion rates. Only 12 percent of young blacks and 11 percent of young Hispanics complete 4 or more years of college. Not shown in these data is a small increase in college completions among older students who return to school at a later age.

The rising cost of a college degree may be holding down college completion rates. Since 1980, the cost of a bachelor's degree at 4-year colleges and universities grew twice as fast as the consumer price index. The availability of financial aid (primarily student loans) has helped to offset these mounting costs, but the out-of-pocket expenses paid by students and their families has nonetheless risen.

Chart 5-4

COLLEGE COMPLETION RATES BY RACE. After rising through the mid-1970s, the percent of young adults completing four or more years of college fell in the late 1970s and leveled off in the 1980s.



Note: Data are percent of 25 to 29 year olds who have completed four or more years of college.
Source: Department of Commerce.

Rising relative wages for college-educated workers at least partially reflect a rising demand for their services. Over the long run, higher earnings of college graduates should induce a greater number of students to attend college, even in the face of rising college costs, although a lag may occur before high school students respond to this incentive.

Advanced Degrees

In an increasingly competitive international economy, the United States needs highly trained specialists and researchers; this requires a growing pool of workers with advanced university degrees. While information is available only on the total number of advanced degrees awarded, assuming that these degrees are given to 25- to 34-year-olds, then about 7 percent of young adults currently receive a master's degree in some field, while slightly fewer than 1 percent receive a Ph.D. These percentages have fallen slightly over the past decade, although large increases have occurred in the number of business and management masters' degrees awarded.

Recipients of advanced degrees are disproportionately white males. Although black and Hispanic students receive more than 8

percent of all bachelors' degrees awarded, they receive only 7 percent of all masters' degrees awarded and 5 percent of all Ph.D.s. In contrast, women receive approximately one-half of all masters' degrees. But women still receive a disproportionately small share of the doctoral degrees awarded, particularly in the natural and computer sciences and in engineering. Attracting a wider range of students into advanced study in all fields will expand the pool of future researchers and broaden the diversity of research perspectives, building the Nation's capacity for creative research and technological advance.

ON-THE-JOB TRAINING

Because many jobs require a significant amount of on-the-job training, workers do not stop learning when they leave school. Some of this training involves classroom participation or organized on-the-job teaching, but much of it involves informally learning procedures and responsibilities. Wages of workers who have received on-the-job training are between 10 and 30 percent higher than those of workers with similar characteristics who do not receive such training, a clear indication that on-the-job training results in productivity increases. On-the-job training also often encourages long-term job retention.

Approximately 5 to 12 percent of the work force claim to have participated in formal on-the-job training programs. (Estimates vary depending on how training is defined.) A higher percentage (around 15 percent) indicate that they have received informal on-the-job training with their current employer.

Theoretically, on-the-job training could reduce skill differentials that result from differences in formal education. The evidence indicates, however, that workers with more years of schooling are more likely to receive formal on-the-job training. Training is also more likely among white workers, more experienced workers, and full-time workers. Thus, there is little evidence that on-the-job training offsets other differentials; given the group of workers who receive it, it may well widen them. As skill demands rise, employers in the years ahead may have an incentive to provide on-the-job training to workers who have not traditionally received it.

IMPROVING THE EDUCATION AND SKILL LEVELS OF U.S. WORKERS

The Administration is strongly committed to improved education and training opportunities for all Americans. State and local governments have traditionally accepted primary fiscal responsibility for education, with the Federal Government providing small amounts of financial support—only 8.5 percent of the funds spent on education in 1986–87, for example. The Federal Government,

however, still plays a vital role in shaping educational policy, as exemplified by last fall's Education Summit. For only the third time in history, a President called together the Nation's Governors and the Cabinet to discuss a vital national issue. As a result of this summit, the Administration is working with the Governors to define national performance goals for the educational system, to increase spending for preschool programs, to strengthen efforts at school reform, and to provide greater flexibility in Federal and State funding for local schools.

Improving Elementary and Secondary Schools

In terms of average per pupil expenditures, U.S. spending on elementary and secondary education is greater than that of most other industrialized nations; only Switzerland spends more resources per child. Despite these expenditures, elementary and secondary students do worse on educational proficiency exams than students from many other nations. Thus, the challenge is not to spend more, but to spend more effectively. Elementary and secondary education in this country must be dramatically improved. For instance, the President has challenged the Nation's schools to make U.S. students first in the world in mathematics and science skills by the year 2000. Improving the quality of education and training will require local school *flexibility* to meet the needs of students with diverse backgrounds, *choice* by students and their families to ensure high-quality schools, and *accountability* of educational institutions to achieving performance goals and standards.

The Administration's proposed Educational Excellence Act (Box 5–2) is designed primarily to provide leadership and support to State and local governments to improve the quality and effectiveness of America's schools and the achievement of America's students. Schools are the Nation's most prominent investment in its human resources; more than 4 percent of gross national product is spent on elementary and secondary schools alone. It has become clear over the past 20 years, however, that spending more money does little by itself to guarantee better schools. Once other aspects of the school environment are taken into account, differences in school expenditures have little relationship to educational achievement. Parental background and home environment are crucial determinants of achievement, but so are effective teaching and certain aspects of school organization, as the Educational Excellence Act recognizes.

Good education requires effective teachers. While teachers' real salaries are now at all-time highs and have been rising relative to those of other workers, many educators still express concern that teaching is not attracting the highest quality applicants. Particularly as a host of new career options have opened up for women, many of whom have traditionally trained as teachers, good female

Box 5–2.—The Proposed Educational Excellence Act

Because of its strong commitment to better schools, the Administration has proposed the Educational Excellence Act. This act will strengthen the quality of education in this country by providing:

- Presidential Merit Schools awards to schools making progress in raising educational achievement, creating a drug-free environment, and reducing dropout rates;
- Presidential Awards to excellent teachers;
- Short-term assistance to districts establishing magnet schools;
- Assistance to States developing alternative teacher certification programs;
- Emergency Grants to urban school districts with severe drug problems;
- A National Science Scholars' program to fund top high school students who undertake college work in the sciences, mathematics, or engineering; and
- Matching funds to support historically black college and university endowment fundraising.

college students have often been encouraged to enter other fields. Many States are working to improve teacher quality by attracting better students into teaching and through alternative certification and better preparation and training. Excellence in teaching can be rewarded through merit pay systems and greater public recognition of effective teaching.

Teachers need an effective school environment in order to do their jobs well. The President has spearheaded an effort, together with the Nation's Governors, to establish national educational performance goals, including a challenge to raise high school graduation rates to 90 percent and to make all schools drug free by the year 2000. A number of States have adopted statewide minimum competency tests to identify students and schools that require special attention and to ensure that schools provide students with an identified set of basic skills. In addition, many school districts are trying to involve private employers much more closely in the school system, both by encouraging employers to offer students valuable work experience, and by soliciting advice from employers on the skills needed by students. Some school districts are also exploring expanded school hours, a longer school year, and greater parental involvement in school decisions. The key is not only to allow schools flexibility to use the educational methods most effective for

their students, but also to demand that schools be accountable for the resulting skill levels of their students.

The Administration particularly supports efforts to improve the quality of schools by offering students and their families a greater choice over which school they can attend, thus expanding competition among schools and increasing parental involvement in the education system. Allowing extensive parental choice among schools is a new idea, and from this and related reforms are emerging models of how school districts can implement choice most effectively.

Increasing Participation in Higher Education

The U.S. system of higher education—vocational programs, colleges, and universities—has long been among the best in the world. It is important to maintain the quality of this vital national resource and, given the increasing demand for skilled workers, to encourage even more students to use it. Improving the Nation's elementary and secondary schools will increase the number of students who are prepared for higher education. But other changes may be desirable as well, including those proposed in the Educational Excellence Act.

Counseling high school students about the possibilities and advantages of further education, and encouraging them to continue their studies, could increase college and vocational school enrollments. Greater involvement of private business in schools may also help, if students learn about the advantages of college or vocational education through internships or contact with older workers. Extremely low rates of college and university attendance among minority students are a particular public concern, especially because these students represent an increasing share of new work force entrants. High schools serving these students should prepare and encourage them to continue their education.

Higher education costs money. Because a student cannot use as collateral the career enhancement that higher education is designed to provide, government has come to provide loan assistance as well as grants and fellowships to low-income students who need this help. The Federal Government provides directly or subsidizes a substantial portion of all financial assistance—loans and grants—received by college students. Continuing support for these college aid programs is important, with continuing attention to their ongoing effectiveness and targeting.

Increased access to graduate degree programs is important to maintain a first-rank group of university-level researchers and teachers. The Federal Government has long encouraged advanced study and research. For instance, the National Science Foundation (NSF) finances fellowships to students pursuing advanced degrees in particular scientific fields. The NSF also underwrites fellowships

that promote advanced research and study by minorities and women in the sciences. Given current concerns about potential shortages of personnel in technical and scientific areas, continued Federal funding of these and similar programs should help encourage a diverse group of students to pursue advanced study.

Adult Literacy

Led by the First Lady's work on behalf of adult literacy, this Administration has raised the level of public concern about the 20 million adult Americans who are functionally illiterate. These adults have difficulty performing simple tasks such as filling out a job application or reading a child's report card. Workers who lack basic skills are less productive on the job and experience higher unemployment. Furthermore, adult functional illiteracy can make it harder to improve school achievement; children of parents with low educational skills are also more likely to do poorly in school and to drop out.

Improvements in the Nation's schools will come too late to help these adults. Adult literacy is the focus of a wide range of private sector programs and volunteer organizations. One study estimated that 36 percent of Fortune 500 companies provide remedial basic skills programs to their workers. An estimated 200,000 volunteers provide individual and small-group tutoring to other adults. A variety of Federal, State, and local agencies also support or provide adult literacy services.

This Administration is strongly committed to reducing adult functional illiteracy. By publicly recognizing volunteers and private organizations working in this area, the Administration has increased the visibility of these efforts. The Administration is also committed to better coordinating Federal adult literacy programs, increasing Federal funding for these programs, and expanding research on effective adult literacy teaching techniques.

Job Training

Although improvements in the public and private school system of this country are important, classroom schooling is not the only way to provide a quality work force. On-the-job training may be more appropriate. The primary responsibility for training rests with employers and workers. As new skills are needed, employers have incentives to provide appropriate training to their workers, and workers have incentives to seek such training.

The Federal Government has a history of limited involvement in job training, largely through programs aimed at low-skilled and unemployed workers. The leading public job training program today is the Job Training Partnership Act (JTPA), which works with the private sector to educate, train, and provide employment-related services to targeted groups of workers. JTPA finances programs for

displaced workers, disadvantaged youth, migrant and seasonal workers, Native Americans, and veterans. The public-private partnership created by JTPA is important to its effectiveness. Additional skills are useful to individuals only if the workplace needs them.

The Administration has proposed amendments that improve the targeting and effectiveness of JTPA services for workers facing serious barriers to employment. These amendments include enhanced performance standards to increase accountability; better coordination of services and more attention to individual needs to improve program quality; and more intensive and comprehensive services for disadvantaged youth and adults to improve targeting. In addition, the Administration is implementing the Family Support Act of 1988 (discussed below), which requires all States to provide education, job training, and job placement programs for public assistance recipients.

THE CHALLENGE FOR THE 1990s

To ensure high economic growth in the future, all American workers must acquire effective skills and education. This effort will require building a three-way network consisting of the public schools and other government training programs, the private sector, and the households of workers, parents, and children who are part of both the school system and the work force.

LABOR SHORTAGES, WORKER MOBILITY, AND IMMIGRATION

As the U.S. economy enters the 1990s, concerns are growing about the effects of possible labor shortages on production and wages. Employers in some areas of the country report a shortfall of entry-level workers and are paying wages well above the minimum wage to attract new employees. Other firms report difficulties in hiring suitably trained employees for more skilled positions.

In many cases, limited supplies of workers with particular skills or in particular geographic areas have developed from changes in the labor force, forcing employers to intensify their efforts to attract new workers. In other cases, uneven patterns of economic growth and technological change have altered the skill requirements or location of jobs, resulting in labor shortages for employers in growing areas or industries and job losses among workers whose skills have become obsolete or who find themselves in areas with few job opportunities.

Most of the time the labor market has readily and naturally resolved such imbalances. Employers perceiving a labor shortage have often raised wages to attract workers, encouraging new entry or geographic mobility. Other firms have relocated to areas with a

greater supply of available workers, coupled lower hiring standards with remedial and on-the-job training, or targeted nontraditional sources of labor such as older workers and the handicapped. Immigration has also been an important source of new workers in particular industries and occupations.

Labor markets typically do not experience long-run imbalances, but gradually adjust to changes in supply and demand. Governments can help the market to adjust more promptly and efficiently by avoiding or easing regulations that inhibit labor mobility and restrict the use of alternative sources of labor.

LABOR MOBILITY

In recent years, changes in the composition of output and in methods of production have shifted the demand for workers across industries, occupations, and geographic areas. As some jobs were eliminated, new jobs were created that required new skills and abilities. Because job elimination often occurred in geographic areas or in industries different from those of job creation, some workers were displaced from their jobs while others found new opportunities.

Overall, the evidence suggests that workers have adapted quickly to these structural changes. Researchers estimate that the gross flows of workers between employment and nonemployment vastly exceed the net changes in employment and unemployment reported in the official data. Even when the economy shows no net job creation, some estimates suggest that roughly 10 percent of all jobs each year are new, resulting from new business creation or the expansion of existing businesses. This job creation offsets the annual disappearance of about 10 percent of the jobs in the economy as firms close their doors or lay off workers. Compared with such rapid rates of job turnover, the annual net increase in jobs has been roughly 3 percent during the current economic expansion. *The ability of the United States to combine high job turnover with rapid employment growth and low unemployment reflects the flexibility of U.S. labor markets and the adaptability of the U.S. labor force.*

For some workers, of course, shifts in labor demand can create problems of adjustment, characterized by spells of unemployment or reductions in wages. These problems do not suggest that governments should prevent changes in the labor market. Rather, policies should be designed to ease the transitional disruptions associated with labor market change and to reduce barriers to mobility. The experience of workers who make successful job transitions indicates that encouraging geographic and skill mobility will promote more efficient labor market responses to economic change.

GEOGRAPHIC MOBILITY

All regions have shared in the current economic expansion, enjoying sizable employment gains and declining unemployment rates. But the pace of economic growth over the past decade has varied across regions. Many areas on the eastern and western seaboards and in the Southeast have experienced strong economic growth, aided by industrial diversification and a shift toward services since the mid-1970s. Growth in some areas of the Midwest has been slower, reflecting foreign competition in many heavy manufacturing industries and problems in agriculture. Many local economies in the Southwest still suffer the lingering effects of the decline in oil prices between 1981 and 1986.

National Migration

Free movement of workers within the United States offers a potential source of labor to employers in prosperous areas and potential opportunities for workers in depressed areas. For example, strong employment gains in both the South Atlantic and Pacific Coast regions have stimulated increased migration to those areas. In contrast, net outmigration has occurred from the Midwest and East South Central regions, where economic growth has been less robust.

Despite the widening regional differences in economic opportunities, overall migration rates did not increase in the 1980s. Between 1980 and 1987, about 6 percent of the population moved to a different county each year and about 3 percent moved to a different State, similar to mobility rates in the 1970s.

In part, workers may not have migrated more because in many areas higher living costs offset better labor market opportunities in the 1980s. Regional variation in housing prices widened considerably, as prices for both new and existing homes rose rapidly in various markets of the New England, mid-Atlantic, and Pacific States, but posted declines or only small increases in many parts of the South and Midwest. Because the largest increases in housing prices often occurred in areas with the greatest economic gains and employment opportunities, some workers who might otherwise have migrated to those areas were likely discouraged by high housing costs.

Other factors also influence migration. For example, differences in climate and local public services are an important consideration for many households and partly explain the steady migration from the snowbelt areas of the North to the sunbelt regions of the South and West over the past two decades. A more important factor in the 1980s, however, may have been the aging of the U.S. population. Possibly because of stronger family and social ties, established workers are less likely than younger workers to uproot their fami-

lies and relocate to another part of the country. As a result, the aging of the baby-boom cohort may have reduced the geographic mobility of the population in the 1980s. While an older work force in the 1990s will continue to hold down geographic mobility, increases in the percentage of young, educated workers, who often participate in national rather than regional labor markets, could partially counteract this trend.

Firm Location

Firms also migrate, often relocating to labor markets with larger pools of potential employees. Moreover, new firms, which contribute significantly to economic growth and job creation, base their location decisions, in part, on wage costs and labor quality. In effect, the market often brings the jobs to the people.

In the 1970s, this type of mobility helped to reignite growth in once-depressed areas. As local economies in the industrialized Northeast deteriorated in the wake of the energy shocks of the 1970s, for example, new ventures in light manufacturing and services took advantage of the relatively experienced work forces remaining in those areas. Similarly, much of the improvement in the economies of the sunbelt regions resulted from decisions by employers to locate new plants where labor costs were traditionally low. And while employers in some areas located parts of their operations abroad, by outsourcing production to low-wage countries, some foreign producers set up plants in the United States.

More recently, changing patterns of regional growth have again reduced the regional dispersion in labor markets. Sluggish employment growth has led to an increase in unemployment rates over the past year from their very low levels in New England and in some mid-Atlantic States. At the same time, however, employment opportunities have improved markedly in many Southern States, reducing joblessness in areas experiencing relatively high rates of unemployment.

Recent advances in telecommunications and computers have enhanced a firm's ability to link dispersed locations—both office to office and home to office. As a result, the physical location of workers and jobs may become even less important, increasing the speed at which market forces balance geographic variation in economic growth.

OCCUPATIONAL MOBILITY

As might be expected, economic growth in the 1980s has also led to shifts in employment across occupations and industries. Productivity gains and international competition have eliminated many traditional blue-collar jobs, while the computer revolution and the expansion of the service economy have boosted the demand for technical and service-oriented skills. In response, workers have dis-

played a high degree of occupational mobility, either by switching occupations voluntarily as economic opportunities improved, or out of necessity, after losing a job.

Voluntary Job Changes

About 10 million workers, or 9 percent of employed workers, switched occupations in 1986, the latest year for which data are available. Nearly 90 percent of those workers who switched occupations did so voluntarily, following a career plan, or seeking better pay or working conditions. Such job changes enable workers to improve their economic status and, at the same time, allow the labor market to adjust to changing demand conditions.

The propensity to change occupations is highest for younger workers. Moreover, much of the labor market adjustment to changes in the composition of demand occurs through the initial choice of a career, usually by relatively young labor force entrants. This propensity is not surprising, given older workers' large accumulated investments in training and skill development. But it suggests that the aging of the baby-boom cohort could reduce the occupational mobility of the work force as a whole in the 1990s.

Education offers a possible solution to the demographic factors reducing occupational mobility. Because of the expanded opportunities available to them, more educated workers exhibit higher mobility rates than less educated workers. For tomorrow's work force, greater educational achievement can both broaden workers' initial career options and improve their potential for advancement.

Displaced Workers

Although most workers who changed occupations in 1986 did so voluntarily, 1.3 million persons switched occupations as a result of a job loss, typically reflecting a plant closing, production cutbacks, or elimination of a particular job. Such job displacements are an expected result of economic and technological gains that benefit the population as a whole, but can bring hardship to individual workers. Clearly, the ability of these displaced workers to transfer their skills to another job is important in maintaining the flexibility of the U.S. work force.

Many displaced workers find employment fairly soon after their job loss. More than 25 percent of displaced adult workers who switched occupations in 1986 found new jobs right away. More than 70 percent of workers displaced between 1983 and 1987 were employed in 1988; another 15 percent had retired or otherwise left the labor force.

Significant numbers of displaced workers were not successful in finding new jobs, however. The unemployment rate for displaced workers—14 percent in 1988—is well above the national unemployment rate. And more than one-quarter of those who did find new

full-time positions experienced a drop in earnings of more than 20 percent.

In general, higher education levels and geographic mobility appear to lessen the costs of a job loss. Reemployment rates for displaced workers were significantly higher among more educated workers; higher levels of schooling substantially reduced both the time spent unemployed and wage losses. Workers who moved to another area after a job loss were also much more likely to find another job, with the percentage of displaced workers who moved typically averaging about 13 percent.

Retraining is another important component of strategies to increase work force flexibility, particularly for workers with low general skills. Title III of the Job Training Partnership Act authorizes funds for retraining displaced workers. This program is projected to serve about 260,000 workers during the 12-month period beginning July 1, 1989, with an average training period estimated at 26 weeks.

Finally, the private sector also plays an important role in assisting workers threatened with a job loss. Many employers attempt to reassign workers within the firm when jobs are eliminated by new technologies. In addition, several major union contracts now mandate retraining for workers displaced for this reason.

IMMIGRATION

When labor market mobility is insufficient to eliminate area- or industry-specific labor shortages, employers often turn to immigrants. Throughout U.S. history, economic growth and job opportunities have drawn millions of foreign-born persons to this country, both legally and illegally. Of course, factors influencing immigration include family ties and the freedoms offered by the United States. But whatever their motivation for coming to America, immigrants traditionally have adapted well to the U.S. labor market and have contributed significantly to long-run U.S. economic growth.

Between 1980 and 1988, legal immigration averaged 580,000 persons per year—about one-quarter of 1 percent of the U.S. population. This rate of immigration was above the pace of the 1970s, but well below the average immigration rate prior to 1921, when numerical restrictions on immigration were first introduced. Efforts to control illegal immigration, estimated by the U.S. Census Bureau to have added between 100,000 and 300,000 illegal aliens each year in the first half of the 1980s, led to the Immigration Reform and Control Act of 1986. This act restricted the employment opportunities of illegal aliens by imposing penalties on employers who hired them, but offered legal immigrant status to aliens who were in the United States before 1982.

Do immigrants take jobs that would otherwise go to U.S. workers and depress wages in particular areas and occupations? The many case studies of this question provide no conclusive answer, and disagreement over the existence and magnitude of any effects continues to be widespread. However, one recent study of 120 cities between 1970 and 1980 found that, on average, an increase in the number of immigrants equal to 1 percent of a city's population (more than four times the annual rate of immigration to the United States as a whole) had a negligible effect on the employment status of less-skilled native workers and reduced their wage rates only about 1 percent over that 10-year period.

Moreover, numerous studies suggest that the long-run benefits of immigration greatly exceed any short-run costs. The unskilled jobs taken by immigrants in years past have often complemented the skilled jobs typically filled by the native-born population, increasing employment and income for the population as a whole.

Currently, U.S. immigration policy is based primarily on the humanitarian principles of family reunification and refugee resettlement. Fewer than 10 percent of immigrants in recent years were admitted because of their skills. Less skilled immigrants will clearly continue to be a valuable resource for employers. Yet, with projections of a rising demand for skilled workers in coming years, the Nation can achieve even greater benefits from immigration by augmenting this traditional emphasis on family reunification with policies designed to increase the number of skilled immigrants. Immigrants with more education or training will likely make the greatest contributions to the U.S. economy, suggesting that basic skill levels could be one guide to admitting new immigrants under a skill-based criteria.

POLICIES TO ADDRESS SKILL SHORTAGES

Policies designed to increase the quality and extent of education among today's youth may be the most important investment society can make to promote greater labor market flexibility in the years ahead. Continuing efforts at all levels of government to remove barriers to geographic and occupational mobility also are warranted.

For many workers, the lack of affordable housing restricts mobility. Linking Federal housing subsidies to tenants and making the subsidy portable is one way to overcome housing affordability barriers to greater geographic mobility. Eliminating State and local laws—such as rent control and overly restrictive building codes and zoning regulations—that limit the availability of such units, and enactment of the Administration's proposal, Homeownership and Opportunity for People Everywhere (discussed below), could also increase labor flows to rapidly growing areas.

Similarly, efforts to revitalize economically depressed areas through removal of barriers to growth could transfer job opportunities to areas of high unemployment. The Administration's commitment to develop public/private partnerships through the creation of urban enterprise zones can encourage private investment and job creation in these areas.

Immigration policy can also contribute to the smooth operation of the U.S. labor market in the 1990s. While continuing the humanitarian principles that have shaped immigration policies in the past, the Federal Government can encourage the immigration of workers with skills important to the economy, both by increasing the number of visas for workers with a job in hand and by increasing quota levels for potential immigrants with higher levels of basic and specific skills. This approach will strengthen the prospects for successful assimilation of immigrants into U.S. society and increase the economic gains from immigration for the population as a whole.

Efforts to expand domestic sources of labor will also help prevent potential shortages. The increasing share of healthy active elderly persons in the population could be a particularly useful labor market resource. In the years ahead, it may be increasingly common for employers to provide incentives for older workers to postpone retirement, or to accept part-time work after retirement, giving firms continued access to the expertise of the Nation's most experienced workers.

IMPROVING THE OPPORTUNITIES OF LOW-INCOME HOUSEHOLDS

This Administration is committed to an antipoverty agenda calling on the Federal Government, in partnership with State and local governments, to:

- Maintain a strong economy to ensure economic opportunities for unemployed and underemployed Americans.
- Work with the private sector to provide the training, assistance, and incentives that will help those with the ability to support themselves to achieve independence and self-sufficiency.
- Supplement family resources when necessary to provide ongoing and adequate support for those in need and unable to work, particularly the elderly and severely disabled.

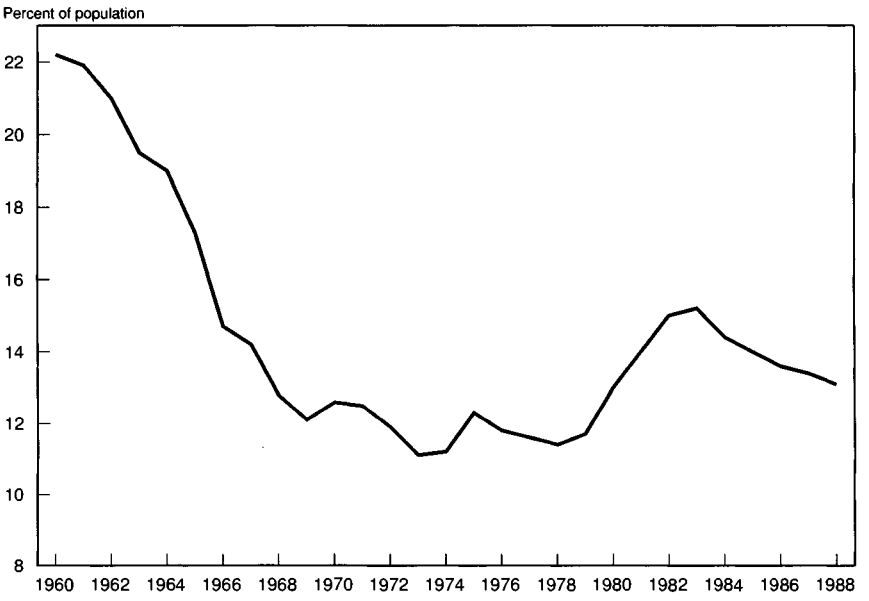
Integration of more low-income households into the economic mainstream will not only help these families gain economic independence, but will also increase the productive resources of the Nation and help maintain economic growth through the 1990s.

POVERTY IN THE UNITED STATES

The primary measure of economic need in the United States is the poverty rate, the percentage of individuals who live in families with income below the poverty line. (The poverty line, which varies with family size, is an approximate measure of the minimal amount of income necessary to purchase food, shelter, and other necessities.) As Chart 5–5 indicates, the poverty rate fell steadily through the 1960s, reaching a low of 11.1 percent in 1973, but rose again to a peak of 15.2 percent during the recession of the early 1980s. By 1988, the poverty rate was down to 13.1 percent, with 32 million individuals below the poverty line. While the poverty rate has fallen steadily for the past 5 years, too many families still confront daily problems of economic need.

Chart 5-5

POVERTY RATE. The poverty rate rose sharply in the early 1980s, but has since declined.



Source: Department of Commerce.

The aggregate poverty rate obscures significant differences among different types of households. The elderly have experienced the most dramatic decline in poverty rates; by 1988, the poverty rate among elderly persons was at an historic low of 12 percent. While poverty has fallen among the elderly, however, the poverty rate among children has risen, as Chart 5–6 shows. In 1988, one child in five lived in a family with income below the poverty line.

High poverty among children is closely related to the growth of female-headed households in the population, who have disproportionately high poverty rates. In 1988, more than one-half of all poor children lived in female-headed families. In addition, poverty rates are much higher among minorities than among whites, as Chart 5–7 indicates. While 10.1 percent of white individuals were poor in 1988, 31.6 percent of black individuals were poor, and 26.8 percent of Hispanic persons were poor. In female-headed black and Hispanic families with children, poverty rates approached 60 percent.

DISTINGUISHING AMONG THE POOR

Individuals who can work may lack training, available jobs, or access to adequate and affordable child care. In the long run, these individuals may be able to support their families, but need short-term assistance to reach self-sufficiency, such as temporary income support, child care, assistance in household management, job training, and assisted job search. Government programs to help these individuals must balance the need for adequate short-term assistance with the goal of long-term independence.

Not all poor people need this type of assistance. Some are temporarily poor, but have the resources to escape poverty quickly without any government assistance. The 6 percent of the poor who are full-time students are in this category. Other poor individuals cannot be expected to earn the income necessary for their support. This group includes both children and elderly persons, who together constitute almost one-half of the poor, and those with serious mental or physical disabilities. If these individuals do not have family support, society must provide the safety net of resources necessary for their support.

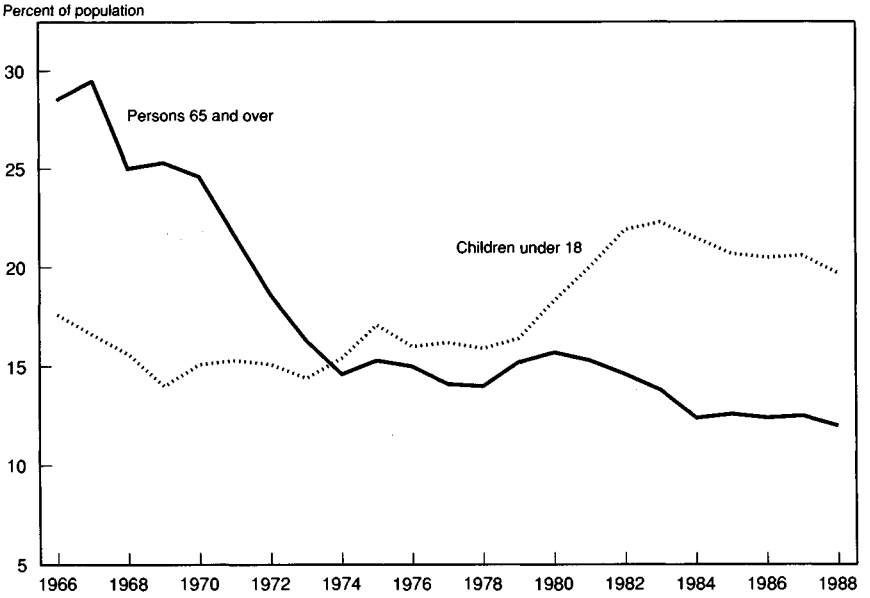
It is sometimes quite difficult to determine whether a particular individual can work. For instance, single mothers with very young children may be unable to work because of household demands rather than because of any inherent lack of earning ability. Arguments over the generosity and scope of public programs often revolve around these difficult judgments. The remainder of this section will focus on those low-income households who are generally considered able to benefit from employment-based strategies.

THE VALUE OF A HEALTHY ECONOMY

For the employable poor, the most important government responsibility is to maintain a stable and healthy economic environment that offers positive incentives and opportunities for all workers. The burden of unemployment is disproportionately borne by low-wage and less skilled workers. Indeed, the high poverty rates of the early 1980s reflected the high unemployment rates experienced at that time.

Chart 5-6

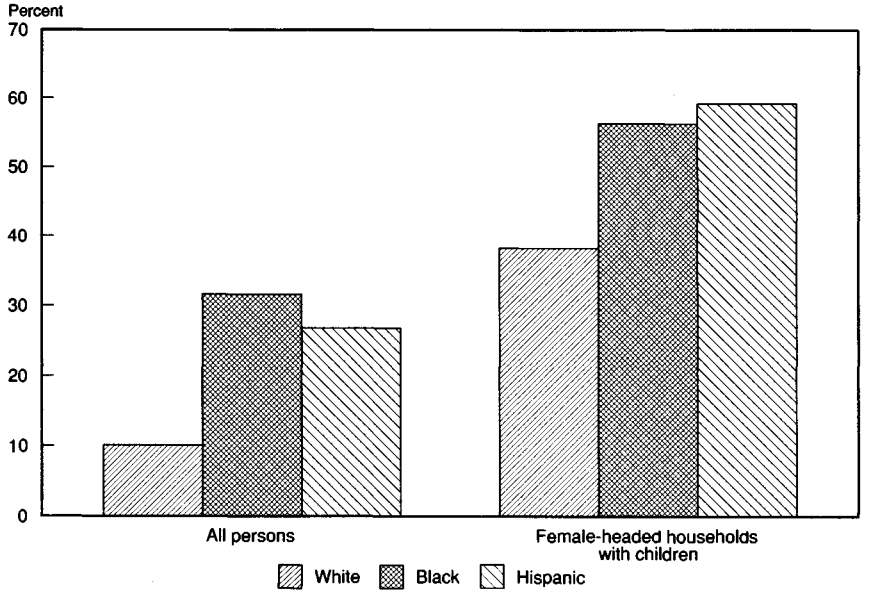
POVERTY RATES BY AGE. In the 1980s poverty rates of the elderly reached a record low, while children's rates remained high.



Source: Department of Commerce.

Chart 5-7

POVERTY RATES BY RACE, 1988. Poverty rates for blacks and Hispanics exceed those for whites, while rates for female-headed households are high regardless of race.



Source: Department of Commerce.

In contrast, when unemployment falls and the demand for workers increases, unemployed workers can find jobs and underemployed workers can increase work hours. Younger low-income households, particularly male-headed households, typically show strong income growth in an expanding economy, predominantly because of increased hours of work. The recent declines in poverty have occurred largely because of the sustained economic expansion.

TARGETED ANTIPOVERTY PROGRAMS

While a healthy economy is important in any government strategy to fight poverty, by itself it is not enough. Not all low-income households benefit from economic expansion. Elderly households, who are largely unable to expand their work hours, tend to show few gains. Female-headed households have not experienced substantial income gains during economic expansion. One reason why poverty rates have not fallen further during the economic expansion of the 1980s is the increase in female-headed families, whose incomes have been less responsive to economic growth. Thus, general policies that foster economic growth must be buttressed by strategies aimed at assisting particular groups.

Women and Children

Recent Federal initiatives, currently being implemented by this Administration, are designed primarily to provide new economic opportunities for poor women and their children. A disproportionately large share of poor families are headed by women—53 percent in 1988—and 90 percent of these families contain children under age 18. The steady increase in the share of poor families accounted for by female-headed families has been referred to as the feminization of poverty. Concern over this trend, coupled with concern over high children's poverty rates, has resulted in a new approach to assistance for this population.

The primary income assistance program designed to aid low-income single-parent families has long been aid to families with dependent children (AFDC), which provides income supplements to eligible low-income families with children. Responsibility for AFDC's funding and program structure is shared among the Federal and State governments. The median State in January 1989 paid AFDC benefits of $360 per month to a woman with two children (the average AFDC family) and no other income. When combined with food stamps worth $210 per month, this support provided the family with benefits equivalent to $570 per month, 73 percent of the 1988 poverty level. AFDC benefits are set by the States, however, so that a family receiving AFDC and food stamps will have benefits equivalent to less than 50 percent of the national poverty line in some States and close to 100 percent in others. Although income from AFDC plus food stamps is the base level of economic support

available to a family, most poor families receive additional public assistance from other programs (such as fuel assistance) or they have other income sources, thereby raising their total resources relative to the poverty line. In addition, all AFDC recipients are eligible for health care assistance through medicaid.

AFDC was initiated in the 1930s to aid needy children without fathers. One of its primary purposes was to prevent widows from being forced into the labor market, allowing them to remain at home with their children. The changing nature of the program and the rising participation of women in the labor force, however, have resulted in significant recent changes in AFDC. Concern over long-term reliance on AFDC has led to an emerging consensus that AFDC participants need more than cash assistance; if they can work, they should also be expected to participate in education, training, and job placement programs to enable them to become economically self-sufficient. The "workfare" experiments run by a variety of States in the 1980s indicate that targeted work experience, job search, and job placement programs can be cost-effective techniques that assist AFDC recipients to work more and rely less on AFDC income. Furthermore, the individuals who benefit most from these programs are those women with little or no recent work history.

The success of these State experiments led to passage of the Family Support Act of 1988, which requires all States to establish a Job Opportunities and Basic Skills Training (JOBS) program for eligible AFDC recipients. The Administration is strongly committed to working with States to ensure that the JOBS program is effectively implemented to expand employment opportunities for poor women, as well as for the small number of two-parent families currently receiving AFDC. AFDC recipients who are able to work are expected to recognize their mutual obligation to their community: in exchange for AFDC support, they are required to participate in JOBS. States are given flexibility to design the education, job training, and employment programs most suitable for their population and economy. The JOBS programs must provide child care assistance as well as transitional child care assistance and medicaid coverage for up to 12 months after an individual leaves AFDC because of increased earnings.

The Administration is also committed to enforcing child support payments. Child support payments ensure that both parents share the economic burden of raising children. In 1987, only 44 percent of poor female-headed families with children had child support awards, and only 72 percent of these families (32 percent of all poor female-headed families) received child support payments, many of which were less than the award. In recent years, States and the Federal Government have sought to levy and enforce child support

orders on absent fathers. The Family Support Act strengthened the ability of States to establish mandatory payment guidelines and to locate fathers and directly withhold their wages.

This policy alone will not have substantial effects on the poverty rate among women and children, both because absent fathers of many poor children are unemployed or employed at very low wages and because child support collected on behalf of AFDC families is primarily used to offset AFDC expenditures and thus does not produce much of an increase in overall family income. But, for women who increase their earnings and move off AFDC, child support payments can be an important additional source of income. Moreover, child support enforcement has the added social benefit of emphasizing that both parents have ongoing responsibility for their children.

The Working Poor

Providing incentives and opportunities for employment and better jobs among low-income families increases their economic independence, decreases government spending, and increases the productive work force of this country. About 48 percent of all poor families contain an employed worker, while 16 percent contain a full-time, year-round worker. Increased economic opportunities that allow these working poor families—especially those working full-time and year-round—to escape poverty will also provide incentives for other low-income persons to increase their employment.

For these reasons the Administration has proposed a new and refundable income tax credit, the child credit, for families with an employed parent and young children. This credit would increase income by lowering taxes among low-income families or by providing cash supplements to families with no tax liability. In addition, the Administration proposes making the existing dependent care tax credit refundable to increase its usefulness to poor families with child care expenses. This approach, rather than the alternative of subsidizing child care centers, allows families to choose the type of child care they need and involves less government regulation.

The Administration has also proposed a dramatic expansion in the Head Start program for preschoolers. This program significantly improves children's subsequent school performance and would also help low-income parents meet their child care needs. The 1991 budget requests a $500 million increase in budget authority for Head Start, a 36-percent increase over 1990 spending.

The President has signed an increase in the minimum wage to $4.25 per hour by 1991, and he sought and obtained a lower training wage for newly employed teenagers. This innovative provision will encourage employers to hire and train young workers and will

offset the loss of employment opportunities that teenagers have historically experienced when the minimum wage is increased.

Providing incentives for labor market activity among low-income households is particularly important because it offers role models for children and teenagers in poor households. Teenagers and young adults in low-income families need to be convinced that those who play by the rules—finish high school, stay off drugs, do not get pregnant as a teenager, and find full-time work—can escape poverty and make a better life.

Lack of medical insurance can also cause problems for the working poor. Controlling for other differences, the uninsured are less healthy and receive less medical care than the insured; they also pay a higher share of medical expenses out-of-pocket. In 1987, 29 percent of all poor individuals were uninsured. In fact, the rate of uninsurance is higher among the working poor than among the nonworking poor because persons who receive AFDC (or supplemental security income, a program for poor elderly and disabled individuals) also have access to publicly provided insurance through medicaid. Many low-wage jobs, especially jobs in small businesses that cannot obtain low-cost group insurance coverage, do not offer health insurance.

Recent expansions in medicaid eligibility mandate that States must provide medicaid coverage to pregnant women and children under age 6 in families below 133 percent of the poverty line by April 1990. At their option, States may expand coverage to pregnant women and infants in families up to 185 percent of the poverty line. These medicaid expansions may be particularly useful in reducing infant mortality in low-income families.

Implementing the President's National Drug Control Strategy will help decrease the health problems experienced by drug abusers and their families. Medical care for women and children has become particularly costly in certain inner-city locations where cocaine addiction of mothers is linked to serious infant and maternal health problems. Although the number of poor mothers who are drug abusers is very small, the visibility and cost of the problems they create underscore the need to wage an effective war on drugs.

The Unemployed

The Administration's efforts to improve the quality of schools, its war on drugs, and its education and training programs for disadvantaged persons are all designed to bring more individuals into productive employment. After 7 years of economic growth, the share of the poor who are unemployed, or seeking more work than they can find, has fallen. But some individuals who may be able to work remain unemployed, often because they lack the necessary labor market experience, work skills, or training. This condition

may be particularly costly to younger persons who have never held a steady job.

The Job Training and Partnership Act of 1982 established a structure of job training programs directed by private firms through local private industry councils. JTPA is projected to provide job training and placement services for 1.3 million economically disadvantaged individuals in the 12 months beginning July 1, 1989. Indeed, the expanded work programs for AFDC participants are expected to rely heavily upon local JTPA programs for job placement. The Administration's proposed amendments to JTPA (discussed above) include the creation of two special programs targeted on disadvantaged youth and adults. The Administration has also proposed a challenge grant program, Youth Opportunities Unlimited, for youth in high-poverty inner-city or rural areas.

The need to increase employment is particularly acute among minority populations in high-poverty urban areas, a group that is sometimes referred to as the underclass. Overall, unemployment rates among minority youth have fallen. In areas of concentrated poverty and deprivation, however, there is evidence of high rates of drug use, low educational achievement, high rates of teenage pregnancy, and alienation from legitimate employment.

No single policy can solve the multiple problems experienced by individuals in these areas; a multidimensional strategy is needed. Administration initiatives to improve inner-city public schools, combined with anti-drug efforts, job training, and job placement, should help some individuals. Targeted programs to geographically defined high-poverty areas, such as urban enterprise zones, may also help focus resources on concentrated poverty and its related effects on a community.

Several effective programs have brought young persons from highly disadvantaged backgrounds into the labor market. The Job Corps has 25 years of experience in providing such teenagers with education, job training, and placement. Research evaluations suggest that Job Corps participants are employed more, earn more, and are less likely to become involved in criminal activity than persons of similar background who were not in the Job Corps. Promising model programs include JOBSTART, which focuses on high school dropouts with low literacy skills, and STEP, which provides summer job training and educational services to teenagers.

Homelessness and Housing

This Administration has proposed expanded funding and new programs to address the problem of homelessness and housing affordability among low-income families. One of the more visible problems in urban areas in the 1980s has been homelessness. Not only is homelessness a social problem, but it is also a barrier to effective participation in the labor market. Reliable estimates of the

homeless population are difficult to obtain, and few national estimates have been made. An extensive recent study estimated that 500,000 to 600,000 persons were homeless in the United States over a given week in 1987, while approximately double that number experienced homelessness at some point during that year. As the study acknowledges, however, no one knows exactly how many homeless people there are in the United States.

The homeless population is generally composed of at least three distinguishable groups. First, there are those who have a history of serious mental illness. Although estimates vary, most studies indicate that around one-third of the homeless population are mentally disabled. This group is often the most difficult to reach and the least likely to use temporary shelters and care facilities. Second, homeless families, primarily low-income women and children, constitute about one-quarter of the homeless, and tend to be actually on the streets for the shortest period of time before they enter the public assistance system. The remainder of the homeless are predominantly single men between the ages of 20 and 50. Many of these men work intermittently; some receive food stamps or small payments from State assistance programs; many have ongoing problems with alcohol or other drugs.

Changes in urban housing markets are often cited as an important cause of homelessness, along with the deinstitutionalization of the mentally disabled, drug abuse, spouse abuse, and other problems. Rising rents and land prices and the rejuvenation of downtown areas have displaced low-income populations. The availability of boarding houses and rooms for rent, typically used by poor single adults, has diminished in most cities. In some areas, rent control, restrictive building codes, and zoning regulations also may have decreased the stock of low-income housing.

The President has proposed programs that will provide housing assistance and supportive services to the most troubled homeless individuals as part of his HOPE initiative (discussed below). The Administration also supports full funding of the Stewart B. McKinney Homeless Assistance Act. Passed in 1987, the McKinney Act was the first legislation to authorize major direct Federal expenditures for emergency food, shelter, counseling, and other services for the homeless. For the past 3 fiscal years, the Congress has appropriated less money than it authorized, a situation the Administration seeks to rectify in its proposed 1991 budget.

Homelessness is a serious issue, but housing affordability is the dominant housing problem confronting most poor. It is estimated that more than 40 percent of the poor paid more than one-half of their income for housing in 1985. The Administration continues to emphasize housing vouchers or other tenant subsidies as the most efficient way to address low-income housing needs.

The Administration has also proposed a major new program, *Homeownership and Opportunity for People Everywhere* (HOPE) to expand housing opportunities for the poor. This proposed legislation includes tax incentives to encourage greater construction and rehabilitation of low-income housing and to encourage savings for downpayments; opportunities for residents of federally subsidized housing projects to have more voice over their housing, through tenant management and potential tenant-purchase plans; and 50 Housing Opportunity Zones that would establish Federal-local partnerships in metropolitan jurisdictions to remove barriers to affordable housing.

Disabled and Employable

The Administration supports a major new initiative to increase the economic opportunity for disabled persons. Surveys estimate that between 20 million and 50 million Americans are disabled. This large range reflects very different definitions of disability; while every study counts the 650,000 persons in wheelchairs, not all of them include the more than 24 million with hypertension. Of course, many disabled persons are fully employed, especially if a broad definition of disability is used. Many others are elderly, or do not seek employment. But because some disabilities limit the range of work options available and because some of the disabled have suffered discrimination in the workplace, disabled individuals suffer a disproportionate incidence of poverty. In 1988, 28 percent of poor household heads reported that they were not working because they were ill or disabled. Conversely, among those household heads who report that they do not work because they are ill or disabled, fully 42 percent are poor.

The primary program explicitly designed to assist disabled low-income households is supplemental security income, a Federal program available to individuals with low incomes who are certified as unable to work. In addition, those whose disability occurred on the job are typically able to receive workers' compensation, while those who have worked in the past are often eligible for social security disability payments. Several Federal programs also provide funds for work rehabilitation for the disabled.

The Administration supports the Americans with Disabilities Act (ADA), designed to lower barriers to employment, public services, and public facilities for the disabled population. Inaccessible workplaces and discrimination against disabled individuals have prevented many disabled persons who are able and willing to work from realizing their full economic potential. Major progress occurred with the passage of the Rehabilitation Act of 1973, which required institutions receiving Federal funding to make their facilities and services accessible to disabled individuals. Survey results still indicate that several million disabled individuals who want to

work are unable to find employment, however, and the ADA is designed to open new employment opportunities for these persons.

FUTURE DIRECTIONS

Experience has shown that designing policies to alleviate poverty is a difficult task. Among the issues that will continue to be debated in the years ahead are the following:

How can low-income households be integrated into the economic mainstream? A delicate balance must be maintained between providing adequate short-term assistance and preventing long-term dependence. Government programs should move people toward employment and self-sufficiency. A growing job base and a healthy economy are crucial ingredients of this strategy.

How can social policy goals be balanced against budget realities? In a period of budget stringency, program expenditures must be effectively targeted to those who will benefit the most from them.

One of the major challenges of the 1990s will be to develop effective antipoverty programs that further reduce economic need in this country by increasing the opportunities for productive employment among those who are currently poor.

MAINTAINING LOW UNEMPLOYMENT AND LOW INFLATION

The civilian unemployment rate in 1989 averaged 5.3 percent, its lowest level since 1973. And the percentage of the civilian population employed reached 63.0 percent, its highest level ever. Recent concerns about labor shortages, however, have led some to ask whether further efforts to reduce unemployment might lead to a significant pickup in wage and price inflation. So far in the current expansion, inflation has remained relatively moderate. The GNP fixed-weight price index, the broadest economy-wide measure of inflation, rose 4.1 percent in 1989, well below its 9.8-percent rate in 1980 and down from 4.5 percent in 1988.

Underlying the concern that unemployment and inflation are linked is the widely accepted view that, when inflationary expectations are stable, the economy has a minimal rate of unemployment consistent with nonaccelerating inflation. The nonaccelerating inflation rate of unemployment, often referred to as the NAIRU or natural rate of unemployment, is an important guide for policymakers. It reflects unemployment associated with job changes (frictional unemployment) and with the mismatches between workers and jobs that occur in a changing economy (structural unemployment). Moreover, when the unemployment rate falls below the NAIRU, labor markets tighten, and employers face greater pressures to raise wages in order to maintain a qualified work force

(Box 5–3). Some have argued that at current levels of joblessness, further large increases in output could drive the unemployment rate below the NAIRU, thus triggering accelerating wage increases that, in turn, would threaten the progress in reducing price inflation made in the 1980s. Although some concern is justified, the evidence suggests that the United States can achieve sustained growth without accelerating inflation. The Administration projections in Chapter 2, for instance, show 3.0-percent average growth through 1995 and a modest decline in inflation.

THE SECULAR DECLINE IN UNEMPLOYMENT IN THE 1980s

Because alternative policies to reduce unemployment may have sharply different implications for the behavior of inflation, it is important to distinguish among the different causes of unemployment.

Demand-related, or cyclical, unemployment, by far the most visible cause of variation in joblessness, refers to unemployment that occurs when the overall demand for workers falls. The sharp increases in the unemployment rate that occur during recessions clearly represent cyclical unemployment. Much of the decline in joblessness in the 1980s reflected the strong recovery from the 1982 recession and the long expansion that followed.

Frictional unemployment refers to the transitional unemployment that occurs when workers enter the labor market or change jobs. Structural unemployment is joblessness associated with a general lack of skills or with labor market mismatches between workers and jobs. The decline in unemployment over the past decade also reflects a drop in frictional and structural unemployment, breaking an upward trend evident since 1969.

In particular, although unemployment rates were successively higher at each business cycle peak in 1973, 1979, and 1981, the unemployment rate in 1989 stood 2 percentage points *below* its 1981 level (Chart 5–8). Moreover, the decline in the unemployment rate in the current expansion has *not* led to a significant acceleration in wage inflation. These two facts together suggest that frictional and structural unemployment, and hence the unemployment rate consistent with stable inflation, fell during the 1980s.

THE EFFECTS OF DEMOGRAPHIC AND LABOR FORCE TRENDS

To a significant extent, the decline in the NAIRU in the 1980s reflected changes in the composition of the labor force, especially the aging of the baby-boom generation. As shown in Chart 5–9, unemployment rates are higher for young workers (aged 16 to 24) than for adults, reflecting both the relative inexperience of new

Box 5-3.—The Determinants of Nominal Wage Growth

Although the process of wage-setting is often quite complex, key determinants of nominal wage growth are current labor market conditions, past and projected rates of inflation, and labor productivity growth. Employer costs for fringe benefits are often influenced by events outside the labor market—such as the acceleration in health care inflation in the past few years. Because employers are ultimately concerned with total labor costs, however, the key determinants of wage growth also determine growth in total labor compensation beyond the short run.

The availability of labor influences both employers' willingness to pay higher wages and workers' efforts to seek larger pay increases. Relatively low unemployment rates increase upward pressure on wages as firms raise pay to attract new workers and retain their current employees. Similarly, high unemployment rates tend to hold down wage increases.

Recent rates of wage and price inflation and expectations about future inflation also affect wages. If wages are expected to be higher in other parts of the economy, because of recent wage increases at other firms or expectations of future wage increases, then workers and employers will probably settle on a higher wage. Past rates of price inflation may influence wages if workers and employers agree to "catch-up" adjustments to preserve real wage levels, while employees who expect high inflation will demand larger wage increases to maintain their future standards of living. Moreover, employers will be more willing to grant wage increases if they expect to be able to raise prices to offset their higher labor costs.

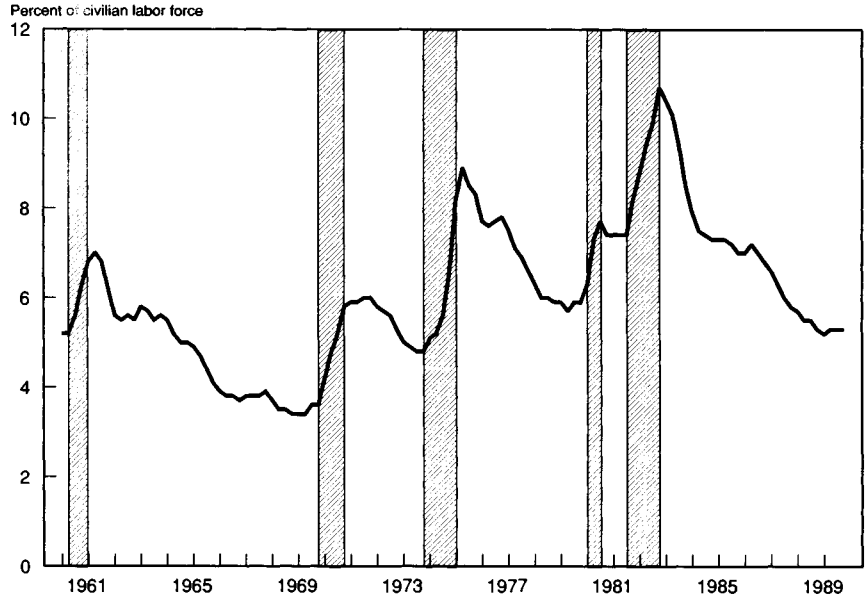
Over time, real wage increases have roughly matched the long-run rate of productivity growth in the economy. Pay hikes associated with productivity gains do not increase the relative cost of labor to an employer, and so do not contribute to an acceleration of price inflation. In this sense, productivity gains are important to workers; wage increases that are not matched by higher prices generate an improvement in living standards.

labor market entrants and higher rates of job turnover as young workers move in and out of various jobs during their search for a career.

The relative importance of young workers increased in the 1960s and 1970s, and this shift toward groups with relatively high rates of unemployment caused the overall unemployment rate to rise. In addition, overcrowding in lower skilled labor markets associated

Chart 5-8

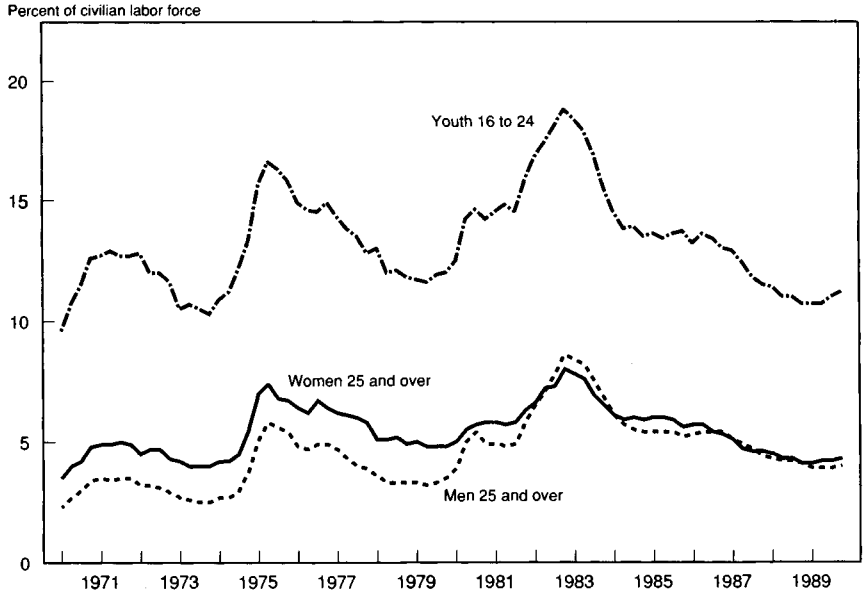
CIVILIAN UNEMPLOYMENT RATE. The unemployment rate has declined significantly during the current expansion.



Note: Shaded areas represent recessions; data are quarterly.
Source: Department of Labor.

Chart 5-9

UNEMPLOYMENT RATES BY AGE AND SEX. Youth unemployment rates are higher than rates for adults. Rates for adult men and women converged in the 1980s.



Note: Data are quarterly.
Source: Department of Labor.

with the baby-boom cohort exacerbated the unemployment problems for this group. The differential between youth and adult unemployment rates widened in the 1960s and 1970s. It is estimated that the higher percentage of young people in the labor force and their rising relative unemployment rates added close to 1.5 percentage points to the NAIRU between the 1950s and late 1970s.

As the baby boomers moved into age groups with lower average frictional and structural unemployment rates in the 1980s and were followed by the smaller baby-bust cohort, these trends reversed, contributing about 0.5 percentage point to the decline in the NAIRU in the 1980s. The unemployment rate for youth also fell as smaller cohorts led to decreased crowding in the youth labor market, probably reducing the NAIRU another 0.3 percentage point over the past decade. These favorable demographic trends should continue well into the 1990s.

Labor force participation among adult women rose steadily in the 1960s and 1970s, and higher unemployment rates for that group also boosted the aggregate unemployment rate over that period. Women's labor market participation continued to increase in the 1980s, but their unemployment rate fell to about the same rate as for adult men. This decline in joblessness among women, coupled with women's rising participation, has also contributed to the decline in the NAIRU in recent years.

LABOR MARKET MISMATCHES AND STRUCTURAL UNEMPLOYMENT

A reallocation of workers across sectors in response to changing supply and demand influences the amount of structural unemployment associated with mismatches between workers and jobs. Recent changes in structural unemployment can be seen across a variety of occupational, industry, or geographic markets. Some insight into these changes can be obtained by focusing on a key feature of the mismatch problem—the coexistence of job vacancies and unemployment.

For the most part, vacancies and unemployment move in opposite directions, with faster economic growth leading to falling unemployment and rising vacancies, while rising unemployment is associated with declining job vacancies. That pattern is consistent with the view that much of the unemployment variability in the United States over time represents changes in cyclical unemployment. Vacancies and unemployment sometimes move in the same direction, however, reflecting a change in structural unemployment arising from localized, industry-specific, or occupation-specific supply and demand mismatches.

The Conference Board's index of help-wanted advertising normalized by the level of payroll employment provides a very rough

proxy for a job vacancy rate and illustrates the relationship between unemployment and job vacancies. Over shorter periods, comparisons show opposite movements in the unemployment and vacancy rates, reflecting the effects of economic recessions and expansions. A gradual upward trend in both the unemployment and the vacancy rate is evident throughout much of the postwar period, however, suggesting that structural imbalances in the labor market worsened through the 1970s. In 1989, the unemployment rate and the vacancy rate were both below their levels in 1979, indicating that these imbalances lessened in the 1980s. A continuation of this trend would reduce the unemployment rate consistent with stable inflation further in the 1990s.

Measures of the dispersion of unemployment across different labor markets can also be useful in assessing the efficiency of labor market adjustment. Uneven growth across markets will initially generate uneven patterns of unemployment and employment changes. Over time, however, efficient labor markets will tend to reduce those initial imbalances, as workers in labor surplus areas—geographic, industrial, or occupational—move to areas with better job prospects.

Across geographic markets, the evidence suggests that labor market imbalances worsened in the 1980s; after holding fairly steady during the 1970s, unemployment dispersion among States increased sharply through most of the 1980s. This rise in geographic dispersion reflected, at least in part, industry imbalances coupled with the industrial composition of particular regions. International competition and the decline in oil prices led to layoffs in the Midwest and Southwest, while strong growth in services and light manufacturing fueled employment gains in the coastal regions. It is difficult to judge whether the widening in unemployment dispersion represents unusually large sector-specific economic shocks or declining labor market mobility. As noted earlier, the geographic dispersion in jobless rates declined significantly over 1989 as the labor market began to adjust to those earlier shocks.

The existence of structural labor market imbalances clearly underscores the importance of labor mobility in reducing structural and frictional unemployment, and hence the unemployment rate consistent with stable inflation. Policies to improve the mobility of the work force and to improve the efficiency with which workers and employers find job matches could generate further declines in structural unemployment without building up inflationary pressures.

OTHER CHANGES IN LABOR MARKETS

Some researchers argue that significant changes in the U.S. economy also may have unexpectedly tempered wage inflation in

the 1980s. Most prominently discussed is the increased exposure of U.S. producers to international competition. As the foreign exchange value of the dollar rose in the early 1980s, employment in a number of core manufacturing sectors suffered, resulting in unusually large layoffs that extended to workers with more seniority. This increased openness to international competition may have had an important impact on the perceived unemployment risks associated with aggressive wage demands, so that job security gained prominence over wage gains in the priorities of many workers, reducing the inflationary pressures associated with any given level of the unemployment rate. Some evidence suggests that such considerations were important in selected industries particularly vulnerable to foreign competition. Because these industries constitute a small part of the overall U.S. economy, however, international competition thus far appears to have had only a small effect on economy-wide wage behavior.

A second oft-cited, and related, argument is that the declining importance of organized labor in the U.S. work force reduced the contribution of noncompetitive union wage premiums to aggregate wage inflation in the 1980s. The proportion of the private work force that is unionized fell sharply in the 1980s, from more than 20 percent in 1979 to around 14 percent in 1988. Fewer workers receiving union wage premiums would reduce average wage growth, all else equal. In addition, proponents of this line of reasoning argue that the focus on job security in the 1980s was especially important in the union sector, where management became more aggressive in negotiating with workers in response to international and nonunion competition. Data from the employment cost index indicate that union wages have risen less rapidly than nonunion wages since 1983, after rising more rapidly throughout the late 1970s and early 1980s. But that shift may partly reflect the typical cyclical behavior of the union-nonunion wage differential. Moreover, several studies suggest that, although the declining strength of unions may have slowed wage inflation in the union sector, it has had only a small effect on aggregate wage inflation.

Finally, some analysts point to greater flexibility in both pay schedules and employer-employee relationships as evidence that wage determination in today's economy differs fundamentally from that in past years. Many union contracts now use lump-sum bonuses as a means of avoiding base wage increases during periods of uncertain demand. Moreover, profit-sharing and employee stock ownership plans have become more prevalent in recent years, tying workers' pay at some firms more explicitly to overall company performance. In addition, a greater use of part-time and temporary workers by firms has increased the ability to adjust employment

levels promptly during periods of slack demand by lowering the costs typically associated with work force changes.

In general, it is difficult to assess the importance of any one of these factors in changing the fundamental nature of wage determination in the 1980s or to forecast whether such trends will continue. Taken together, the patterns over the past decade may have led to some small downward shift in wage inflation. It seems imprudent, however, to rely heavily on the continuation of these favorable factors in forming policies for the 1990s.

LOOKING AHEAD

The design of sound economic policies depends on the level of the NAIRU. That level provides a gauge of how far the actual unemployment rate can be expected to decline without a significant buildup of inflationary pressures, and thus represents one goal of an expansionary macroeconomic policy. Conversely, it is also an approximate measure of the extent of frictional and structural unemployment in the U.S. economy; reducing the unemployment rate consistent with stable inflation thus is an important goal of labor market policies.

Unfortunately, the NAIRU is not observable, and it is more difficult to estimate its level than its change. But a rough estimate of the current level can be inferred from recent trends in the unemployment rate and in wage inflation. Both wage inflation and unemployment have shown little movement over the past year. Moreover, the Michigan Surveys of Consumer Attitudes estimate that expectations of price inflation have stabilized at around 4.5 percent. These patterns are consistent with a pace of wage growth that roughly balances the demand for labor with the available supply, suggesting that the remaining unemployment is primarily frictional and structural in nature. *Thus, the average rate of unemployment in 1989—5.3 percent—may not be far above the nonaccelerating inflation rate of unemployment.*

In this setting, the most appropriate policy approach is to focus on reducing the NAIRU further in the years ahead. Maintaining steady economic growth and low unemployment is an important component of that policy, because additional job growth will create opportunities for many structurally unemployed and disadvantaged persons as employers lower expectations about qualifications and increase the intensity of training. Similarly, the decreasing number of new labor market entrants will give firms strong incentives to provide additional training for the existing work force and will reduce the number of labor market participants who experience frictional unemployment. Increasing workers' investments in edu-

cation and training and reducing the barriers to labor mobility will also reduce the NAIRU. The prospects are good for maintaining low unemployment rates, on average, in the future. But, macroeconomic policies must be designed so that reductions in unemployment do not reignite rising inflation, which would increase the risk of a subsequent economic downturn.

SUMMARY

The U.S. labor market is remarkably efficient in adapting to economic change. Adjustments are not instantaneous, however, and public and private initiatives can help to speed the natural workings of the market. As the United States enters the 1990s, attention focuses on increasing the skills and flexibility of the work force to meet changing economic demands. The Administration is committed to achieving excellence in education at all levels. It is particularly important to improve dramatically the achievement of elementary and secondary students, which means improving the quality of the Nation's schooling system. Increasing the numbers of students receiving education beyond high school may also be important in meeting the job demands of the 1990s.

Within the existing work force, employers and workers must adapt quickly to changes in the supply of and demand for labor. For the most part, these adjustments are likely to occur automatically without government action. In some cases, however, strengthening training programs can facilitate the reemployment of workers whose skills have been rendered obsolete by economic change. In other cases, barriers to mobility can be reduced through policies that increase the affordability of housing or encourage the startup of business in economically depressed areas.

With population growth projected to slow over the next decade, additional sources of labor will be needed. Tapping these sources can be facilitated by immigration reform and by encouraging businesses to hire and train currently underutilized segments of the population such as the elderly, disabled, and the unemployed or underemployed poor.

Indeed, for the Nation to realize its full potential for economic growth in the years ahead, society must bring the poor and disadvantaged more fully into the mainstream of the economy. Policies that assist the poor will certainly be needed, but these policies must be linked with the goal of eventual self-sufficiency by ensuring education, training, and job opportunities for low-income households.

The challenges for the 1990s are large, but the current economic environment is favorable for achieving further progress toward these important goals. Unemployment is low and inflation remains

in check. Economic opportunities are plentiful. If the Nation can more fully utilize its human resources in the decade ahead, the result will be rising productivity, stronger economic growth, increased opportunities, and rising living standards for Americans.

CHAPTER 6

The Economy and the Environment

ECONOMIC PROSPERITY and environmental quality are widely regarded as two of this Nation's most important goals. Some view these as competing goals and argue that economic growth begets environmental degradation. Increasingly, however, this conventional wisdom is being questioned, and a new consensus is emerging that economic growth and environmental quality need not be incompatible. Indeed, economic growth and environmental quality are in many respects complementary. For example, economic growth provides the opportunity for firms to invest in new facilities that are cleaner and more efficient. It is no coincidence that the wealthy societies are the ones that are both willing and able to devote substantial resources to environmental protection.

Compatibility between economic growth and environmental improvement is far from automatic, however; it depends on selection of appropriate goals and careful design of regulatory programs. Environmental goals must balance the associated benefits and costs. The public interest is best served when government provides a framework that creates incentives for the private sector to seek out the most cost-effective way to meet its regulatory goals. Government should *not* be in the business of picking environmental protection technologies and imposing them on firms, their workers, and their customers.

This chapter presents the Administration's principles for environmental regulation and illustrates how they can be put into action to address local, national, and global environmental concerns. The consistent application of these principles will ensure that this Nation's considerable investment in environmental protection—$81 billion in 1987, about the same as all American households' electricity and natural gas utility bills—will be made in ways that help to achieve *both* a strong economy *and* a healthy environment.

PRINCIPLES FOR ENVIRONMENTAL REGULATION

Market-based economies do not automatically provide the level of environmental quality that consumers desire. Understanding why environmental protection may require government action leads to

an understanding of policies that best serve both the economy and the environment.

MARKET FAILURE

Environmental problems arise in market economies when private individuals and businesses lack incentives to take full account of the environmental consequences of their actions. These market failures, which provide a rationale for government action, can be traced to three sources.

First, individual producers or consumers who pollute the environment generally do not pay for their pollution, even though it may harm others or cause others to incur additional costs. Excess pollution results, just as free electricity would lead firms and households to use electricity without regard to the resources used to produce it.

Second, no single individual can produce tangible evidence of an overall improvement in environmental quality by his or her own actions to reduce or control pollution. When there are some costs and no apparent payoff for individual cleanup effort, rational individuals may be unwilling to act, even in cases where a coordinated effort would yield environmental benefits that exceed the costs of collective action. This problem is analogous to that faced by a stadium full of standing football fans who would all be happier to see the game sitting down if only their actions could be coordinated.

Finally, the private market does not always produce the information needed to solve public problems. Private firms typically do not realize profits from research and development aimed at understanding environmental processes or the relationship between pollution and human health. Government action is often necessary to produce such information to further public policy objectives.

Regulations can also be motivated by factors other than the market failures outlined above. Paternalism, the belief of legislators and regulators that they can improve citizens' overall welfare by taking certain choices out of their hands, can play a significant role. Because the diversity of individual choice generally reflects differences in tastes, needs, and situations among individuals, paternalistic regulation is much more likely to reduce overall well-being than to increase it. Another motive for regulation is the pursuit of private advantage, which can be reflected in the specific design features of regulations that may be broadly grounded in public interest consideration. For example, firms routinely seek to keep their existing products and facilities under the current regulatory regime when more stringent regulations are implemented for new products and facilities.

ENVIRONMENTAL REGULATION

The Federal Government's involvement in environmental protection is relatively recent. The Congress first enacted major legislation between 1970 and 1980. Many environmental programs enacted in this era rely heavily on an approach referred to as command-and-control regulation. Alternative regulatory schemes that use market incentives to further environmental goals, such as emissions charges or tradable emissions allowances, can serve both the environment and the economy by reducing the costs of environmental protection (Box 6-1).

Box 6-1.—A Glossary of Environmental Regulation Terms

Command-and-Control Regulation—a system of administrative or statutory rules that requires the use of specific control devices on classes of selected pollution sources or applies emissions standards to narrowly defined pollution sources.

Emission Standard—a limit, usually expressed as a maximum allowable emission rate, applied to an individual pollution source.

Emission Charge—a fee levied by the government on each unit of pollutant emitted.

Tradable Emission Allowances System—a regulatory regime in which all sources of pollution are required to hold allowances for all emissions of covered pollutants. The government distributes a number of allowances equal to the target emissions level, which can then be freely bought and sold within the private sector.

In the final decade of this century, new environmental issues that include stratospheric ozone depletion and possible global climate change are receiving increased attention. Advances in science are also leading to deeper understanding of problems such as acid rain and pesticide contamination. As the list of environmental concerns grows, policymakers must carefully design programs to make progress on several fronts while minimizing adverse impacts on the economy.

Regulatory goals should be set so that the potential benefits to society from regulation outweigh the potential costs. Specific objectives should be chosen to maximize net benefits to the extent possible. It is impossible to remove all pollution or environmental risks, just as it is impossible to remove all risk of accident or illness. As any given pollutant or risk is reduced, the costs of further reductions rise and the incremental benefits fall. Because these additional benefits often become minuscule and the additional costs become astronomical as the limit of zero pollution or zero environmental

risk is approached, the pursuit of such extreme goals is likely to reduce the overall quality of life. Cost-benefit analysis can be useful both in setting appropriate goals within a particular area of concern and in setting priorities across areas.

Where regulation is necessary, it should wherever possible employ economic incentives to achieve its goals rather than attempt to legislate behavior without changing the underlying structure of private incentives. Where incentive-based approaches such as emissions fees or tradable allowances cannot be used, it is preferable to let each firm decide how best to meet flexible performance standards rather than to impose inflexible design standards that specify how pollution must be controlled. Regulation should also define pollution sources broadly rather than narrowly, to give plants that emit emissions at more than one point flexibility in meeting an overall emissions objective. Regulation of any type should pass a test for cost-effectiveness—reaching its goals at the lowest possible cost. To forsake cost-effectiveness simply wastes resources that could be used for many purposes, including further environmental improvement.

The command-and-control approach generally fails to create incentives consistent with regulatory goals. Indeed, the hallmark of the command-and-control approach is the uniform treatment of pollution sources without regard for the differences in damages they cause or the costs of control. Because command-and-control regulation relies on administrative or statutory rules, flexibility is limited and incentives to firms are distorted. The likelihood that innovation to reduce the costs of pollution control will be met by tighter regulatory requirements presents a particularly large disincentive to innovation (Box 6–2).

Finally, often an insufficient private incentive exists to undertake research that is necessary to understand and rationally address environmental issues. Government support may be required to spur inquiry into environmental problems, benefits and costs of action, and methods of pollution reduction.

In short, the following principles should guide environmental regulation:

- Goals for pollution abatement and risk reduction should be based on a comparison of the costs and benefits involved. Elimination of all risk is almost never a sensible goal.
- Where possible, market-based approaches that provide flexibility, encourage innovation, and support economic growth should be used to achieve environmental goals in a cost-effective manner.
- Government policy should encourage the development and sharing of scientific and technical information relevant to environmental quality issues.

Box 6–2.—Problems with Command-and-Control Regulation

Regulators generally lack the detailed knowledge of individual production facilities and processes and of alternative production and abatement methods that would be necessary to implement an efficient regulatory program by command-and-control.

Firms sensibly expect that any demonstration of potential for environmental improvement or the exploration of new approaches to emission control will increase their risk of being targeted for tougher emission standards. Therefore, there is a disincentive to innovate that magnifies the inefficiency of command-and-control regulation over time. Regulators may try to overcome the incentive problem by incorporating their own forecast of future technology into regulatory requirements. This inflexible approach is a poor substitute for a decentralized innovation process in which many possibilities are pursued at the same time, with winners emerging naturally only as additional information is developed.

Command-and-control regulation also fails to account for private responses that tend to neutralize its impact. For example, a common regulatory practice is to impose new product standards that are tougher than those for existing products and facilities. This practice locks in the continued use of old products or facilities that may actually be more environmentally damaging. Aside from being costly, such standards can actually increase pollution from levels that might have been obtained without a bias against new investment.

Finally, command-and-control regulation sometimes involves issuing threats that are not credible. In 1976, when it became clear that car manufacturers could not meet the automobile emissions standards for the 1977 model year, the Congress quickly revised the standards. The implicit threat to shut down the U.S. auto industry was simply too draconian to be believed.

The rest of this chapter considers the application of these principles in the Administration's proposals to update the Clean Air Act and food safety legislation, in Federal soil conservation programs, and in the Administration's approach to global environmental issues.

THE CLEAN AIR ACT

Prior to 1970, State and local governments held the primary responsibility for determining air quality targets and emission con-

trol strategies. Some States and cities, such as California and Pittsburgh, did address pollution problems. Others, however, were reluctant to impose and enforce strict pollution controls that might drive industry elsewhere.

The Clean Air Act amendments enacted in 1970 expanded the Federal role in clean air issues beyond its previous focus on support for scientific research on air pollution problems. Under its provisions, the Environmental Protection Agency (EPA), which was also established in 1970, sets national air quality standards for major pollutants. These standards, defined as permissible concentration levels of pollutants in the air over a specific time period, are designed to protect the health of the most sensitive members of the population with an adequate margin of safety and without regard to cost. National emission standards for new industrial, utility, and commercial facilities that are significant sources of pollution and new car emission standards are also set and administered at the Federal level. State and local governments retain responsibility, however, for developing plans to reduce emissions from existing utility and industrial pollution sources so that air quality standards are met or exceeded at all locations.

EXPERIENCE UNDER THE CURRENT LAW

Meeting the objectives of the Clean Air Act has been complicated by several factors. One is the sheer number of pollution sources. There are an estimated 27,000 major industrial and utility sources of air pollution in the Nation. Mobile sources of pollution (automobiles, trucks, aircraft, and locomotives) number well over 150 million, and vehicle miles traveled have been steadily increasing. Moreover, because pollutants are transformed and transported in the atmosphere, the selection of control strategies is complicated.

Despite rising levels of economic activity and automobile use, emissions of the most common air pollutants have declined substantially since 1970. For example, emissions of carbon monoxide, particulate matter, and lead fell by 39, 62, and 96 percent, respectively, between 1970 and 1987. Yet, in 1987, 12 years past the original target date for meeting air quality standards, more than 100 million people lived in areas where air quality standards had not all been achieved. Failures to meet the ground-level ozone standard accounted for 90 percent of these exposures. Some have argued, however, that this official measure of air quality status gives little indication of normal air quality in affected areas. For example, air quality monitoring data show that the air quality standards are met more than 99 percent of the time in all areas other than Los Angeles, and 97 percent of the time there, even though it is the city with the most polluted air in the United States.

A major feature in the regulatory approach of the Clean Air Act is the requirement that new facilities meet EPA emission rate standards. This approach can effectively offer grandfather protection to old facilities and slow the rate at which firms replace older, inefficient plant and equipment with newer plant and equipment that meet EPA standards.

This peculiar consequence of regulation is apparent in the utility sector. Concern over the impact of emission standards on mining employment in high-sulfur coal regions led the Congress in 1977 to mandate a design standard for new coal-fired power plants. Sulfur dioxide removal from exhaust gases (via scrubbing technology) was required even when the same emission rate could be reached at lower cost by burning low-sulfur coal. Because such scrubbing may add 20 percent to the capital cost of a new plant, and old generating units can be kept running for 65 years or more, replacement of old generating capacity inevitably slowed. Moreover, because new generating units with scrubbers often have higher operating costs than old unscrubbed units, utilities naturally chose to run the old units as much as possible. Having new, clean plants sit idle while old, dirty ones operated at full capacity was an unintended consequence that vividly illustrates the perverse effects that command-and-control regulation can have.

THE CLEAN AIR INITIATIVE

The Administration has proposed a comprehensive plan for revising and strengthening the Clean Air Act. The Administration's proposal includes initiatives to achieve complete attainment of air quality standards, control toxic air pollutants, address the problem of acid rain, and reduce automobile emissions. The acid rain and automobile emissions programs provide particularly clear applications of the Administration's regulatory principles. The former proposes the use of tradable emissions allowances to reduce sulfur dioxide emissions from utility plants that are a primary cause of acid rain (Box 6–3). The latter uses flexibly applied and carefully targeted standards to limit automobile emissions that are the major source of ground-level ozone pollution.

TRADABLE ALLOWANCES FOR SULFUR DIOXIDE EMISSIONS

The Administration proposes to achieve a permanent 10-million-ton reduction in annual sulfur dioxide emissions in a cost-effective manner, using a system of tradable emissions allowances. The use of tradable emissions allowances is an approach that has been repeatedly advocated in this *Report* for more than a decade. Emission allowances reflecting the required reduction in current emissions

Box 6–3.—Acid Rain and Sulfur Dioxide

Acid rain results from the formation of sulfuric and nitric acids in atmospheric reactions involving sulfur dioxide and nitrogen dioxide. These acids fall to the Earth's surface as dry particles or mixed with rainfall over an area that may extend for hundreds of miles from the location where emissions occur. Thus, emissions from the Midwest can cause acid rain in the Northeast. Rainfall in the most heavily affected areas is eight to nine times more acidic than it would be under pristine conditions.

Sulfur dioxide is regulated as a pollutant under the Clean Air Act. Federal air quality standards for sulfur dioxide are currently met at virtually all locations throughout the country. In some areas, compliance was attained by switching to fuels with lower sulfur content. In others, scrubbing technology was applied to remove sulfur from smokestack gases. Another approach was to build taller smokestacks that spread emissions over a much wider area and allowed standards to be met at all measuring sites near the emission point. Building taller smokestacks was very cost-effective within a local area. But over a larger region, it exacerbated the contribution of sulfur dioxide emissions to the formation of acid rain. The 1977 Clean Air Act amendments limited allowable stack height.

While measured urban sulfur dioxide air quality has improved steadily, aggregate sulfur dioxide emissions, which heavily influence acid rain levels, have declined by only 28 percent since 1970. Almost two-thirds of sulfur dioxide emissions come from electric utility plants, with industrial sources accounting for the bulk of the remaining emissions. Most utility emissions occur at coal-burning power plants—particularly from older plants burning high-sulfur coal without emission controls.

are allocated to existing utility plants. Plant owners, who are required to hold allowances equal to their actual emissions, are then free to trade these allowances among themselves. Thus, the emission rates of individual plants can vary considerably, while overall emissions are automatically held at the target level. An additional requirement that operators of new utility plants hold allowances equal to their emissions after the system is fully in place guarantees against any rise in utility emissions over time.

The allowances trading system has several major advantages over the command-and-control approach. The tradable-allowances approach is estimated to result in cost savings of at least 20 per-

cent annually—totaling billions of dollars over the next two decades—compared with command-and-control regulations. These savings arise from the ability to trade allowances in order to take account of differences in plant access to low- and high-sulfur coal supplies, in expected plant life, and in site constraints that may rule out the installation of scrubbers at some plants. With tradable permits, a plant with low control costs has an incentive to control more and sell its excess allowances to a plant that could only reduce emissions to its original allocation at very high cost. The scope for trading is widened by allowing industrial sources with low control costs to participate in the system and by a provision for the conversion of nitrogen dioxide emissions reductions in excess of required levels into allowances.

Incentives for Conservation and Innovation

Because reductions in electricity generation levels translate directly into a reduced need to hold allowances, the allowances system puts utility energy conservation programs on an equal footing with other emissions reduction strategies. Firms can also economize on allowances by using cleaner plants more intensively. By requiring utilities to buy or hold a costly allowance for each ton of pollution they emit, the allowances system uses the private objectives of cost minimization and profit maximization to promote environmentally sound practices. By ensuring that each pound of actual emissions carries a cost, which will be reflected in the price of electricity, additional conservation is promoted as demand falls in response to higher prices. In sum, a market-based approach sends the proper signals to both consumers and producers, resulting in cost-effective reductions in pollution.

Immediate cost savings are only part of the benefits of the trading program. The possibility of future trading creates strong incentives for further cost reduction and innovation by both utilities and nonutility firms, which could save additional billions of dollars. Utilities can take advantage of the opportunity to carry forward unused allowances for future sale or use. Such banking of allowances would shift emissions reductions from the future toward the present, allowing for more rapid environmental improvement while lowering compliance costs. Firms always stand to gain if they can achieve additional emissions reductions at a cost below the market value of the allowances that would be freed up for external sale. Thus, these firms have a continuing incentive to explore new abatement and combustion technologies, nonconventional energy sources, conservation programs, and other options that emerging technologies and local circumstances may suggest. Because allowances are transferable and continue in force after the retirement of the plant to which they were initially allocated, the investment disincentive implicit in standard regulatory schemes is avoided.

The inherent flexibility of the allowances system, which lets the market choose among competing approaches, is particularly valuable given the impossibility of knowing which technology will prove to be best over the long haul. Several different technologies for burning high-sulfur coal cleanly without scrubbing, as well as improved scrubbers, are currently under development. New concepts will undoubtedly arise over the next decade. The government is no more capable of picking winners in emissions-control technology than in other industrial arenas. By encouraging decentralized innovation and avoiding the pitfalls of centralized technological planning, the allowances system maximizes the potential for the invention and application of new ways to achieve environmental protection.

The Workability of the System

There are several precedents for successful emissions trading and marketable allowances systems. Nationally marketable allowances were used during the phasedown of the lead content of gasoline, with substantial savings. EPA's longstanding bubble policy allows owners of an industrial facility with multiple pollution sources to balance more control at some sources for less control at others to meet emissions targets on a cost-effective facility-wide basis. Since their inception in the 1970s, bubbles have saved billions of dollars compared with a policy of requiring each source to meet its own emissions standard. Trading is also used in EPA's offset policy, which allows construction of new facilities in areas that do not meet air quality standards to be offset by reductions in emissions from existing facilities. Trading in these programs has occurred despite the high air quality modeling costs incurred to verify that proposed trades will not worsen the air quality at any location. Transaction costs for sulfur dioxide emissions trading will be much lower, because local air quality modeling will not be required and continuous emissions monitoring data will be available to verify compliance.

The incentive-based approach to environmental protection offers clear advantages over command-and-control regulation, yet it generates several philosophical and practical criticisms. A common objection is that a marketable allowances system gives industry a right to pollute that it would not otherwise have. This view fails to recognize that command-and-control regulation confers exactly the same sort of pollution right, only in a nontransferable form.

Some observers have raised the concern that trade in allowances will be inhibited by State regulatory actions or manipulated to prevent the entry of new producers into the electric power market. However, facts about market structure and behavioral incentives suggest that the market for allowances will work. The initial distribution of allowances among a large number of utilities means no

one firm or State could exercise market control. Antitrust laws provide an additional safeguard against the possibility of anticompetitive behavior. Existing incentives for cost and rate minimization should lead regulators and utilities with low-cost emissions reduction opportunities to sell sufficient allowances to meet the demand from new plants and new entrants. Of course, there is no guarantee that *every* utility or regulator will seek to minimize costs and electric rates and maximize shareholder returns. But in a competitive situation, cost-minimizing behavior by every participant is not required for the market to work effectively.

AUTOMOBILE EMISSIONS CONTROL

The goals selected in the President's clean air package reflect the careful comparison of benefits and costs that is a fundamental consideration in the Administration's approach to regulatory policymaking. For example, the President's package includes tighter tailpipe emissions standards for new cars and light trucks and other measures to reduce automobile emissions significantly. However, it explicitly rejects a proposal for unreasonably stringent tailpipe standards that has been advocated in some quarters.

EPA estimates that the exotic technologies required to attain such an unreasonably stringent standard would add about $500 to the cost of each new vehicle. At a projected sales rate of approximately 14 million covered vehicles per year, the additional costs would be more than $7 billion annually, almost doubling the projected costs of all actions proposed by the Administration to reduce urban ozone pollution. This standard would result in slightly lower emissions from each new car. However, because consumers would undoubtedly respond to higher new car prices by buying fewer new cars, emissions of pollutants that contribute to ozone formation could actually *increase* in the period immediately following adoption of these extreme standards, as consumers would be led to make greater use of old vehicles with significantly higher per mile emission rates. Even after a complete phase-in of vehicles meeting the extreme standard, total reductions in emissions of pollutants that contribute to ozone formation would be only slightly larger than emissions reductions under the President's proposal. Spending $7 billion or more per year to achieve, at most, very small environmental improvements is simply not sensible.

Flexibility and Targeting

The President's clean air initiative also incorporates flexibility in its provisions for automobile emission standards. Automakers can average across their product line to reach applicable standards, opening the possibility of substantial cost savings while achieving exactly the same environmental benefits as a standard applied on a car-by-car basis. Because an automaker who elects to use averaging

must necessarily produce some vehicles that are cleaner than the standard, averaging implicitly encourages advances in emission-control technology.

Cost-effectiveness is also enhanced by tailoring program requirements to local needs rather than using a one-size-fits-all approach. Some areas currently meet air quality standards for ground-level ozone, while others do not. Because air quality standards are set at levels that protect the public health with an adequate margin of safety, areas that already meet standards have little to gain from further reductions in emissions. Cost-effectiveness requires focusing reductions where they are needed. For this reason, the Administration's plan for extra-clean, alternative-fueled vehicles is carefully targeted on the areas with the most severe nonattainment problems. Even within these areas, local authorities are free to opt out of the program if they can achieve equivalent air quality benefits in other ways.

The targeted approach is also evident in the President's proposal for recovery of refueling emissions. Refueling vapors can be recovered using either on-board canisters or gasoline pump recovery systems. The latter approach is preferable because it can be applied selectively in areas with ozone problems without imposing unnecessary costs on new car buyers in clean areas. It also provides more immediate environmental benefits in problem areas, because all pumps can be modified long before all cars on the road are replaced. In this matter, as in many others, environmental and economic interests are convergent.

RISK AND THE REGULATION OF AGRICULTURE

Today the regulation of agriculture involves a complex array of Federal programs—from traditional price support and acreage reduction programs to conservation, environmental, and food safety regulations—administered by the Department of Agriculture, the Environmental Protection Agency, and the Food and Drug Administration. Some programs, such as the acreage reduction programs, affect a farmer's land-use and crop-choice decisions. Others, such as pesticide regulations, affect choice of production methods. Still others, such as conservation regulations, may affect both land-use and management decisions. The combination of farm production decisions and the physical characteristics of farmers' fields—such as soil type, depth of groundwater, and proximity to surface water—are key factors that determine the impacts agriculture has on the environment.

Two questions arise regarding environmental issues that relate to agriculture. What are the circumstances in agriculture that may justify government intervention? When government action is justi-

fied, how can policies be designed to reduce environmental risks to appropriate levels at least cost?

SOIL CONSERVATION RECONSIDERED

The dust bowl of the 1930s, dramatized by John Steinbeck's *The Grapes of Wrath*, left a public perception that the effects of soil erosion can have dire economic consequences. Because of the dust bowl experience, a principal objective of soil conservation programs since the 1930s has been to prevent the loss of agricultural productivity. Yet, analyses of data on soil erosion indicate that the principal benefits from soil conservation are the prevention of offsite damages such as water pollution, not the prevention of agricultural productivity effects. There is accordingly a need to reconsider the design of soil conservation programs.

Soil Erosion and Productivity

Alarming stories in the press periodically warn that erosive practices are again ruining American farmland and will lead to a food crisis. Such alarmist claims are not supported by the facts. The Department of Agriculture estimates that some 2 billion to 3 billion tons of soil are lost from farmers' fields to erosion each year in the United States. Topsoil is a renewable resource, however, and is replaced as organic matter from crop residues is incorporated into the soil. Because of this replenishment, the rate of net loss of topsoil in the United States as a whole is low.

The gains and losses of soil are not distributed evenly, however. Some areas are net losers and may experience lower productivity as topsoil becomes shallow. These productivity losses are largely offset by gains elsewhere. The Department of Agriculture recently estimated that continuing current rates of soil erosion for 100 years would reduce productivity only about 2 percent (Table 6–1). Because *annual* productivity gains in U.S. agriculture have averaged more than 2 percent for the past 20 years, one year's normal productivity growth will offset the likely effects of erosion on productivity over the next century.

TABLE 6–1.— *Estimated Percent Loss of Productivity From 100 Years of Erosion*

Farming region	Water erosion	Wind erosion
Northeast	7.1	(1)
Lake States	.9	.7
Corn Belt	3.5	(1)
Appalachia	4.7	(1)
Southeast	1.3	(1)
Delta States	1.6	(1)
Northern Plains	.6	.3
Southern Plains	.2	2.1
Mountain States	.4	1.4
Pacific States	2.3	.2
United States	1.8	.5

[1] Less than 0.01 percent.

Source: Department of Agriculture, *The Second RCA Appraisal*, June 1989.

Alarmist claims about soil erosion's effects on agriculture also appear to run counter to basic economics. The farmer who uses erosive practices that cause a decline in current or future expected productivity of the land reduces the value of that land. This loss takes the form of lower farm output and a lower value of the land as an asset. Landowners thus have an economic incentive to limit erosion to the degree that it is profitable to do so. Department of Agriculture research shows that erodibility and topsoil depth do help explain differences in land values. These findings mean that buyers and sellers of farmland are in fact aware of these factors and generally take them into consideration in their decisionmaking. Even if some buyers and sellers of farmland are unable to know the impacts of erosion on productivity precisely, there is no reason to believe the government would be able to do so significantly better.

In short, private gains from soil conservation provide farmers and landowners with adequate incentives to protect soil productivity without government intervention. It is in environmental and other offsite effects of soil erosion that the market fails to account adequately for the effects of erosion, and it is there that government conservation programs are needed.

Pollution Effects of Soil Erosion

There are a host of offsite effects of wind and water erosion. Wind erosion contributes to particulate air pollution in the Western United States that is estimated to cause $4 billion or more in annual damages in the form of increased cleaning costs, reduced recreational opportunities, and impaired health. Erosion caused by water runoff is a major cause of water pollution that damages reservoirs and navigational channels, harms aquatic and plant life and wildlife, has adverse effects on human health, and reduces the recreational value of lakes and rivers. These damages are estimated to range from $5 billion to $18 billion annually.

These damages reflect a classic market failure: farmers typically bear little if any of the cost of the offsite effects of erosion from their fields. Agricultural pollution usually originates on many farms and it is difficult to attribute any specific amount of damage to any one source. Consequently, policies to control agricultural pollution usually must be designed to change farmers' production decisions—such as tillage practices or chemical use—that are related to pollution. The design of efficient environmental policies is complicated by the effects that Federal agricultural subsidies have on farmers' management decisions.

The Conservation Reserve Program

This program was introduced in the 1985 farm bill to accomplish environmental objectives, such as improved water quality, by re-

moving highly erodible land from production. This program was also intended to help curb the production of subsidized commodities and to provide income support to farmers. About 34 million acres are now enrolled, roughly 8 percent of U.S. cropland. In exchange for government payments, farmers must plant grass or trees on the enrolled acres. All farmers can participate in the program, provided their land meets technical criteria for erodibility.

The Conservation Reserve Program illustrates the potential benefits of conservation programs and the problems in designing programs to meet environmental, income-support, and broader policy objectives. In order to attract widespread participation, the program originally allowed farmers to enroll any land in the program that met erodibility criteria, whether or not erosion was likely to cause damages such as water pollution. The program thus provided an incentive for farmers to place low-valued land into the program. Consequently, a disproportionately large share of the acres enrolled—more than 40 percent—is nonirrigated land in the Plains and Mountain States, where most wind erosion occurs but damages are relatively small. Relatively few acres in the program are higher valued land in the Midwest and South, where most water erosion occurs and a large part of the nationwide damages also occur. Because it is estimated that only 30 percent of the most highly erodible land is now enrolled in the program, it can be concluded that an even smaller share of the damage caused by erosion is being prevented.

Federal agricultural policy also strives to maintain and enhance the U.S. position as the major agricultural exporter in the world. Conservation programs that attempt to achieve environmental goals by removing millions of acres of cropland from production are not consistent with this broader policy objective. The inconsistency in U.S. policy is highlighted by the 1985 Food Security Act. The act established the Conservation Reserve Program to remove 40 million to 45 million acres of U.S. cropland from production and simultaneously instituted an export subsidy program—the Export Enhancement Program—to increase U.S. agricultural exports. These conflicts between environmental and trade objectives may increase if current international negotiations, discussed in Chapter 7 of this *Report,* lead to agricultural policy liberalization.

IMPROVING CONSERVATION PROGRAM DESIGN

The targeting problems encountered with the Conservation Reserve Program and its inconsistency with broader U.S. policy objectives both suggest that the Federal Government should reconsider its approach to conservation programs. How can conservation programs be made more effective at meeting conservation objectives and also be consistent with broader policy and trade objectives?

The answer is to target environmental impacts while keeping as much viable land in production as possible. Land retirement could still be used in those special circumstances, such as protection of wetlands, in which there are no viable alternative methods to meet environmental objectives.

Conservation programs are not an efficient means of transferring income to farmers because they do not target those farmers who might be thought to be deserving of income subsidies. Hence, they should not be used as a means to support farm income. Instead, conservation programs should be designed to achieve environmental objectives by targeting land that causes offsite damages and land that needs to be protected for other environmental reasons such as protection of wildlife. The recent changes in the Conservation Reserve Program's eligibility criteria, to include environmentally sensitive lands such as wetlands and areas bordering rivers and lakes, represent a move toward better targeting of environmentally sensitive land. These criteria could be further improved by explicitly linking them to potential damages. If the program enrollment is increased from the current 34 million acres to 40 million as proposed by the Administration, participation should be extended to land meeting criteria that target environmental damages.

Conservation programs could also be made compatible with both environmental and trade objectives by using economic incentives to encourage farmers to invest in conservation improvements that reduce wind and water erosion damages while keeping land in production. Investments such as terracing and windbreaks can be used to reduce wind erosion, and filter strips and grassed waterways can reduce water pollution. Federal conservation programs have long shared the costs of these investments, but not in a way that targets the investments to mitigate offsite damages. Such targeting could be accomplished by linking these investment incentives to the potential for erosion to cause environmental damage.

PESTICIDES: BENEFITS, RISKS, AND REGULATION

Pesticides are believed to have been a major contributor to the growth in the productivity of U.S. agriculture since the 1950s. This growth in productivity—almost 220 percent since the early 1950s—has benefited consumers by making more food available at lower prices. Pesticides are poisons, however, and their widespread use in agriculture has led to growing public concern about detrimental effects on human health and the environment.

Many pesticides have immediate health effects that pose a risk to pesticide users and others from accidental poisonings. Some scientists also believe that low-level exposure to many pesticides may cause delayed health effects. These delayed effects—cancers, birth

defects, and neurological disorders—are much more difficult to demonstrate than immediate effects. Because experimentation on humans is not possible, researchers must infer delayed effects from animal studies or from statistical data on human exposure. Because neither method provides definitive data, regulatory decisions regarding delayed effects are inevitably based on imperfect scientific evidence.

The effects of pesticides on nature may be even more difficult to measure and evaluate than the effects on human health. Countless plant and animal species inhabit the natural world. Plants themselves contain many natural pesticides necessary for survival. The scientific challenge to understand the effects of pesticides is great, even if attention is focused only on those organisms that have immediate economic value. Researchers have only recently begun to construct a framework for systematic quantitative assessment of pesticide impacts.

The Regulatory Process

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) directs EPA to evaluate the effects of pesticides on human health and the environment and to regulate pesticide use as necessary to balance benefits and risks. Pesticides that pass the benefit-risk analysis under FIFRA must also meet a health-risk tolerance for residues in processed foods established by the Federal Food, Drug, and Cosmetic Act (FFDCA). The risk tolerance is to be set in light of the need for "an adequate, wholesome, and economical food supply." EPA uses available data—including laboratory studies of effects on animals, pesticide use data, and food consumption data—to estimate the risk of an adverse health effect (e.g., the probability of a person developing a cancerous tumor during a lifetime). This risk estimate is then used with other relevant information to make regulatory decisions.

This regulatory scheme is straightforward in principle, but its information requirements are burdensome in practice. Within the next decade, EPA must evaluate hundreds of active ingredients contained in thousands of pesticides. Because many studies and analyses are required on each active ingredient, EPA faces a formidable regulatory task. The current regulatory process takes years to complete. In deciding whether to remove a dangerous pesticide from use, current procedures can take 4 to 8 years. Some of the delays in the regulatory process can be attributed to the way it is organized, and the Administration has proposed reforms to expedite the process. But a major constraint is still the time and cost involved in producing reliable scientific information needed to make responsible decisions.

Negligible Risk and the Delaney Clause

Both risks and benefits of a pesticide are considered in setting most tolerances under FFDCA and in all regulatory decisions under FIFRA. For most decisions, EPA uses the concept of negligible risk. A negligible risk is one below which it is deemed that the public health is not threatened, and is often interpreted to be a lifetime cancer risk in the range of 1 in 1,000,000. When a chemical's risk is estimated to be less than 1 in 1,000,000, its use is not regulated. When a chemical's risk exceeds 1 in 1,000,000, benefits from use are weighed against risks in making a regulatory decision.

A different risk standard is applied in the case of pesticide residues in processed foods, however, because of the Delaney Clause in Section 409 of FFDCA. The Delaney Clause states that a pesticide that has been found to cause cancer cannot be registered for use if *any* residues are found in processed foods. This zero-residue standard implies a zero-risk tolerance for carcinogenic pesticides in processed foods, no matter how small the risk or how large the economic benefit from their use. Thus, benefits are balanced against risks if a carcinogenic pesticide residue is present on fresh produce, but not if it is found in processed food.

The Congress adopted the Delaney Clause's zero-risk standard in the 1950s when laboratory techniques were able to detect residues only in parts per million. With modern techniques, such as gas chromatography, it is possible to detect residues in parts per billion, effectively increasing the stringency of the Delaney Clause's risk standard by a factor of one thousand.

The current negligible-risk standard for pesticides is very stringent—some would say excessively so—and represents a high degree of safety. More stringent pesticide regulations could have little effect on the total number of cancers. To put pesticide health risks into perspective, consider that the risk of cancer in the U.S. population is 300,000 in 1,000,000. Pesticides account for only a small fraction of the 2 percent of cancers attributed to all sources of pollution, whereas tobacco use and diet are believed to contribute to about 65 percent of all cancers. The National Cancer Institute has announced its goal to reduce cancer mortality in the year 2000 by 50 percent through changes in tobacco use, diet, and health care. The Institute's focus on reductions of large risks, rather than ones that are already negligible, is clearly sensible.

THE ADMINISTRATION'S PROPOSALS FOR PESTICIDE POLICY REFORM

The National Academy of Sciences recently studied pesticide regulation extensively and recommended that the inconsistencies between FIFRA and FFDCA be eliminated by abandoning the distinc-

tions now made between residues in processed and nonprocessed foods and by replacing the Delaney Clause with a negligible-risk standard for all pesticides. The National Academy concluded that the consistent application of a negligible-risk standard for carcinogens in food would allow regulatory efforts to be focused on the most dangerous substances and would thereby dramatically *reduce* total dietary exposure to cancer-causing pesticides with modest reduction of pesticide benefits.

The Administration proposes to adopt the National Academy's recommendation that a negligible-risk standard replace the Delaney Clause in FFDCA. Where risk is greater than negligible, the Administration proposes to extend to processed foods the existing regulatory procedures for nonprocessed foods. These procedures allow economic and health benefits of a pesticide to be balanced against risks in all cases. By allowing better targeting of regulatory efforts, this change should *reduce* cancer risks.

The Administration's food safety proposal also would amend FIFRA to strengthen and simplify the pesticide regulation process. The President's plan would establish a periodic review of all pesticides, simplify and make more effective the process of canceling the use of a pesticide found to be harmful to public health, and improve enforcement of pesticide regulations.

Other Regulatory Reforms

Pesticide regulation, like air pollution regulation, is based largely on command-and-control techniques (Box 6–2). Uniform regulatory standards are notoriously inefficient because they fail to take into account the diversity of local conditions. Because pest problems are often location-specific, large production inefficiencies can be caused by uniform pesticide regulations. There is a need for alternative, cost-effective methods of pesticide regulation that allow farmers to adapt production methods to the particular pest problems they face. For example, it may be possible to employ a system of marketable pesticide-use allowances to reduce pesticide contamination of surface and groundwater efficiently. A marketable allowances system (Box 6–1—tradable allowances) would restrict the total use of pesticides in environmentally sensitive areas and would allow those farmers who benefit most from pesticides to use them.

Both Federal and State governments have already financed research into production practices that impose fewer health and environmental risks. For example, many States have developed research programs under the rubric of integrated pest management. Also on the horizon are promising developments in biogenetic research that could enhance pest resistance and reduce the need for chemical pest control. In 1990, the Administration will begin a 5-year interagency research initiative to improve understanding of the process of groundwater contamination, develop safer produc-

tion practices, and disseminate the new practices through the Extension and Soil Conservation Services.

Better data on actual pesticide use, occupational exposure, and environmental contamination are needed to enable regulators to make informed decisions. The Department of Agriculture is currently improving data on pesticide use. The EPA is now conducting the first national assessment of pesticide contamination of well water. Further funding of pesticide data collection and analysis is under consideration.

ENVIRONMENTAL EFFECTS OF FEDERAL FARM PROGRAMS

Federal farm programs may encourage farming practices that increase health and environmental problems. Farm programs may have adverse environmental impacts through several channels. Crop-specific subsidies can encourage farmers to use more fertilizers and pesticides. To limit the costs of programs, farmers can receive subsidies only on those acres that are part of the farmer's program crop base. This criterion for program participation creates a disincentive to rotate crops, even though crop rotation is an important nonchemical technique for pest control. Thus, the programs may further aggravate pesticide pollution by encouraging farmers to substitute chemical pest control for nonchemical control.

When farm subsidies are based on how much land a farmer devotes to particular crops such as wheat and corn, land suitable for those crops becomes more valuable. Higher agricultural land values in turn encourage farmers to bring more land into production. Land that is not already being farmed is generally less productive or more costly to convert to agricultural uses. Such land may be steeply sloped and thus erodible, or it may be wetlands that provide important wildlife habitat. Agricultural subsidies based on land use thus create incentives for farmers to use land in ways that may increase adverse environmental impacts.

Unfortunately, only limited research has addressed the linkages between agricultural policy and environmental quality. Some evidence supporting these linkages is contained in case studies conducted by the National Academy of Sciences in its report, *Alternative Agriculture*. Other research casts doubt on the generality of that evidence, however. Research shows that pollution caused by agricultural chemical use, for example, depends on the physical characteristics of the farmer's field and its proximity to groundwater and surface water. The diversity of conditions under which agricultural production takes place makes it very difficult to draw broad generalizations from limited data.

The potential adverse environmental impacts of Federal agricultural programs could be reduced by breaking the links between agricultural subsidies and farmers' production and land-use decisions. These links could be broken, for instance, by making three changes: continuing the reductions of price-support levels that were begun by the 1985 farm bill; relaxing restrictions on the use of land enrolled in subsidy programs; and changing the criterion for receipt of subsidies from one that is based on crop acreage to one that is not related to production of a specific crop. For example, an income-based safety net could replace the current system of crop-related deficiency payments. These same policy changes would also bring U.S. agricultural policy in line with the broader trade policy goals of this Administration that are discussed in the next chapter of this *Report*.

GLOBAL ENVIRONMENTAL ISSUES

Like environmental problems at the local or national level, global environmental problems arise because actions taken by one individual have unintended adverse effects on another. Global environmental problems are complicated by the fact that the individuals involved live in many nations. Because one nation cannot impose its wishes on another, international cooperation is required to solve such problems. Differences across countries—in income, natural resource endowments, population, sensitivity to particular environmental changes, and the political strength of environmental movements—mean that countries inevitably have different views on these issues. At the Paris Summit in July 1989, the President joined other heads of state in recognizing the need for cooperation in addressing global environmental concerns. The President has also encouraged international organizations to facilitate international cooperation to solve global environmental problems.

Stratospheric ozone depletion and possible climate change are two global issues that may affect the economy and the environment far into the next century. To evaluate the impact of a policy course chosen today, the impact it will have on the economic well-being of *both* current and future generations and its environmental impact must be assessed.

Scientific evidence of possible stratospheric ozone depletion is stronger than scientific evidence of possible global warming, although significant uncertainties surround both. These uncertainties extend to environmental and economic as well as scientific aspects of these two issues. Because policymakers must understandably make decisions before information on such issues is complete, the government has an important role to play in supporting basic

scientific and economic research that can reduce critical uncertainties in the meantime.

Even when uncertainty cannot be eliminated, identifying a probable range of effects can inform policy choice. For example, a consensus that changes in global climate will lead to at most a small rise in sea level over the next 60 years would make a policy response to protect high-value coastal areas more feasible than if a large rise were expected. Finally, because the regulatory agenda is often influenced by public perceptions that may not accurately reflect available knowledge, the government also has a responsibility to educate the public.

STRATOSPHERIC OZONE DEPLETION

Ozone in the upper layer of the Earth's atmosphere (the stratosphere) provides an essential screen from the Sun's ultraviolet rays. In recent years, evidence has mounted that the stratospheric ozone layer is being depleted. Several chemical compounds, most notably chlorofluorocarbons (CFCs) and bromofluorocarbons (halons) have been identified as sources of the increased atmospheric concentrations of chlorine and bromine that cause ozone depletion. These chemical compounds have long atmospheric lifetimes, so that even if their production were halted immediately, elevated concentrations of chlorine and bromine would persist for decades before subsiding. If production is phased out by 2000, current chlorine concentrations would be likely to increase by 50 percent and then decline slowly to one-half of current levels by 2080. Without any production curtailment, these concentrations would rise indefinitely.

The appearance of a major hole in the stratospheric ozone layer over Antarctica, where no emissions originate, illustrates the global scope of the ozone-depletion problem. Long before the hole was observed, the United States acted in 1978 to ban the use of CFCs as aerosol propellants, a use in which substitutes were readily available. Canada and Sweden followed suit. CFCs and halons are also used in applications such as automotive and residential air-conditioning systems, refrigerators, and fire extinguishers; as blowing agents in the production of insulating board and other foam products; and as industrial solvents. These uses of CFCs and halons have continued to grow.

Protecting the Ozone Layer: Benefits and Strategies

The potential benefits from protecting the ozone layer—improvements in human health and favorable impacts on crops, fish, and materials—arise from lower exposure to solar ultraviolet radiation. Both skin cancer and cataracts are related to cumulative exposure to ultraviolet radiation. A phaseout of CFCs and halons is estimated to reduce the incidence of these health problems in the current

population by 50 to 75 percent from levels that would prevail if there were no curtailment of production. (This estimate is likely to be high, because it assumes that individuals take no offsetting actions to reduce their exposure to increased ultraviolet radiation.) For future generations, which would suffer a greater cumulative exposure to ultraviolet radiation if ozone depletion continued, the health benefits would be even larger.

The geographic distribution of ozone-depleting emissions and their expected growth unless action is taken is such that no single country can act alone and have a significant impact on stratospheric ozone depletion. Individual countries have little reason to act alone. The benefits of national policies to reduce ozone-depleting emissions spill over national boundaries, but costs are concentrated where reductions occur. Thus, the application of cost-benefit criteria on a national level would cause any one country, working in isolation, to reject control measures that may be desirable from a global perspective.

Two international agreements regarding ozone depletion are currently in effect. The 1985 Vienna Convention established a framework for international scientific and technical cooperation. The 1987 Montreal Protocol commits signatories who are major CFC users to freeze production levels by 1989, and then to cut their production in half by 1998. In addition, beginning in 1992 the production of several halons is frozen at 1986 levels. The United States and other major industrialized countries have announced further intentions to phase out production of CFCs and halons completely by the turn of the century if safe substitutes are available. Amendments and revisions to the Montreal Protocol, including extending coverage to other compounds with ozone-depleting potential, are currently under consideration.

Hydrochlorofluorocarbons (HCFCs), the most promising substitutes for CFCs in a wide range of applications, themselves have one-fiftieth to one-tenth the ozone-depleting potential of CFCs. By allowing HCFCs to substitute for CFCs in the near term, the Montreal Protocol rejects the uneconomic approach of barring all new ozone-depleting compounds regardless of their advantage relative to current products and their usefulness during the transition to substitutes with no effect on the ozone layer.

Atmospheric lifetime is one important factor in decisions regarding the coverage of the protocol. Decisions to reduce or eliminate the use of short-lived ozone-depleting compounds, such as methyl chloroform, involve weighing the short-term impact of delay against the opportunity to develop improved substitutes to lower the economic costs of action. Under these conditions, it may be sensible to eliminate their use as good substitutes become available.

Costs of Protecting the Ozone Layer

Preliminary estimates place the U.S. costs of a phaseout of CFCs and halons by 2000 at $2.7 billion over the next decade if the schedule of intermediate reductions currently incorporated in the Montreal Protocol is maintained. Acceleration of this schedule would drive compliance costs upward significantly. These cost estimates reflect a substitution strategy involving conservation, process changes, and the use of more expensive substitute compounds. The availability of substitutes is critical to avoid economic disruption.

The United States is using transferable allowances to implement the reductions required under the protocol in a cost-effective manner. Manufacturers and importers of CFCs and halons will receive permits in proportion to their base period market shares. As supply is restricted, rising prices will encourage users with available low-cost substitutes to switch, leaving remaining supplies for high-value uses. This approach avoids unnecessary direct regulation of end-use applications, while ensuring compliance with U.S. obligations to reduce production and consumption. Moreover, because there are significant economies of scale in the production of CFCs and halons, the use of permit transfers to concentrate production in a small number of facilities during the phasedown has the potential to increase efficiency on the supply side. Allowing for this kind of flexibility on the international level would yield further cost savings.

GLOBAL CLIMATE CHANGE

Greenhouse gases (carbon dioxide, methane, CFCs, and nitrous oxide, among others) absorb heat that radiates from the Earth's surface and send some of the heat downward, warming the climate. Many scientists believe that fossil fuel burning, certain agricultural practices, deforestation, and other human activities that increase the atmospheric concentration of greenhouse gases will alter the global climate. Scientists are much less confident of the magnitude, timing, location, and character of the greenhouse-induced warming. Many argue that no warming has yet occurred despite a substantial increase in greenhouse emissions; some contend that appreciable future warming is unlikely. Others strongly dispute these views.

Computer models of the Earth's climate system are a principal tool of global climate research. Economic models of energy supply and demand provide the future emissions projections used as input by the climate models. Economic models can also be used to assess the cost and growth impacts of policy actions to change the future emissions profile.

Economic and Scientific Uncertainties

Projections of future emissions of greenhouse gases, a critical input to climate models, are highly sensitive to future rates of population growth, economic growth, and development of new technologies for energy production and use. The inability to place narrow bounds on any of these factors necessarily places very wide bounds on any forecast of future emissions. One recent study could conclude only that actual global carbon emissions from fossil fuel combustion in the year 2050 are likely to be between 50 and 1,100 percent of current annual emissions. This result is typical of the high degree of uncertainty in this area.

Even if estimates of future emission levels are correct, the magnitude of actual climate change will depend on numerous interrelated and, as yet, poorly understood geophysical processes that have both positive and negative feedbacks on warming. For example, an increase in evaporation from a warmer climate will almost certainly increase average cloud cover. Depending on their altitude and configuration, additional clouds can either intensify or counteract warming. Current climate models are incapable of providing reliable estimates of the effect that clouds will actually have if warming occurs.

If the atmosphere begins to warm, a transfer of heat from the air to the oceans is expected to slow the rate at which air temperature actually rises. This effect, which would decrease as ocean temperatures increased, could delay the full effect of any increase in the concentration of greenhouse gases on air temperature for a period ranging from decades to centuries, with wide variations by region. Regional variation in other critical effects such as seasonality, rainfall distribution, and soil moisture is also likely, but current climate models lack sufficient resolution to identify regional differences clearly. This deficiency makes it difficult to specify, among other things, the sea level rise resulting from any degree of average warming.

Considerable resources and effort are being devoted to resolving uncertainties in climate modeling, and in gaining a better understanding of processes that are poorly understood and are not explicitly treated in current climate models. The President's 1991 budget proposal includes $1.03 billion in funding for global climate change research. This figure reflects an increase of 57 percent over the current funding levels and a 100-percent increase over 1989 expenditures. The United States has also taken a leadership role in the Intergovernmental Panel on Climate Change, the primary international forum for consideration of the scientific, socioeconomic, and policy issues concerning global climate change.

At the Malta meeting with the Soviet President in December, the President of the United States announced his intention to host a

White House Conference on Scientific and Economic Research on the Environment in the spring of 1990. The general purpose of this high-level international meeting will be to advance the quality and understanding of the scientific and economic analytical tools and data necessary to confront international environmental problems, including global climate change. Sound scientific and economic analyses must be the foundation for any policy action in this area. The President of the United States also offered to host the first negotiating session for an International Framework Convention on Global Climate Change in the fall of 1990.

The compounded uncertainties of the projections of future emissions and the climate models present a formidable barrier to accurate forecasting. At present, there is an extremely high level of uncertainty regarding possible future climate change. Some reputable scientists believe that there will be no significant greenhouse warming over the next century. But other reputable scientists believe that a warming of between 1.5 °C and 4.5 °C (with most recent estimates falling into the lower half of this range) could occur by the middle of the next century if emissions grow rapidly. A warming of this magnitude could result in a rise in sea level estimated to range from a little under one foot to about a foot and a half by the end of this period. Both the more optimistic and the more pessimistic judgments are subject to revision as scientific and economic inquiry progresses and additional data are gathered.

If the current understanding of greenhouse processes is correct, some warming could occur by virtue of past emissions. Therefore, some adaptation would be required even if future greenhouse emissions were sharply curtailed. Even though scientists may yet learn that no significant warming is likely, it is nonetheless worthwhile to address two distinct policy questions. First, what actions could be taken now to limit emissions of greenhouse gases and what are the likely costs of those actions? Second, what are the possible economic and other effects of warming that, if these scientists are correct, will occur in any event?

Sources of Greenhouse Gas Emissions

Some steps have already been taken that will reduce greenhouse gas emissions. In addition to their role in stratospheric ozone depletion, CFCs account for 14 percent of total greenhouse emissions from human activities on an impact-weighted basis; the planned phaseout of CFCs is clearly important. In the recently negotiated agreement to replenish the financial resources of the International Development Association, the United States called for preparation of environmental action plans in borrowing countries, expansion of programs for end-use energy conservation and renewable energy sources, and other environmental reforms.

On the domestic front, the Administration's clean air initiative promotes the development of technologies that will improve the efficiency of converting energy stored in coal and other fossil fuels into electricity. The allowances system and the proposed cap on sulfur dioxide emissions may also focus renewed attention on improving efficiency in end-uses of electricity as an alternative to new fossil-fueled generating capacity. Although the measures cited above should reduce net greenhouse emissions, the justification for taking these actions does not depend on resolving the high uncertainties about possible climate change.

Carbon dioxide accounts for about one-half of the current greenhouse gas emissions caused by human activity. The shares of methane, CFCs, nitrous oxide, and other gases are 18, 14, 6, and 13 percent, respectively. Clearly, possible climate change is not a one-gas problem: gases other than carbon dioxide play a significant role. Nonetheless, international attention and current analysis of greenhouse gas limitation policies focus almost exclusively on carbon dioxide.

THE COSTS OF REDUCING CARBON DIOXIDE EMISSIONS

Fossil fuel combustion is the primary source of carbon dioxide emissions. Deforestation accounts for an additional 10 to 30 percent. Other activities such as agriculture and cement manufacturing contribute smaller shares. Although all fossil fuels contain carbon, coal contains about 1.75 times as much carbon per unit of heat energy as natural gas and about 1.25 times that of oil.

In contrast to the situation for CFCs, low-cost substitutes for fossil fuels used in electricity generation, transportation, heating and cooling, and process heat applications are not currently available or on the immediate horizon. Unlike sulfur dioxide, no commercially feasible technology for scrubbing carbon dioxide from combustion waste gases is available. Thus, for the foreseeable future, only lower energy consumption or fuel switching could reduce carbon dioxide that results from fossil fuel combustion. A substantial increase in the price of fossil fuels would likely be required to reduce consumption substantially.

Experience following the 1973 and 1979 oil shocks shows that large increases in the price of energy can reduce the energy intensity of economic activity. The period between 1973 and the sharp decline in oil prices in 1986 saw a significant increase in the relative price of energy. Between 1973 and 1985, the price of energy rose by 47 percent relative to nonenergy products at the consumer level and by more than 80 percent at the industrial level. The ratio of energy use to real gross national product fell by 2.3 percent annually in the United States over this period as consumers and produc-

ers responded to higher energy prices by substituting away from energy and energy-intensive products. With no growth in energy consumption over the period 1973 to 1985, carbon dioxide emissions remained level. The impact on carbon dioxide emissions of the increase in the share of primary fossil energy derived from coal over this period was offset by growth in the use of nuclear power, which produces no greenhouse emissions, and of natural gas. However, the growth rates of output and productivity over this period, 2.3 percent and 1.0 percent, respectively, were far below the corresponding rates of 3.7 percent and 2.9 percent for the 1948–73 preshock period.

The relationship between energy prices, energy consumption, and economic growth is also reflected in more recent data covering a period of significant decrease in relative energy prices at the consumer and industrial levels. Between 1985 and 1988, annual growth rates in output and energy use snapped back to 3.6 percent and 2.7 percent, respectively.

Although the slowdown in productivity and output growth between 1973 and 1985 can be attributed to many factors, higher energy prices clearly played an important role. Energy price increases of comparable or larger size would likely be needed to induce the large energy efficiency improvements and demand reductions that must occur to achieve the ambitious targets for carbon dioxide emissions reductions that some have advocated. Although much has changed since 1973—it may be harder now to expand reliance on nuclear power, for instance, even though the regulatory policy errors of that period are less likely to be made—the oil-shock period provides a useful benchmark for consideration of the likely impact of emission reduction policies on output and productivity growth. On balance, there is no reason to believe that an attempt to reduce energy use significantly would be substantially less economically disruptive today.

Modeling the economic effects of policies to curtail carbon dioxide emissions is still in its infancy, and results of modeling efforts remain tentative and controversial. (Even less has been done with regard to other greenhouse gases.) *Recent studies suggest, however, that the costs of policies to stabilize or reduce carbon dioxide emissions from fossil fuel combustion would be high.*

One recent study placed the cost of gradually reducing U.S. carbon dioxide emissions by 20 percent between now and 2100 to range from $800 billion, under optimistic scenarios of available fuel substitutes and increasing energy efficiency, to $3.6 trillion under pessimistic scenarios. These present-value estimates, which reflect the discounting of real future costs at a 5-percent annual rate (Box 6–4), are between 35 and 150 times larger than EPA's similarly discounted estimate of the costs that would be incurred over the next

century by consumers and industries forced to use more expensive or less effective substitutes if a complete phaseout of CFCs and halons were implemented by the year 2000.

Box 6–4.—Discounting Over Long Horizons

The costs of reducing greenhouse gas emissions must be borne both now and well into the next century; the benefits of slowing climate change may not be perceptible for many decades. Discounting is required to compare costs and benefits—both market and nonmarket—that occur at different dates.

Suppose, for instance, that a 5-percent real rate of interest is appropriate for these calculations. (If an investment yields a 9-percent rate of interest in dollar terms, but prices rise by 4 percent per year, the real purchasing power of invested funds grows by 5 percent annually.) One dollar invested at 5 percent per year in 1990 will return $18.68 in purchasing power in 2050 if the interest income between 1990 and 2050 is reinvested. Therefore, it makes no sense to spend $1 today to obtain benefits worth $10 in 2050: future generations must receive at least $18.68 in 2050 benefits to be better off than they would be if the dollar were invested instead.

It is always possible to compare values in either current or future terms. To compare in 1990 terms, one must divide the 2050 value by 18.68. Thus, $100 billion in 2050 is worth only $5.35 billion in 1990. To compare in 2050 terms, $100 billion in 1990 is worth $100 billion x 18.68 = $1,868 billion, or $1.868 trillion. Either approach will give comparable results; what matters is that all values are placed on a consistent basis.

The costs of carbon dioxide stabilization policies can also be looked at from a future perspective. The present-value estimates cited above reflect reductions in real U.S. output ranging from 1 to 5 percent over the 2010 to 2100 period. Other preliminary estimates place the cost of stabilizing 2050 emissions at 1990 levels in the range of 1 to 2 percent of 2050 gross national product (GNP). To put these estimates in perspective, a 2-percent reduction in GNP in the year 2050 is worth about $340 billion 1990 dollars, assuming a 2-percent average annual rate of economic growth between now and 2050.

The impact of carbon dioxide stabilization policies can also be considered in terms of growth-rate impacts. A recent estimate based on energy-output balance relationships suggests that global carbon dioxide stabilization could cut world economic growth in half, even after accounting for substitution toward cleaner energy. Other studies and U.S. experience following the oil shocks suggest

substantial if less dramatic impacts. As shown in Chapter 4, even small changes in growth rates can have a large effect on future output levels.

Clearly, economic models as well as climate models are subject to considerable uncertainty. The early estimates of potential costs described above are far from definitive. The critical uncertainty regarding forecasts of the date and cost at which alternative technologies will become available is unlikely to be resolved soon. Meanwhile, the refinement of current estimates and the development and application of new, more detailed economic models would help to provide a stronger foundation for decisions regarding possible actions to limit carbon dioxide emissions.

Other Issues in Reducing Carbon Dioxide Emissions

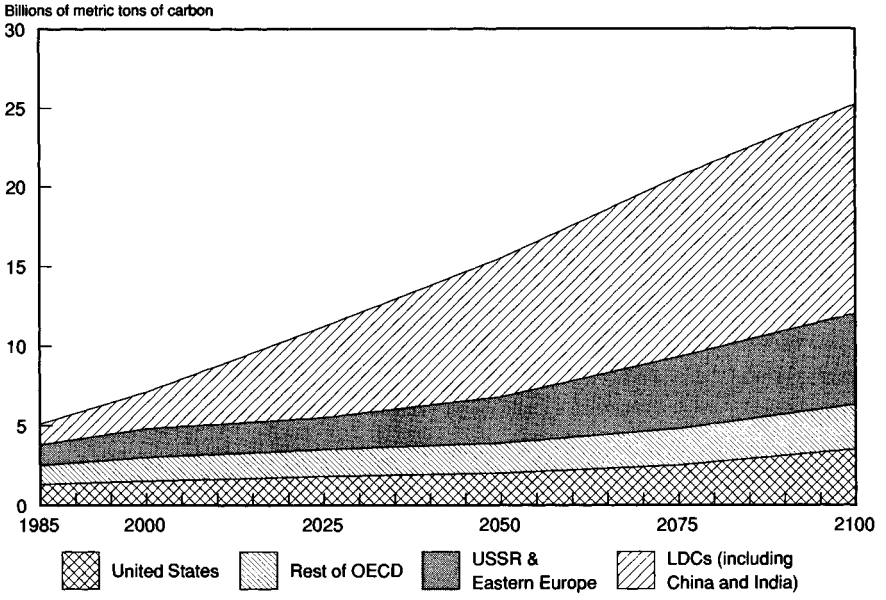
Reductions in U.S. carbon dioxide emissions on a unilateral basis or in cooperation with other Organization for Economic Cooperation and Development (OECD) countries alone would not significantly alter the projected growth in world carbon dioxide emissions (the OECD is an international organization of industrialized countries that promotes economic growth and trade). Chart 6–1 shows current and projected shares of total carbon dioxide emissions. The emissions share of the United States and other industrialized countries is projected to decline sharply as non-OECD economies experience growth and increasing energy intensity. Developing countries are expected to account for the majority of future emissions increases. Clearly, any significant reduction in emissions growth would require the cooperation of the Soviet Union, Eastern Europe, and the developing countries.

The ratio of carbon dioxide emissions to energy consumption depends on the mix of energy sources employed and thus varies substantially among industrialized nations. This ratio is high for the United States, which depends more heavily on coal than most of its major competitors (Table 6–2), as is energy use per dollar of GNP. *All else equal, uniform international standards or user charges for carbon dioxide emissions are thus likely to have a larger adverse impact on the United States than on its major competitors.* In particular, a fee on carbon dioxide emissions (discussed below) would increase electricity rates in the United States relative to rates in countries that rely more heavily on nuclear and hydroelectric energy, which produce no greenhouse emissions, or in countries relying on fossil fuels with less carbon per unit of energy content. This situation presents a marked contrast to the 1973 and 1979 oil shocks, where greater U.S. self-sufficiency in energy provided an advantage relative to most other industrialized countries.

Other than hydroelectric or geothermal power, which have very limited potential to supply increased electricity within the United States, nuclear power is the only large-scale technology for electric-

Chart 6-1

CARBON DIOXIDE EMISSIONS BY REGION. The LDC share of carbon dioxide emissions is projected to grow rapidly. The U.S. share is projected to decline.



Source: Environmental Protection Agency, *Policy Options for Stabilizing Global Climate* (Rapidly Changing World Scenario).

TABLE 6-2.—*Fuel Share in Electricity Generation, 1986*

[Percent]

Country	Coal	Oil	Gas	Nuclear, Hydroelectric, and Geothermal
Canada	15.7	1.3	1.5	81.5
France	9.7	1.5	.8	88.1
West Germany	56.9	3.1	6.2	33.8
Japan	14.7	28.2	19.3	37.8
Netherlands	26.8	5.1	61.8	6.3
Sweden	3.0	2.0	.1	94.9
United States	56.2	5.5	10.1	28.1

Source: Organization for Economic Cooperation and Development, "Energy Policies and Programmes of IEA Countries—1987 Review," Paris, 1988.

ity production that is both benign from a greenhouse emissions perspective and commercially available now. Policies regarding the future role of nuclear power, including the timetable for the development and commercialization of modularized, inherently safe reactor designs, will need to be closely coordinated with policies that affect the future role of fossil-fuel generation.

POLICY TOOLS TO IMPLEMENT A REDUCTION IN GREENHOUSE GAS EMISSIONS

A variety of policy tools, including user charges, correction of market failures, regulatory standards, expanded funding for research on and development of substitutes for fossil fuels and other sources of greenhouse emissions, and efforts to reduce and reverse deforestation, could be used to slow the buildup of greenhouse gases in the atmosphere. These approaches are relevant for nearly all greenhouse gases, not just carbon dioxide. While international attention has naturally focused on carbon dioxide as the single largest contributor to the greenhouse effect, control costs must also be considered in the design of any strategy to reduce net emissions of greenhouse gases. A cost-effective strategy may involve a focus on other gases or on sinks that absorb greenhouse emissions. Different approaches may be suitable for different countries.

A fee, charge, or tradable allowances system for greenhouse gas emissions based on an index of the global climate impacts of each greenhouse gas would provide a least-cost reduction in such emissions. A fee or a tradable allowances scheme would lead firms and individuals to consider the social cost of greenhouse emissions in their private decisions. An emission charge or the need to consider the value of allowances would affect decisions ranging from the choice among alternative technologies for generating electricity, to the energy efficiency of cars, buildings, and industrial equipment, to the demand for automobile travel. Because market-based approaches are flexible and provide incentives that affect decisions at all points along the production-consumption chain and across all industries, they automatically focus on those activities where emissions reductions can be achieved at least cost.

The economic impact estimates for carbon dioxide stabilization discussed above reflect the high costs of reaching very ambitious goals even when efficient market-oriented tools are used. Market-based approaches could also be implemented at a less draconian level to nudge the economy gently and gradually in the direction of greater energy efficiency. Such an approach would test the flexibility of the economy without betting the current way of life on the outcome.

Publicly supported research and development of nonfossil energy sources, including biomass, solar, and next-generation nuclear fission, may contribute to a reduction in greenhouse emissions. It is often noted that the fruits of innovation cannot always be fully captured by the innovator, leading to underinvestment in the development of new technology. This problem is particularly acute for innovations that address a global problem, such as greenhouse emissions. Breakthroughs in environmentally benign technologies hold the promise of lowering the future emissions trajectory while

advancing economic progress. Opportunities also exist outside the energy area. For example, emissions of methane from agriculture might be cut through the development of improved techniques for farming and livestock management.

Reforestation can contribute to reductions in net emissions of carbon dioxide into the atmosphere. Just as tropical deforestation increases carbon dioxide emissions by releasing carbon that is fixed in trees through photosynthesis, reforestation can increase the uptake of carbon dioxide from the atmosphere by increasing photosynthesis. Reforestation potential varies significantly across countries according to their climate and land use patterns. The United States has an abundant supply of urban and rural land suitable for reforestation. Large-scale reforestation efforts could have significant impacts on agricultural and timber production, however, which would in turn affect consumers and producers in those markets.

Correcting Market Failures

In some cases, market failures may serve to increase emissions of greenhouse gases. *Interventions that address market failures directly are generally preferable to direct regulation via standards.* Approaches that merit consideration include public information programs, promotion of efficient appliances by utilities, and changes in mortgage qualification rules to reflect appliance operating costs.

One promising concept to reduce the growth in electricity use is demand-side management. A utility faced with capacity constraints would consider proposals for demand reduction through efficiency improvements and proposals to increase supply on an equal footing, and choose the lowest cost alternative. One barrier to implementing programs of this type is that utility profits under traditional State rate-setting regulation are often linked directly to the level of electricity sales. Regulatory changes at the State level, possibly to permit nonutility companies to bid for demand reduction that can be compared with the costs of increasing supply, are needed to implement demand-side management. Although estimates of the emissions reductions available through widespread application of this approach vary widely, the removal of regulatory barriers and biases in the market for electric power makes economic sense.

The Limitations of Efficiency Standards

Energy efficiency standards can also be used to overcome information barriers and institutional rigidities. However, this command-and-control approach has several significant disadvantages compared with incentive-based systems or alternative approaches that address perceived market failures directly. First, the burden of meeting standards cannot be reallocated across industries or across

the different greenhouse gases in private cost-saving transactions. Second, in the absence of price increases for fossil fuels, standards can increase the demand for energy-using services. Finally, standards reduce the range of products available to meet diverse consumer needs.

The costs of efficiency standards are often hidden. For example, a higher average fuel economy standard might force consumers to buy only the more fuel-efficient and generally cheaper vehicles in the existing product line, thereby actually reducing their purchase and gasoline costs. However, out-of-pocket costs do not reflect costs imposed by denying consumers the option to purchase other valued attributes such as safety, performance, and comfort. Higher fuel efficiency without higher fuel prices also lowers the per mile cost of driving, which encourages more trips, more fuel consumption, and more emissions. Because fuel economy labels already inform consumers about energy consumption, and few apparent institutional rigidities exist, the economic rationale for stringent auto efficiency standards is doubtful at best.

Assertions that efficiency improvements are cost-saving or nearly costless beg the question why these improvements are not automatically taking place. Such assertions must be examined to see if the claimed efficiency gains involve the sacrifice of other product attributes that were excluded from the analysis or market imperfections that could be addressed directly. One must ask whether the analysis considers the entire range of consumer usage rates and energy prices, or is based only on national average values.

In the latter case, efficiency standards may appear to be cost-effective on the national level, while actually restricting the choices of only those consumers who face low energy prices or have low usage rates (and thus energy consumption) for the product. Those with high usage rates or those who face high energy prices would purchase high-efficiency products even in the absence of mandatory standards. Taking this diversity into consideration, an efficiency standard that appears to save money on the national level may actually impose costs.

IMPACTS OF CLIMATE CHANGE

Available assessments of the costs of substantially slowing the rate of greenhouse gas emissions may reach the trillions of dollars. What benefits might be obtained with those costs? This question is difficult to answer, but it is possible to identify several nonmarket impacts of possible future climate change, and to arrive at preliminary estimates of some market effects.

There may be both positive and negative effects of climate change on human health, although these effects are controversial. Temperature extremes—both hot and cold—are associated with higher mor-

tality rates for populations, such as the elderly, that are susceptible to physical stress. These relationships suggest that higher temperatures in winter could reduce weather-related illness and death, whereas higher summer temperatures could increase them. These adverse health effects are not well understood, however, as illustrated by the fact that the average temperature differential between New York City and Atlanta is as large as the most extreme predictions of warming, yet there is no evidence that Atlanta's warmer climate creates a greater health risk than New York's. There could also be changes in the regional distribution of vector-borne diseases, such as those carried by ticks, fleas, and mosquitoes, associated with climate change.

Substantial reductions in economic growth in low-income countries caused by attempts to reduce greenhouse gas emissions could have far greater adverse health consequences than any direct health effects associated with climate change. When one considers the very close relationship around the world between income levels and important health indicators such as infant mortality and life expectancy, it is clear that one of the most important factors affecting health is the ability to afford adequate nutrition and health care.

If global warming occurs, its impact on plants and animals, including humans, is likely to depend on how rapidly it occurs. Both the human and other species' ability to adapt to warming appear to increase if the rate of change is slow. In agriculture, plant breeding and biogenetic techniques can be used to adapt crop varieties to changes in solar radiation, temperature, and moisture. These techniques are more likely to succeed when the incremental changes are small and there is adequate time to undertake adaptive research. In the wild, species can adapt to climate change by moving to suitable environments or adapting to new ones through natural selection. Scientists believe that some wild species of plants and animals may not adapt to rapid climate change and might be lost, thus threatening the biological diversity that has evolved over millions of years. The fact that many medicines contain active ingredients obtained from substances in plants and animals, especially those in the tropics, suggests that a reduction in diversity could represent a significant economic loss.

There is also some reason to believe that extreme weather events may be more important than the increase in average temperature for adaptation to and survival of climate change. A change in the frequency and intensity of hurricanes and tornadoes, for example, could substantially affect their costs, measured in both human life and property.

Sea-level rise is another possible effect of global warming. The U.S. coastline, like the coastlines of other industrial maritime nations, has been extensively developed, with buildings often within

100 feet of the sea. The cost of protecting the entire U.S. shoreline against substantial sea-level rise would be prohibitive, as it would be for many countries with densely populated low-lying areas. The cumulative costs of protecting densely developed shoreline areas from a 20-inch rise is estimated to be between $37 billion and $50 billion, or between $7 billion and $10 billion in present value under the assumption that all costs were incurred in 2025. If the costs of protecting against sea-level rise were spread over the more distant future, as seems likely, their present value would be lower. If the sea level rises gradually and predictably, a reasonable response strategy might include steps to encourage some population and economic activity to relocate inland to higher ground when existing structures come due for routine replacement.

Most sectors of industrial economies are not climate-sensitive, or could adapt to climate changes. The costs of adaptation depend on how rapidly warming occurs. Useful lives of plant and equipment tend to be shorter than 50 years, so that a slow warming trend would permit change in the location and composition of economic activity without major or unanticipated disruptions. More rapid changes could result in loss of some immobile private assets, abandonment of certain public infrastructure, and reinvestment at new locations.

The most significant impacts on industry are likely to be in activities that involve biological processes that are sensitive to temperature and rainfall such as agriculture, forestry, and fishing—which account for about 2 percent of U.S. GNP. Global climate change could have both positive and negative impacts on productivity. Up to a point, higher carbon dioxide concentrations improve the efficiency of photosynthesis and thus increase agricultural productivity. Warming could change the amount and distribution of precipitation and shift cropping patterns regionally, but regional predictions are now considered highly unreliable.

Preliminary analyses show that global climate change could result in a net loss in agricultural productivity, but no evidence shows that it would threaten the world's food supply even under the most pessimistic scenarios. The Department of Agriculture has made preliminary estimates of the regional and global economic impacts of changes in agricultural production that might be associated with warming. Under one scenario, the net global costs of a doubling of atmospheric carbon dioxide were estimated to range from $35 billion to $170 billion annually, with the United States losing $1 billion annually. Equally plausible but less pessimistic assumptions about yield effects implied small net gains to the global and U.S. economies. Underlying these small net effects would be some redistribution of income from consumers to producers through higher agricultural prices.

These estimated impacts on global and U.S. agriculture can be put into perspective by comparing them with the impacts of agricultural policies discussed in Chapter 7. Using the same economic model, Department of Agriculture researchers estimated that the trade-distorting policies now in place around the world impose a net cost on the world of $35 billion annually and $10 billion annually for the United States. Thus, the annual costs of current agricultural policies are estimated to be the same order of magnitude as the estimated agricultural impacts of global warming. However, the agricultural losses from a doubling of carbon dioxide are not likely to occur until well into the next century. For example, using a 5-percent real interest rate, a global loss of $170 billion in 2050 amounts to about $9 billion in 1990 dollars (Box 6-4). Thus, the costs of today's agricultural policies are estimated to be more important in economic terms than even pessimistic estimates of the effects of global warming, largely because the former must be borne in the present and the latter may occur, if at all, in the relatively distant future.

SUMMARY

The United States is taking a leadership role in international efforts to reduce scientific and economic uncertainties about global climate change and to build a common understanding about all aspects of the climate change issue from the basic Earth science, to impacts on human activities, to potential response strategies. The data now available on the economic costs of reducing greenhouse gas emissions suggest that it may be as important to improve understanding of the economics of global warming as it is to improve current ability to predict warming itself.

Policies such as the phaseout of CFCs, the President's clean air proposal, and reforestation can significantly reduce global net emissions of greenhouse gases. At the same time, they can be justified on their own merits. Increased research and development funding and modest changes in fuel prices can reflect the broader social interest in promoting energy conservation. Currently available analyses indicate that near-term stabilization or immediate reduction of carbon dioxide emissions from fossil fuel combustion is likely to impose large economic costs on current and future generations. Such measures must be carefully scrutinized, given the current limited understanding of the impacts and likelihood of global warming. The highest priority in the near term should be to improve understanding in order to build a foundation for sound policy decisions.

Until such a foundation is in place, there is no justification for imposing major costs on the economy in order to slow the growth of greenhouse gas emissions. Policies that may result in slower

growth in greenhouse emissions, but can also be fully justified on other grounds, are the best short-run way to address this potential problem while the uncertainties that exist today are reduced. Being justified on other grounds means that a program yields non-greenhouse benefits commensurate with its costs; it cannot mean simply having some non-greenhouse benefits. The adoption of many small programs, each of which would fail a standard cost-benefit test, could significantly slow economic growth and eliminate jobs.

Because the intense research currently underway may reveal that it is desirable to slow the growth of greenhouse gas emissions, it is useful to consider the elements of what would be an economically rational strategy to do so. Any strategy to limit aggregate emissions without worldwide participation would be likely to fail. A cost-effective policy must provide for comprehensive coverage of both sources and sinks of all major greenhouse gases. It must also provide appropriate incentives for emissions reductions and deal directly with market failures. Carbon dioxide emissions, in particular, could be reduced at much lower cost through the use of emissions fees than through government-imposed standards for energy efficiency.

CONCLUSION

There is widespread agreement that both economic growth and environmental quality are desirable policy goals. They need not be incompatible, and are in many respects complementary. Three principles should guide regulation. First, realistic environmental and risk-reduction goals that balance benefits and costs must be set. Second, strategies that work with rather than against market incentives should wherever possible be used instead of less effective command-and-control regulation. Market-oriented approaches, such as marketable air pollution allowances, create incentives for firms to achieve environmental goals in a cost-effective manner. Third, government should support the development and dissemination of scientific and technical information about environmental and health risks.

The Administration's clean air initiative, its proposals to improve pesticide regulation and food safety, and its efforts to improve the understanding of global environmental issues each illustrate how these principles for environmental regulation can be put into action. Other pressing environmental issues will face the Nation in the 1990s and beyond. The application of these principles to all environmental problems will help to achieve both a strong economy and a healthy environment.

CHAPTER 7

Growth and Market Reform in the Global Economy

THROUGHOUT THE WORLD, there are welcome signs that barriers to free markets and to an open trading system are coming down. Indeed, the movement toward free markets accelerated dramatically in 1989. Revolutionary transformations from centrally planned to market-oriented economic systems are being attempted in Poland, Hungary, and other countries in Eastern Europe. Economic reforms have improved performance in some of the heavily indebted developing countries, such as Costa Rica, Mexico, and the Philippines, and recent steps to reduce debt burdens promise to further this goal. Market-oriented development in the Asian Pacific Rim economies is proving a dramatic success, and efforts are under way to translate the export orientation of these nations into higher domestic living standards. Barriers to the free movement of goods, services, labor, and capital are being removed to establish a single, unified market in Western Europe. The United States and its trading partners are continuing to work for a significantly freer world trading system by developing or extending rules for trade in agriculture, services, intellectual property, and other areas through the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), which is to be completed this year.

What has been called the revolution of 1989 in Eastern Europe highlights the intimate interaction between political and economic freedoms. U.S. support for democracy and free markets, as well as the recent success of the U.S. economy and its market-based system, have been a key impetus to these transformations. During his first year in office, the President took significant actions to further the development of market reform. He submitted legislation for financial and technical support to Poland and Hungary, which was enacted by the Congress last November. More recently, he has proposed a program of technical assistance and a trade agreement with the Soviet Union.

The United States has also been a leader throughout the postwar period in working with other countries toward a more open international trading system. However, many steps have yet to be taken. Thus, the successful completion of the Uruguay Round of GATT negotiations and the strengthening of this rules-based insti-

tution for liberalizing international trade is the highest priority of the President's trade policy. The United States and all developed and developing economies can benefit greatly from a healthy global economy and full participation in an open international trading system.

MARKET-ORIENTED REFORM IN CENTRALLY PLANNED ECONOMIES

In recent months, the world has witnessed unprecedented developments in Eastern Europe as many countries moved toward democracy and economic reform. These countries have set out on a road that, while difficult, is the only hope for sustained improvement in the future economic well-being of their citizens. The new Polish government has already begun to implement a major economic restructuring and stabilization program. In October 1989, Hungary declared itself a republic. While economic reform has been under way for many years, Hungary is to launch a new reform initiative in 1990. Since the opening of the Berlin Wall in November, economic contacts between East and West Germany, including plans for continued assistance, have multiplied. There have been leadership changes in Czechoslovakia, Bulgaria, and Romania. These countries have indicated some desire to undertake market-oriented reforms and are in the process of redesigning economic policies. As part of continuing reform efforts, new economic policies were recently announced in Yugoslavia.

Economic reform has also been under way in other parts of the world. The People's Republic of China has moved to reshape its economy, and began in 1978 to rely increasingly on markets. However, political actions associated with the Tiananmen Square repression set back these reforms. Through 'glasnost' (openness) and 'perestroika' (restructuring), the Soviet Union began to initiate political, legal, and economic reforms in 1985. Since 1985, the Lao People's Democratic Republic has significantly increased reliance on market forces.

These changes in Eastern Europe, the Soviet Union, China, and Indochina are of tremendous global significance. One-fifth of the world's population lives in China, and nearly 8 percent live in the Soviet Union and countries of Eastern Europe.

These countries are all addressing the fundamental question of how some form of market economy can revive growth rates and raise living standards after years of disappointing economic performance. The World Bank estimates per capita income for 1988 at $1,850 in Poland and $2,460 in Hungary. In contrast, it was $19,780 in the United States. (Other estimates suggest that these figures may understate living standards in Poland and Hungary somewhat.) Even

if the economic reforms are successful, it will take many years to close these gaps. However, market-oriented economic reforms can generate noticeable improvements in the short run by reducing shortages of key goods and services, by improving quality, and by producing goods that people actually want, rather than what central planners want them to have. Furthermore, the freedom to choose is an important addition to human welfare that is not measurable by per capita income levels.

Bold and comprehensive plans for economic reform have been put forth by some of the centrally planned economies. These reforms will eventually improve living standards for citizens of these countries. If successful, they promise future growth and prosperity. However, the difficulties of economic transition should not be underestimated. Transformation from one economic system to another will be extremely complex and the adjustment may be painful, involving widespread unemployment with limited unemployment insurance or other social support systems currently in place. No single set of policies will work for all countries, and the appropriate mix and timing of economic policies must be designed on a case-by-case basis. Any policy package necessarily involves the risk of failure and a host of uncertainties. However, external support will raise the likelihood of success. The President has taken a deep interest in the progress of political and economic reform and remains committed to providing assistance.

CENTRALLY PLANNED VERSUS MARKET ECONOMIES

Between World War II and the early 1950s, most countries in Eastern Europe adopted the Soviet economic model of central planning and became members of the Council for Mutual Economic Assistance (CMEA). Each centrally planned economy is unique, just as the United States, West Germany, and Japan are each examples of market economies but with distinct characteristics. A fundamental distinguishing feature of centrally planned economies is that state authorities, not private citizens, own and control most of the means of production. Instead of allocating resources through markets that establish prices based on supplies and demands, the state authorities generally formulate detailed plans for inputs and outputs. Coordinating this process properly requires an immense amount of information, making it exceedingly difficult for a centralized system of managers to allocate scarce resources according to what people want, or to respond to changes in demands, supplies and technologies. The lack of private ownership implies that individuals have little stake in improving resource allocation. Of course, the population as a whole would gain if resources were used to produce goods and services they valued more highly.

Although the operation of centrally planned systems is very complex, a simple polar example illustrates key issues. Consider an enterprise producing shirts. In a centrally planned economy, planners would typically determine the amounts of cloth, dye, thread, and other inputs the enterprise would receive and the source and price of each input. Workers would be assigned to the enterprise, and often allocated to particular tasks. The plan would also set targets for output of each type of shirt and determine the final prices to households.

The contrast with a market economy is striking. In a centrally planned economy, prices of labor, goods, and services do not adjust to reflect supplies and demands, and production decisions are not motivated by profitability. Unlike a market system, producers typically have no leeway to reduce prices or production when inventories accumulate or to raise prices or production as inventories decline—even if consumers form long queues. The enterprise does not base hiring decisions on its assessment of needs and worker quality, nor does it choose where to purchase inputs so as to minimize production costs. Furthermore, state-owned enterprises are allocated the credit needed to finance operations through a centralized banking system. Most centrally planned economies have never developed laws to deal with bankruptcies, because enterprises are typically bailed out if costs exceed revenues. Consider the implications for U.S. firm behavior if the Federal Government promised to mail a check to cover the losses of every business that lost money. Such a system severely weakens the incentives for producers to use resources efficiently.

Because individuals in centrally planned economies own few of the factories or other productive assets, individuals have little incentive to respond to market signals about resource scarcity, even if such signals exist. Instead, the central planning system puts a premium on meeting output targets. The lack of private ownership also provides little incentive for innovation or quality control. New firms cannot simply enter the market to take advantage of better management or new ideas.

Centrally planned economies have persistent problems with demand exceeding supply at officially set prices. As shortages of consumer goods and of inputs required for production develop, the scarce supplies must be rationed to households and to firms, often resulting in long queues and disruptions to production. At the same time, other products may be overproduced and go to waste. The shortages often lead to black markets in which goods sell for far more than their official prices. If shortages get worse over time, hidden inflation may develop. As official prices are decontrolled, measured inflation soars. For example, the removal of controls on

food prices in Poland resulted in the acceleration of inflation in Poland last August (Box 7–1).

Severe housing shortages in Poland provide another example of chronic excess demand. The wait for an apartment has been reported to be as high as 15 years in large urban areas. Largely because of high government subsidies, housing has been very inexpensive for households lucky enough to get it. One survey estimated expenditures on rent or cooperative housing at just 3 percent of total household expenditure in the mid-1980s, compared with more than 14 percent in the United States. Unlike the United States, however, rationing constrains many Polish families from choosing housing of a different size, or in a different area, or from moving to their own residences. Although recent studies have found high returns to producers of new housing, new building is inadequate. Private construction has failed to provide a remedy because of lack of materials, undeveloped financial markets, and counterproductive laws and regulations governing ownership and property transfer.

Centrally planned economies are often also faced with an inadequate tax base, large budget deficits, and a tendency to print money to finance this deficit, fueling inflation. Inflation, which has been estimated recently at 50 percent *per month* in Poland, and at an even higher rate in Yugoslavia, has become the overriding problem. Reducing inflation is a priority of both governments. These difficulties worsen the problems arising from misallocation of scarce resources. Government pricing, credit allocation policies, and subsidies to state-owned enterprises can raise expenditures and increase the budget deficit. With few exceptions, there is no domestic market to finance the deficit through bond sales, so that the central bank cannot make independent decisions about money growth.

ECONOMIC PERFORMANCE OF CENTRALLY PLANNED ECONOMIES

Poor economic performance has been a major impetus for transforming centrally planned economies toward market economies. Even economies such as Hungary that have been gradually undertaking reforms have experienced long-term declines in productivity, product quality, and economic efficiency. Planners have also been concerned about slow progress in developing and adopting new technologies.

Without meaningful price indices, measures of aggregate output are unreliable. Official CMEA statistics use net material product, which is a measure of national output like gross domestic product, except that it excludes the value of depreciation and of nonmaterial services, such as health, education, and public administration. These data show that average annual growth of net material product has declined consistently over the past four decades. Real net material product growth averaged 9.6 percent during the recovery

Box 7-1.—Difficulties in the Transition from Central Planning: Food and Food Aid in Poland

Developments in food supplies and food prices have been a focal point of Poland's economic difficulties. These developments illustrate both the difficulties of implementing market-oriented reforms and the potential short-term hardships of a transition from central planning.

Long lines at food stores were an early, visible sign of problems. Three main factors accounted for the queues. First, political and economic uncertainties contributed to widespread panic buying and food hoarding by consumers. This response was related in part to memories of severe food scarcities and sudden price hikes. Second, very rapid inflation meant that commodities, such as food, have been a better store of value than currency. Thus, farmers withheld products from the market. Finally, the distribution system had been disrupted. State enterprises had difficulty procuring output from farmers as state-set prices had not kept pace with rising input prices. Private distribution systems will take time to develop.

Removal of price controls on food in August introduced some market signals, and the lines now seem to have abated. Food prices have risen substantially, reducing demand and alleviating the shortages. Food supplies have not increased markedly, however, largely because higher prices have not generally been passed on to farmers.

Food is now relatively more expensive, however, and the price increases have been especially hard on low-income groups and people with fixed incomes. The United States and other countries have contributed substantial amounts of food aid. In addition to its nutritional value, increasing the availability of food may bolster public confidence in the new government, and help to ease the difficulty of implementing economic reforms.

Food aid must be managed so as to ease the difficult adjustment period without impeding longer run development of agricultural markets. Large amounts of food aid may disrupt Poland's newly emerging market system. Greatly increased food supplies from external sources could seriously lower current prices, which would discourage domestic production and lead to even more severe problems next year. Providing pesticides, machinery, and technical assistance that would help increase agricultural production may yield greater benefits than direct food aid.

from World War II in the 1950s, but fell to 3.2 percent during 1981–87. However, official net material product statistics are widely believed to understate inflation substantially, which implies that they greatly overstate real growth. Furthermore, because the central planning system does not typically produce the goods that people actually want, growth in physical production overstates the value of increased output.

Some centrally planned economies have also had mounting balance of payments difficulties with countries outside the CMEA. Trade and current account deficits have grown, especially since high public investment after 1985 led to a surge in imports from the West. These deficits have been financed primarily through foreign borrowing. Since 1986, both Poland and Hungary have had difficulties in servicing their external debts. Debt levels have risen recently in Bulgaria and in the Soviet Union, and to a lesser extent in Czechoslovakia, although these countries have not had debt-servicing difficulties.

ELEMENTS OF A REFORM PACKAGE

Economic difficulties faced by centrally planned economies are extremely complex. There is no established policy package for reform, nor is there a single prototype market economy that all reformers seek to emulate. However, a growing consensus has emerged on many aspects of the reforms required. In addition to improved long-term growth as resources are more efficiently reallocated, increased reliance on markets is likely to generate some quick payoffs through relieving shortages of food or other goods.

Price and Structural Reform

Perhaps the most important reform is to establish prices that adjust to reflect relative scarcities of goods, labor, and capital. Such prices provide information that can be used to allocate resources effectively through decentralized markets, without the need for an elaborate system of central planning. Institutions need to be put in place to facilitate a market system. These include banks and financial institutions that can help allocate savings to productive investments. Also important is a legal system that defines property rights, provides for bankruptcy, and deals with a host of other issues. Firms need useful and reliable accounting systems. Workers and managers also need to learn, through training and apprenticeship programs, how a market economy works. After 40 or more years of central planning, few residents will have developed entrepreneurial skills. Foreign direct investment and joint ventures can play an important dual role in raising economic growth while providing experience for domestic workers. In addition, unemployment insurance and other support programs for low-income households can provide an important social safety net.

Stabilization Measures

It is exceedingly difficult to reform prices and to provide incentives for private-sector investment and growth in the midst of very high inflation. Thus, in some cases such as Poland, the overall economy must be stabilized before the more fundamental economic restructuring can take place. The difficulties are compounded by the likelihood of large initial consumer price increases as prices that have been kept artificially low for years are decontrolled. The basic elements of a stabilization package are reductions in budget deficits, measures to control money growth, and the establishment of a competitive exchange rate.

History offers some useful examples of reforms. Israel and Bolivia brought down very high rates of inflation in the 1980s. The 1948 Erhard reforms in West Germany eliminated price controls and reestablished a vibrant private sector after several years of administered price controls. These reforms also stabilized the value of West German currency and revived its usage in international markets. But there are no examples where, after four decades of central planning, an economy has successfully accomplished all of these at once. The centrally planned economies face a unique challenge.

RECENT DEVELOPMENTS

Each of the centrally planned economies has its own economic and political situation, calling for somewhat different policy responses. Similarly, the appropriate response from the United States and other developed countries to support these reform efforts differs across cases.

Soviet Union

The Soviet economy has many difficulties in addition to the inefficiencies inherent in central planning. For example, military expenditures of more than 15 percent of gross national product (GNP), compared with 6 percent in the United States, consume large amounts of scarce resources. Also, many Soviet households have stored up massive amounts of rubles (Soviet currency) during years of waiting for scarce goods to become available. Distrust of the undeveloped financial system means that much of this wealth is simply hidden by domestic residents. The stored rubles are a problem because economic reforms that free prices and put appliances and other desired consumer goods on store shelves may trigger a buying spree that would fuel inflation. The inflationary impact of price decontrol will be mitigated if higher prices are fed through to producers, thus raising incentives for increased productivity and output.

In 1985, the Soviet Union initiated a program to restructure its economy. Especially those measures taken since 1987 were intend-

ed to increase reliance on independent decisions of enterprises. This goal has proven difficult to achieve while prices as well as credit and production inputs remained controlled. The Soviet economy continues to rely on output targets set by a central plan. Many fundamental steps toward market orientation of the economy have yet to be taken, and the government's commitment to genuine economic reform therefore remains questionable.

Following the Malta meeting between the Presidents of the United States and the Soviet Union in December, the United States renewed efforts to increase its economic ties with the Soviet Union. These efforts may involve negotiation of a trade agreement and an investment treaty. In addition, the United States has offered technical cooperation, for example, to help the Soviets improve their system of economic statistics. To help further integrate the Soviet Union into world markets, the President of the United States has supported Soviet observership status in GATT, once the Uruguay Round has been completed.

Hungary

Hungary was the first centrally planned economy to introduce major market reforms, initiating a market-oriented reform program in 1968. It has gradually reduced direct control by central planners and has actively encouraged private-sector development. It also has taken steps to reform the price system. Nonetheless, most analysts agree that, while prices in Hungary reflect relative scarcities better than in most other centrally planned economies, mispricing has nonetheless slowed growth. Hungarian authorities continue to control prices of more than one-third of domestic products and to monitor other prices.

Hungary has fewer pervasive problems than other centrally planned economies—such as inflation, shortages, low product quality, and black markets (although they exist, for example, for foreign exchange). But the overall success of the reforms in stimulating the economy has been mixed. Hungary has developed a small but vibrant and growing private sector. Between 1981 and 1987, gross value added in the private sector as a percentage of GNP doubled to 14.5 percent. In contrast, employment and average incomes in the socialized sector declined. However, more than 90 percent of industrial production was still produced in the socialized sector. Although direct controls are no longer pervasive, widespread indirect controls persist, for example, on the entry and exit of firms.

The Hungarian experience illustrates the difficulties in reforming a centrally planned economy gradually. With the basic institutional structure of a centrally planned economy still intact, authorities remain involved in a wide range of decisions, while managers take only limited responsibility for the operations of enter-

prises. Not surprisingly, the early reforms were only partially effective. Hungarian authorities continue to introduce measures to improve economic performance, including steps to privatize some state enterprises and to encourage further foreign investment.

The United States has offered both technical and financial assistance to support the next phase of Hungarian reforms. U.S. aid includes an enterprise fund that will facilitate private-sector development, including joint ventures.

Poland

Poland has made repeated attempts to decentralize economic decisionmaking. Although reforms implemented during the 1980s reduced the central allocation of inputs and liberalized the agricultural sector, severe problems remain. Reforming the Polish economy is especially complex because reforms must be implemented in the midst of an economic crisis. In addition to extremely high inflation, Poland has accumulated a large external debt and is unable to meet its debt-payment obligations.

The new Polish government has launched a comprehensive and radical program of structural reform and macroeconomic stabilization. In contrast to the recent Soviet approaches, the government plan calls for rapid removal of many price controls and subsidies and the reform of the budget process to eliminate the need for inflation-inducing money finance. It also lays out a sensible plan for gradual privatization of state enterprises and reform in banking and finance. Although the Polish plan is well formulated, the adjustment period may bring high levels of unemployment and temporary reductions in living standards, making the plan difficult to implement.

External assistance can play an important role in increasing the likelihood of success. The United States is actively exploring means to support Poland's ambitious effort. In addition to technical assistance, the United States has allocated an aid package that includes $125 million in food aid, $240 million for an enterprise fund, $200 million in trade credit guarantees, and a $200 million contribution to a currency stabilization fund to bolster the credibility of the Polish reform.

SUMMARY

- Many centrally planned economies in Eastern Europe have taken steps toward market-oriented economic reform. Poland and Hungary especially have launched ambitious restructuring programs that can promote economic growth and raise living standards.
- Because of important political and economic differences across centrally planned economies, no single blueprint for the appropriate reform package exists.

- While the transition to a market economy may involve unemployment and other costs in the short run, there are likely to be some early benefits as shortages of some goods are alleviated.
- The United States remains committed to support reform efforts among the centrally planned economies, including both financial and technical assistance.

SUPPORTING GROWTH IN INDEBTED DEVELOPING COUNTRIES

Like the economies of Eastern Europe, heavily indebted developing countries must undertake significant economic reforms in order to revive growth and gain full participation in the world economy. Many nations in Latin America and Africa have suffered severe economic stagnation in the 1980s resulting from declines in investment, high inflation, heavy debt burdens, capital flight, and extensive government interference in economic activity. The revival of growth will require continued implementation of appropriate macroeconomic and market-oriented policy reforms and reductions in debt burdens. *The United States continues to take a leadership role in developing and implementing a strategy of coordinated debt restructuring and support for economic policy reforms in the indebted countries, consistent with reviving growth and restoring their access to world capital markets.*

The recent growth rates of the severely indebted countries (as defined by the World Bank) are shown in Table 7–1. The deterioration of growth rates in per capita income in the 1980s is striking. Strong growth in the per capita incomes of these countries between 1965 and 1980 was followed by declines of 2.8 percent between 1980 and 1985, and negligible growth of 0.2 percent in the subsequent 3 years. Growth in the severely indebted low-income countries, including many in Sub-Saharan Africa, deteriorated especially sharply. In these countries, per capita income declined by 4.6 percent per year on average between 1980 and 1985, and continued to decline by an average of 1.6 percent per year between 1985 and 1988. Per capita income also declined between 1980 and 1985 in the middle-income severely indebted countries, including many in Latin America, and has since remained low. The declines in per capita income among the severely indebted countries between 1980 and 1985 and the failure to reach pre-crisis growth levels since stand in sharp contrast to the more stable growth rates of the high-income countries that belong to the Organization for Economic Cooperation and Development (OECD). The same trends also characterize the growth of total GNP in these groups of countries. Although GNP growth has risen since 1985, it is still far below pre-crisis levels.

TABLE 7-1.—*Average Annual Growth*

[Percent per year]

Item	1965 to 1980	1980 to 1985	1985 to 1988[1]
PER CAPITA REAL GNP			
Severely indebted countries			
Low income	2.5	−4.6	−1.6
Middle income	3.8	−2.2	.9
Total	3.5	−2.8	.2
High income OECD countries	2.7	1.7	2.7
REAL GNP			
Severely indebted countries			
Low income	5.2	−1.7	1.5
Middle income	6.2	−.1	2.9
Total	6.0	−.4	2.7
High income OECD countries	3.5	2.3	3.3

[1] Preliminary.

Source: The World Bank.

Estimated 1988 per capita incomes of $263 in the low-income severely indebted countries and $1,850 in the middle-income severely indebted countries are particularly striking when compared with U.S. per capita income of $19,780. The protracted decline in the incomes of many developing countries also dampened growth and contributed to trade balance deterioration in industrial nations in the mid-1980s by reducing the demand for their products.

It is important to note, however, that heavy debt burdens alone were not responsible for poor growth. Some countries that had very high debt levels in the 1980s, such as South Korea and Malaysia, have grown rapidly. Sound economic policies in these countries contributed to their strong economic performance.

Revitalizing growth is critical for the indebted developing countries as well as for the global economy more generally. The restoration of full access of these countries to world capital markets will be achieved only in conjunction with productivity improvements and output growth. Any long-term sustainable solution to the debt crisis must go beyond stabilizing the international trade and payments system to remove impediments to growth in the debtor economies.

HISTORY OF THE DEVELOPING COUNTRY DEBT CRISIS

The onset of the debt crisis in 1982 followed a decade of rapid expansion in foreign lending to developing countries. Many developing countries borrowed heavily in the mid-to-late 1970s when both the borrowing climate and prospects for repayment were particularly favorable. Their cost of borrowing was low because of low

real interest rates on world capital markets. Their access to credit was enhanced by the recycling of surpluses from the oil-exporting countries to developing countries through commercial banks. In addition, the prices of the major export commodities of many of the developing countries were at record levels.

Onset of the Crisis

The crisis in international credit markets was the product of a complex conjuncture of unexpected shocks to the world economy and decisions taken by both lenders and borrowers. The developments that had favored high levels of international lending in the 1970s reversed during 1981–82, and the debtors found themselves unable to meet the payments on their debts. Interest rates on the debtors' variable rate commercial loans rose sharply as the Federal Reserve System in the United States and central banks in other industrialized nations tightened money supplies to tame accelerating inflation. A steep increase in the value of the dollar sharply raised the effective cost of both the debtors' dollar imports and of payments on the mainly dollar-denominated debt. Although the rise in the dollar strengthened the competitiveness of many exports, this rise was offset by plummeting world prices of many of the debtors' primary export commodities. The overall effect was to reduce the net export earnings debtor countries had available to service their debt, just as the level of debt service was rising.

Debtor countries faced diverse problems. Highly indebted middle-income countries, which were concentrated in Latin America, had borrowed mainly from commercial banks, and faced sharply increased debt-servicing burdens. Highly indebted low-income countries concentrated in Sub-Saharan Africa had obtained the majority of their credit at below-market fixed rates of interest from official creditors. Although their debt-servicing burdens were not adversely affected, poor economic performance made debt servicing increasingly difficult.

In the countries that subsequently developed repayment problems, the external shocks to interest rates and commodity prices were exacerbated by economic mismanagement and political instability. Many heavily indebted countries failed to implement economic policies to correct persistent foreign and domestic imbalances. These countries used much of the borrowed money for consumption or investments with low returns, while countries that avoided repayment difficulties emphasized investments that raised productivity and diversified their export base. Between 1973 and 1982, export volume grew at 0.8 percent per year on average in the debtor countries with debt-servicing difficulties, in contrast to export growth of 4.8 percent in heavily indebted countries that did not experience servicing difficulties. Faced with rising budget deficits, the governments of many debtor countries resorted to printing

money, which fueled inflation, and simultaneously attempted to maintain overvalued exchange rates, which contributed to rising external deficits. Poor policy worsened the uncertain investment climate, causing investors in debtor countries to send their capital abroad and diminishing the resources available internally to service the debt.

Stabilizing the International Financial System

When it became clear that Mexico, one of the largest and most prosperous debtors, could not meet its payments at the height of the global recession in mid-1982, the stability of the international financial system was thrown into question. With a substantial portion of their portfolios in developing country debt, and concentrated exposure to the largest problem debtors, major U.S. banks would have been jeopardized by substantial losses on their developing country loans. Commercial banks in other industrial countries were in a similarly precarious position. U.S. commercial banks gradually strengthened their financial positions by increasing their capital base and setting aside reserves to cover losses. The banks sharply reduced new loans to debtor countries from $41.4 billion in 1981 to a low of $3.7 billion in 1986. In addition, since 1986, banks have reduced exposure by selling developing country loans on the secondary market and participating in debt exchanges such as debt-for-equity swaps. Table 7-2 shows that there was a substantial reduction in the exposure of U.S. commercial banks—especially the smaller banks—between 1982 and 1988.

The decline in new commercial loans and the increase in debt-service payments were exacerbated by high rates of capital flight in the Latin American economies, as domestic residents transferred their savings abroad in response to the uncertain and deteriorating economic conditions. One study estimates that the five largest Latin American debtors experienced outflows of $101 billion in private sector assets between 1979 and 1984.

TABLE 7-2.—*Changes in Reported Exposure of Groups of U.S. Banks to Non-OPEC Developing Countries*

Item	Millions of dollars		Percent
	June 1982 to December 1985	December 1985 to December 1988	June 1982 to December 1988
Top 9 banks	889	−11,547	−17.3
Next 13 banks	−1,730	−6,620	−40.7
All other banks	−1,739	−8,212	−50.0
Total	−2,580	−26,379	−28.4

Source: Federal Financial Institutions Examination Council, *Country Exposure Lending Survey.*

The net effect of these factors was a marked reversal in the direction of resource transfer, measured as the current account defi-

cit plus net investment income. Net resource transfers to the highly indebted countries declined dramatically from inflows of $12.8 billion in 1980 to outflows of $38.3 billion in 1984. While resource transfers abroad are necessary to prevent a country's debt from growing at unsustainable rates, they reduce the resources available for domestic investment or consumption.

The international response to the debt problem was to encourage macroeconomic stabilization policies and to coordinate additional lending by commercial banks and official creditors. Some new loans were made available through the International Monetary Fund (IMF) to provide financial support for debtor countries undertaking economic reform under IMF guidance, and to encourage lenders to continue to extend credit. Stabilization programs were put into place in several countries in consultation with the IMF, with mixed results. Such programs typically emphasized fiscal discipline, such as reductions in subsidies and improved tax collection, reductions in monetary growth, devaluation of overvalued exchange rates, and export promotion. Many countries found such measures politically difficult to implement because they required substantial sacrifices in the standard of living and in investment needed for growth. A recent study concludes that, while the stabilization programs led to reduced inflation and improved external balance in many countries, little progress was made in reviving growth.

U.S. POLICY FOR DEVELOPING COUNTRY DEBT

Although the coordinated international response to the debt problem between 1982 and 1985 stabilized international financial markets and maintained the liquidity of the problem debtor countries, economic recovery in debtor countries stalled. The governments of debtor countries were caught between internal pressures to direct resources to the resumption of growth, and international pressures for continued external adjustment. And the commercial banks were increasingly reluctant to make additional loans to heavily indebted developing countries.

The Baker Plan

Concern over the failure of indebted economies to resume growth prompted the 1985 U.S. debt initiative introduced by then Treasury Secretary James Baker—the Program for Sustained Growth, known as the Baker Plan. The program addressed the factors impeding the efforts of debtor countries to improve growth and living standards, and the need to mobilize international financial resources to support debtor country reform efforts. The program called for international commercial banks to extend $20 billion in new lending and for a 50-percent increase in lending by the multilateral development banks to the heavily indebted countries over 1986 to 1988. The program also called for the World Bank to play

an expanded role in supporting institutional and sectoral reforms and market-oriented economic policies.

The major debtors made progress in reforming their economies and managing their debt burdens between 1985 and 1988, and several countries improved their economic performance. Reforms during this period reflected widespread recognition by debtor governments of the importance of well-functioning markets in generating growth: public-sector deficits were reduced, exchange rates became more competitive, real interest rates rose, and trade protection was rationalized. In spite of this progress, overall improvements in economic growth and performance on the scale that had been hoped for did not materialize, partly because of disruptive changes in oil and commodity prices. In addition, the increase in new lending from all international financing sources fell below the levels that had been expected.

The Brady Initiative

The persistence of serious problems in the debtor economies and concern over the economic hardships sustained by their populations called for a review of the U.S. debt strategy. The strategy of this Administration, outlined by Treasury Secretary Nicholas Brady in March 1989, continues to emphasize the need for market-oriented economic reforms to promote growth. The Brady Initiative emphasizes measures aimed at mobilizing private-sector financing to generate growth. The major innovation of the Brady Initiative is that it emphasizes debt and debt-service reduction by commercial banks, in recognition of the burden placed on growth by increasing levels of indebtedness. It also provides for IMF and World Bank financial support for debt and debt-service reduction to those countries implementing effective economic reform programs.

The emphasis on debt reduction represents an evolution in thinking about the needs of the debtor economies, and a change in the relative emphasis on debt rescheduling, new lending, and debt reduction. Debt reduction is promoted in order to reduce high servicing requirements, in the expectation that the freed resources will be used for investment, and thereby promote growth. The shift in emphasis stems from concerns that growth in many economies has not revived despite appropriate policy reforms. In addition, rising levels of indebtedness impede growth by creating an uncertain and unattractive environment for private investment. An important feature of the emphasis on debt reduction is that it may allow the debtors to take advantage of the secondary market discounts on the value of their debt. The discounting of developing country debt on secondary markets reflects high perceived risks of default and arrears.

The Brady Initiative also provides for debt rescheduling and new lending. Debt rescheduling efforts reduce the drain on debtor coun-

tries' cash flow and the level of resource transfer in the near term by extending the period over which debt is repaid. New lending may generate cash to assist debtors in meeting debt-service obligations without sacrificing investment.

The Brady Initiative provides a framework for negotiated debt and debt-service reduction, on a case-by-case basis, to countries committed to implementing requisite economic reforms. The debtor government and commercial bank creditors negotiate a menu of options for the conversion and reduction of outstanding loans and the extension of new loans. The options are designed to enable banks to readjust their portfolios in terms of the timing, level, and riskiness of payments, consistent with debtors readjusting their payment burdens to sustainable levels. The participation of the commercial banks is voluntary.

Negotiations between a debtor country and its commercial bank creditors are premised on a prior commitment to an economic adjustment program designed in conjunction with the IMF and the World Bank. In line with its emphasis on growth, the Brady Initiative stresses economic reforms that improve the investment climate in the debtor economies in order to encourage foreign investment and the return of domestic capital that had fled abroad. Such reforms include the following: reductions in government budget deficits to reduce inflationary pressures, devaluation of official exchange rates to reflect market levels and restore the competitiveness of exports in foreign markets, removal of interest rate ceilings to stimulate domestic savings, reductions in foreign trade barriers, relaxation of regulations restricting foreign investment, and privatization of state-owned enterprises. These measures are intended to encourage investment, raise export earnings, and decrease the drain on resources from government budget deficits and inefficient state enterprises.

Because of its case-by-case emphasis, the Brady Initiative is best understood by comparing the three programs that have been negotiated under its auspices thus far. The agreements for Mexico, the Philippines, and Costa Rica differ significantly in ways that reflect the different needs of these countries and their creditors.

Mexico

Mexico negotiated a preliminary debt agreement with commercial banks in July 1989. Prior to the debt agreement, the Mexican government had undertaken substantial economic reforms, with some encouraging results. Mexico had made sustained efforts to devalue its exchange rate and reduce its budget deficit. It made substantial progress in liberalizing the trade regime and adopting measures to encourage investment. Mexico has also made progress in privatizing state-owned enterprises. At the outset of negotiations, Mexico had foreign debt of almost $100 billion, of which approximately one-half was medium- and long-term loans owed to commer-

cial banks. Annual interest payments amounted to 28 percent of export receipts in 1988. Mexico's difficulties in servicing its commercial debt were reflected in steep discounts on the secondary market of 65 percent in early 1989. The debt agreement that was reached reflects both the large size of Mexico's commercial debt and its need for cash-flow relief.

The agreement provides for debt and debt-service reduction as well as some new credit. It gives banks a choice of three options, all of which lower Mexico's current payment burden. Banks may (1) swap existing loans for new bonds with a 35-percent discount on the initial principal value at a customary spread above the London Interbank Offer Rate (LIBOR); or (2) exchange loans for bonds with the same principal value and a reduced, fixed rate of interest; or (3) provide new loans over 3 years equivalent to one-quarter of their existing loans at the customary spread above LIBOR. Funds from the IMF, the World Bank, Japan, and Mexico are used to provide collateral for the principal and part of the interest on the debt and debt-service reduced bonds.

Mexico may benefit substantially from a reduction in its debt-service obligations. Preliminary estimates of gross interest savings on payments to banks are above $1.5 billion per year. Gross cash-flow relief between 1989 and 1992 is estimated to include approximately $5.4 billion in interest savings, $6.7 billion in rescheduled amortization, and $1.4 billion in new money. It appears that Mexico has also benefited from favorable initial reactions to the agreement in financial markets. Between July and December, domestic interest rates in Mexico fell by about 15 percentage points, which, if sustained, would reduce government payments on domestic debt substantially and thereby reduce the government budget deficit. There have also been substantial capital inflows, amounting to around $3 billion over the course of the year, attributable in part to the debt agreement.

The Philippines

In August 1989, the Philippines became the second country to reach an accord with its commercial bank creditors under the Brady Initiative. Along with debt reduction, new lending is an integral part of the Philippine agreement, reflecting an urgent need for money to close a large balance of payments financing gap and a relatively small level of commercial bank debt. Less than 25 percent of the outstanding $29 billion in the Philippines' foreign debt is medium- and long-term credit from commercial banks.

The Philippine agreement gives banks a choice between extending new credit at a customary spread above LIBOR and selling existing loans to the Philippine government at a 50-percent discount, in line with secondary market discounts. The cash buyback will

total $1.3 billion in outstanding debt; the money for the cash buyback will be provided by the World Bank, the IMF, Japan, and the Philippine government. It is too early to predict the amount of new credit that commercial banks will extend. Although the agreement emphasizes new credit, the level of buybacks is expected to exceed that of new credit, so that the overall level of debt will decline along with annual interest payments. The success of the debt agreement will depend on effective implementation of the economic reform program adopted by the Philippine government.

Costa Rica

In October 1989, commercial banks and the Costa Rican government reached an agreement in principle. Commercial bank debt represents $1.8 billion of Costa Rica's total $4.3 billion in foreign debt. The Costa Rican situation differs markedly from that of both Mexico and the Philippines in that the $1.8 billion of commercial bank debt, although onerous from the point of view of domestic resources, represents a small percentage of the developing country debt of any particular commercial bank. The commercial bank debt includes $325 million in accumulated interest arrears. Costa Rica's poor debt-service record is reflected in a secondary market discount greater than 80 percent. Accordingly, the agreement places primary emphasis on debt reduction, and makes special provisions for the interest arrears.

The agreement reached with the banks is designed to achieve a 60-percent reduction in commercial bank debt, consistent with Costa Rica's servicing capability. It gives banks the option of selling their existing loans to the Costa Rican government at a discount of above 80 percent, or swapping existing loans for bonds with the same face value and a reduced, fixed interest rate. Banks tendering at least 60 percent of their outstanding loans for buyback will receive additional enhancements on the conversion of their remaining loans, in order to achieve the target of 60-percent reduction overall. The treatment of the arrears on the debt that is not sold back to the Costa Rican government is more stringent. Costa Rica must provide an up-front cash payment for 20 percent of these arrears, and the remainder will be converted to a 15-year bond at market rates.

Maintaining Flexibility

The three agreements differ substantially in ways that reflect the different needs of the various debtors and creditors. The Mexican agreement combines debt and debt-service reduction and new lending in the most varied of the three packages. This approach reflects the large size of the Mexican debt, the diversity of its creditors, and the Mexican government's need for both increased cash flow and debt reduction. The emphasis on new lending in the Philippine

agreement reflects the large size of the financing gap relative to the commercial bank debt, and the relatively smaller burden of commercial debt. The emphasis on debt-service reduction and debt relief in the Costa Rican agreement reflects the small and diffuse holdings of the country's debt among commercial banks, and its inability to service the outstanding debt.

The flexibility of the Brady Initiative will be important in addressing the varied needs of debtor countries, based on their demonstrated commitment to appropriate economic reforms. The common feature among future debt agreements is likely to be an emphasis on reducing debt and debt service and on promoting an economic environment that mobilizes domestic and foreign resources for productive investment in order to promote growth.

SUMMARY

- Economic reforms are critical to reviving growth and raising living standards in the highly indebted developing countries, just as in the centrally planned economies of Eastern Europe.
- Debt and debt-service reduction by commercial banks in countries that undertake market-oriented reforms can be important in easing the transition to sustainable growth and healthy economies. It is a key component of the new U.S. initiative for the revival of growth in heavily indebted developing countries.
- Access to well-functioning international financial markets in the 1990s will play a central role in the continued development of those countries that are currently undertaking needed reforms.

DEVELOPMENTS IN JAPAN AND OTHER ASIAN PACIFIC RIM ECONOMIES

As a group, the Asian Pacific Rim economies—Japan, Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Thailand—present a sharp contrast to the severely indebted countries in Sub-Saharan Africa and Latin America. Most of the Asian Pacific Rim economies have benefited enormously from the international trading system, achieving high rates of growth and increases in productivity and living standards. These economies, in general, have maintained an outward orientation in their economic policies and have succeeded in diversifying and strengthening their export bases. The economic policies employed by most of the governments in this region of the world have been very sensitive to the power of the marketplace. Owing to a strong, diversified export base and a reliance on market incentives, even countries with high levels of external indebtedness, such as Korea, have managed to maintain exceptional growth.

THE ASIAN PACIFIC RIM'S ECONOMIC EXPANSION

Rates of growth in the Asian Pacific Rim, which have at times reached into the double digits, are changing the global distribution of wealth, production, income, and trade. The Asian Pacific Rim's share of world gross domestic product rose from 6.7 percent in 1965 to 19 percent in 1987. Changes in trade flows have been even greater. Since 1965, the Asian Pacific Rim's share of total world exports of manufactures has risen from 8 to 22 percent. A radical transformation has also occurred in the Asian Pacific Rim's financial position. As recently as 1970, the Asian Pacific Rim was a net debtor to the rest of the world and held a modest 15 percent of the world's international financial reserves. By the late 1980s, it had become a major net supplier of capital, holding 24 percent of global international reserves.

The economic successes of the Asian Pacific Rim economies have been accompanied in each instance by high rates of investment and saving, rapid technological transfer, and expanding international trade. In 1987, Asian Pacific Rim economies invested almost 30 percent of their gross domestic product, while saving 34 percent. Still relying heavily on imported technology, even the Asian Pacific Rim's technological leader, Japan, paid $468 million more in licensing fees and royalties than it received. High rates of investment and heavy use of technology developed abroad have gone hand in hand with an increasing role for international trade. Exports rose from 12 percent of the Pacific Rim's gross domestic product in 1965 to 16 percent in 1987. Excluding Japan, the numbers are striking, with the share of exports rising from 23 percent in 1965 to 49 percent in 1987. The composition of exports has also changed dramatically. Since 1965, Japan has shifted from being the world's preeminent exporter of textile products to being a net importer of textiles and apparel, and now two-thirds of Japanese exports are machinery and transport equipment. For the Asian Pacific Rim as a whole, machinery and transport equipment rose from 20 percent of total exports in 1965 to 46 percent in 1987.

Although the performances of the Asian Pacific Rim's successful economies have much in common, the policies pursued have varied greatly. In some Asian Pacific Rim economies, such as South Korea, the government has had a major role in shaping the allocation of resources. In others, such as Hong Kong, the government interfered relatively little with market processes. In Singapore and Hong Kong, foreign investment has been welcomed and has played a central role in promoting economic growth. By contrast, Japan's extraordinary performance has been achieved with domestic capital and management. In Taiwan, economic policy helped small firms to play a predominant role, while in South Korea, govern-

ment policy on many occasions has discriminated in favor of large-scale firms.

Rapid changes in the Asian Pacific Rim's export structure have at times imposed a faster-than-desired degree of structural adjustment on its trading partners. The emergence of exports from the Asian Pacific Rim economies in sectors long established elsewhere has often forced a reallocation of capital and labor in other countries. Although painful, such reallocations can be beneficial because they result in each country specializing in the goods and services that it can produce relatively most efficiently, leading ultimately to gains for both producers and consumers. The rising share of global economic activity taking place in the Asian Pacific Rim has made structural transformation there an increasingly important issue for other parts of the global economy. This issue is seen most vividly in Japan's international economic relations—particularly those with the United States.

JAPAN AND THE WORLD ECONOMY

Sales of Japanese goods in the United States have greatly benefited American consumers and demonstrate the significant gains from international trade. But Japan's success in American markets, as well as the large and persistent Japanese trade surplus, and complaints by U.S. firms about difficulties in penetrating Japanese markets have prompted charges of unfair Japanese trade practices. Japan does maintain many important barriers on agricultural imports, but has removed all but a few quotas and imposes low tariff barriers to imports of manufactures. Nonetheless, scope remains for further development of Japanese policies, practices, and institutions to increase trade in manufactured products. Many such developments would help domestic markets to work more competitively. Japanese consumers would gain from lower prices, and producers would gain from better functioning markets. Even if the volume of trade increased, however, the effect on market shares of U.S. or any other country's products in Japan would be difficult to predict.

Several avenues to open Japanese markets further are being pursued in the United States. Some barriers, such as Japan's ban on rice imports, are the subject of multilateral trade negotiations in GATT. There also have been recent bilateral trade discussions under the "Super 301" process. Super 301 is part of the 1988 Omnibus Trade and Competitiveness Act, which directs the U.S. Trade Representative and the Administration to identify "priority practices, including major barriers and trade distorting practices, the elimination of which are likely to have the most significant potential to increase U.S. exports..." and to initiate investigations aimed at eliminating the practices or barriers identified. Under these cri-

teria, the Administration identified three Japanese practices in 1989: government procurement of super computers, government procurement of satellites, and standards and codes for wood products. (A total of three other practices were identified under Super 301—two in India and one in Brazil.)

In identifying these practices, the Administration has endeavored to support its principle of expanding a rules-based system for open markets and an open trading system. By naming only practices that are tangible and observable, Administration policy contrasts sharply with a "managed trade" approach, which would require the U.S. Government to second-guess market outcomes and to attempt to achieve different patterns of imports and exports by regulation. Rather than try to mandate trade flows and market shares, U.S. trade initiatives seek to ensure that domestic and foreign firms have equal opportunities to compete and that markets, not governments, determine the outcomes.

A broader set of issues involving domestic structure and institutions in both the United States and Japan are currently under discussion in a series of bilateral negotiations called the Structural Impediments Initiative. These talks, which focus on aspects of each economy that may create barriers to trade or impede domestic and international economic adjustment, provide a forum for two-way exchange of perspectives and concerns. While saving and investment have been major topics of discussion, a range of issues has been raised. In many cases, these issues have already been raised domestically in both Japan and the United States. U.S. interest in these talks has focused on structural problems in six general areas:

Saving and Investment. Reducing the current account imbalance requires reducing the gap between saving and investment. It seems unwise to pursue policies that would lower saving. More public investment by the Japanese government would reduce the gap and would probably improve the quality of life in Japan. Investment in parkland, waste disposal systems, and other social infrastructure in Japan is rather low relative to other industrial nations.

Land-Use Policy. Removing the bias toward agriculture in Japanese land-use policies would reduce land prices in Japan and thereby stimulate new construction investment in Japan by households and by domestic and foreign firms.

Pricing Mechanisms. A joint study of pricing by the Japanese and U.S. Governments found that prices of a variety of goods tended to be higher in Japan than prices of identical products in the United States, in many cases even where these products were manufactured in Japan. The removal of structural impediments should work to reduce these differentials.

Distribution Systems. Laws restricting competition in the distribution and transportation sectors lead to high prices for Japanese consumers and can limit access to the Japanese market.

Antitrust Policy. For example, a more vigorous enforcement of Japan's Antimonopoly Law would ensure freer entry into Japanese markets and could have an important impact on Japanese trade.

Keiretsu Relationships. (Used here to mean firms owning each other's stock.) Promoting shareholder rights and ensuring that management cannot insulate itself from market discipline may promote increased foreign direct investment in Japan.

The Japanese government has also raised points about the U.S. economy. High on the Japanese list is the low U.S. saving rate discussed in Chapter 4 of this *Report.* Other areas include investment incentives, export promotion, and work force training and education.

Trade Barriers and the Current Account

Current account surpluses and deficits are macroeconomic phenomena that primarily reflect the gap between domestic saving and domestic investment. Japanese domestic institutions and trade barriers, such as Japan's continuing protection of its agriculture sector, can impair productivity and reduce real incomes by misallocating resources. There are good reasons to support work toward structural reform. Producers are likely to gain from more open markets, while consumers may benefit from lower prices, as firms produce more efficiently. These gains will be enjoyed by Japan as well as by its trading partners. But trade and structural barriers will only affect the overall current account balances of Japan or Japan's trading partners to the extent they affect savings and investment behavior.

It is not plausible to attribute either the $82 billion increase in Japan's current account surplus between 1981 and 1987 or its decline by more than $20 billion in the past 2 years to changes in Japanese trade barriers. Although structural policies and institutions that affect trade can influence the saving-investment gap, there are other determinants, such as fiscal and monetary policies and demographic factors. In common with the experience in all other industrialized economies, these factors are likely to have played a much larger role than trade barriers in explaining Japan's recent current account developments. Efforts to reduce the U.S. current account deficit will also need to focus primarily on measures to raise public and private saving.

Japanese policies and institutional structure may have a greater effect on the volume and commodity composition of Japanese trade than on overall external balances. Japan stands out from most other industrial countries because it is rarely a major exporter and a major importer in the same industry. Some statistical studies

have concluded that this trade pattern might be expected of a country with Japan's resource endowments; however, others do not share this finding. In any case, where low imports of manufactured or agricultural products result from distortionary Japanese government practices, change is in order.

Changes in policies that raise Japanese imports may also raise Japanese exports. Unless these policy changes affect Japan's saving-investment gap, exports may increase to offset a large portion of increases in imports. Consider barriers that act like a tax on imports—for example on agricultural products. Such barriers will tend to raise domestic prices of rice and other agricultural goods, harming Japanese consumers. They will also tend to raise prices of labor, land, and other resources used to produce agricultural goods. These higher input prices will tend to make Japanese export production less competitive as well. Thus, the import barriers also act as a tax on exports. Removal of the import barriers is likely to increase both Japanese imports and Japanese exports. The net effect on overall trade balances is unclear.

While there are barriers to open markets in many countries, bilateral trade imbalances between pairs of countries are not in and of themselves evidence of such barriers. For example, even if the overall external accounts of both Japan and the United States were balanced, and market barriers had been eliminated worldwide, neither the United States nor Japan would have trade exactly balanced with each of its individual trading partners. Because countries have different endowments of land, skilled and unskilled labor, and capital, and different tastes and technologies, each has a comparative advantage in producing a different set of goods and services. A country such as Japan, which has relatively few natural resources domestically, should be expected to have trade deficits, on average, with countries that export raw materials, offset by trade surpluses, on average, with countries that import the manufactured goods Japan produces relatively efficiently. Bilateral imbalances cannot justify increased protectionism.

Thus, removal of trade barriers, while desirable in and of itself, would not necessarily change Japan's bilateral surplus with the United States. For example, removal of the Japanese beef quota, now in progress, will raise Japan's imports of beef. The higher imports could come from Australia, the United States, or other beef exporters. Thus, the effect on particular bilateral balances is uncertain. Furthermore, the beef quota removal is likely to have little effect on saving or investment in Japan, and thus is unlikely to affect Japan's overall trade surplus very much.

SUMMARY

- Those Asian Pacific Rim economies that exhibit rapid and sustained growth provide striking examples of the potential bene-

fits from market-oriented economic policies. These economies have benefited substantially from the expanding international trading system. They are becoming an increasingly important part of the global economy.

- The persistent U.S. current account deficit and Japanese current account surplus are primarily *macroeconomic* phenomena. Macroeconomic policy is the key to improving overall current account imbalances.
- There are gains to domestic and foreign producers and consumers from changes in government practices that allow markets to allocate resources more efficiently. Such changes will only affect overall current account imbalances, however, to the extent they affect the saving-investment gap. Furthermore, bilateral trade imbalances are determined by a host of factors, and are not in and of themselves evidence of trade or market barriers.
- There is growing recognition that, like tariffs or quotas, a country's *domestic* policies can have important implications for international trade. For example, antitrust regulations or distribution systems may impede a foreign firm's access to domestic markets.

ECONOMIC INTEGRATION IN WESTERN EUROPE

Sweeping economic changes are under way in Western Europe as the member states of the European Community (EC) move toward elimination of economic barriers among them by 1992. The 12 members have a population of 324 million and a GNP close in size to that of the United States. Since the late 1960s, they have progressively reduced internal restrictions on the movement of goods, people, and capital in order to reap the economic benefits of integration. In 1985, agreement was reached to implement a set of initiatives by 1992. The EC initiatives are the most ambitious set of reforms so far. The kinds of benefits anticipated from increased integration among EC members are similar to those motivating the U.S.-Canada Free-Trade Agreement (FTA), which went into force on January 1, 1989. The EC 92 initiatives promise to move the EC closer to the level of economic integration enjoyed by the 50 States within the U.S. market, particularly if there is further integration of monetary policy through the proposed formation of a European monetary union.

The European Community was established in 1957 by the Treaty of Rome. The original six members of what was often called the Common Market were Belgium, France, West Germany, Italy, Luxembourg, and the Netherlands. Denmark, Ireland, and the United Kingdom became members in 1973, followed by Greece in 1981 and

Portugal and Spain in 1986. Since the late 1960s, the EC has operated as a customs union with a common external tariff. Tariffs and quantitative restrictions on trade within the EC have been largely eliminated. Citizens of member countries are permitted to reside in and travel to other member countries freely for the purpose of work.

The new initiatives focus on the remaining barriers among EC countries. Some examples of these barriers are: (1) differences between countries in more than 100,000 industrial standards and technical regulations (for example, safety standards on machinery and health standards on agricultural products); (2) delays at frontiers for customs purposes and related administrative burdens for companies that sell or purchase goods and services in other member countries; (3) restrictions on participation in competition for one EC member's public procurement by suppliers from other EC member countries; and (4) restrictions on firms' ability to sell or purchase services or to become established in certain service activities in other EC countries. These restrictions have been particularly important in financial and transport services, where barriers to the entry of new firms also appear to be substantial. Taken together, these barriers impose a substantial economic cost. Large and persistent differences in consumer prices among EC members suggest that these barriers allow for a considerable degree of market segmentation and reinforce the noncompetitive structure of many member country markets.

The progress toward removing internal barriers has already been impressive. By June 1989, the EC Commission had adopted about one-half of the 279 directives in the plan to implement EC 92. However, much work remains to be done to achieve the degree of integration envisaged in the EC 92 initiatives, and obstacles to elimination of some existing barriers remain. For example, security threats, especially terrorism, make it difficult to remove border controls. These controls also help national fiscal authorities to collect taxes, the structure of which still differs widely across member countries. Proposals for fiscal harmonization are still under discussion. The process of economic integration in Europe should be seen as an ongoing and dynamic process that is likely to continue well beyond 1992.

POTENTIAL GAINS

The gains from economic integration in the EC may be substantial. The EC Commission estimates that integration of the internal market will raise the annual potential growth rate of the EC by around 1 percentage point through 1992. Longer run dynamic effects may sustain a strong growth rate for several additional years. The creation of a single European market will present substantial

opportunities and cost savings to firms operating across national boundaries. Implementation of the EC 92 initiatives will remove constraints that prevent firms from fully and efficiently using their resources. It will also establish a more competitive environment, challenging firms that have grown complacent in insulated national markets to innovate and operate more efficiently. Harmonization of technical standards and tax codes and reductions in the administrative costs of trade between countries will enable firms to produce on a much larger scale at substantial savings. Integration of financial services markets is expected to lower the cost of capital. Efficiency gains are also expected from more competitive bidding on the sizable member country government procurement expenditures.

U.S. firms and consumers also stand to benefit from the increased integration of the European economy. As long as barriers to trade and investment by firms from countries outside the EC are not raised, U.S. firms will also have new opportunities to invest in and supply goods to a large, prosperous, integrated market. American consumers will benefit to the extent that the EC 92 reforms stimulate increased competition and cheaper imports of EC products. In 1988, 19 percent of total U.S. imports came from the EC, and exports to the EC accounted for 23 percent of total U.S. exports. Growth in the European market induced by the EC 92 initiatives may increase the amount of the EC's external trade, which would raise U.S. exports to Europe.

POTENTIAL RISKS

The full gains will only be realized, however, if the EC remains open to the rest of the world. If barriers to external EC trade rise, U.S. and other non-EC firms and EC consumers may suffer. Even without new external barriers, American firms may find some opportunities constricted to the extent that the easier movement of goods within Europe gives insiders an advantage. EC consumers and firms may substitute products from firms of other member countries for imports from the United States or other nonmembers.

The EC should continue to have a strong vested interest in a liberal international trading system because it benefits from substantial foreign trade. While growth in trade within the EC has been 76 percent faster than growth in the EC's external trade between 1982 and 1988, external trade still accounts for more than 40 percent of the EC's total trade. Indeed, the EC's exports to nonmembers are 16 percent of world exports, as against a U.S. share of 12 percent and a Japanese share of 10 percent. Exports to nonmembers are equivalent to 10 percent of EC gross national product, compared with 7 percent for the United States and 10 percent for Japan. These external interests are too important to the EC to risk jeopardizing

them by inward-looking protectionist policies. In addition, low external trade barriers will continue to be the best insurance against EC firms losing their international competitiveness.

EC 92 is not an indication that the international economic system is breaking down into competing regional blocks. But it is important for the United States and other nations to monitor closely the developments in EC 92. Two areas have already been the focus of much attention.

Rules of Origin

One area of particular concern to U.S. firms is the definition and administration of rules governing the determination of the origin of products in the EC. The determination of origin influences the regulations under which products are sold, such as tariffs and duties, quotas, sanctions, and preferential treatment in trade and government procurement. There is concern that adoption of more stringent or less transparent rules of origin within the EC will result in discriminatory treatment of foreign products, especially intermediate goods. Avoidance of such rules may compel foreign companies to locate production facilities in EC markets and, for foreign companies subject to antidumping duties, to obtain inputs from EC producers rather than third-country producers. Rules of origin are an important and controversial issue for the international trading system more generally. Accordingly, the United States is engaged in multilateral discussions to develop disciplines within GATT as well as bilateral consultations with the EC to ensure greater transparency, clarity, and predictability in rules of origin.

Financial Services

An early EC proposal on financial services seemed to call for "mirror-image reciprocity," where foreign firms would receive the same treatment in the EC market that EC firms receive in the market of the foreign firm. The difficulty with this type of reciprocity is that nations have different legal and regulatory systems—often justifiably. The original proposal would have meant that firms from different countries would receive different treatment in the EC. The EC has since modified its proposal; the current proposal comes closer to the "national treatment" principle favored by the United States. Under this principle, foreign firms would be treated the same as EC firms in the EC market, as long as EC firms were treated like foreign firms in the foreign markets. This is another area where developments within the EC may have important lessons for broader multilateral agreements. The United States will continue to monitor EC developments in this area and will continue to negotiate for a multilateral agreement on financial and other services within GATT.

SUMMARY

- EC 92 represents important potential opportunities and benefits for U.S. firms and consumers as well as for EC firms and consumers. Whether U.S. firms and consumers benefit hinges on the continued openness of the European market to foreign trade and investment.
- Concerns that economic integration under EC 92 will lead to "Fortress Europe" appear to be exaggerated.
- EC 92 carries risks as well as opportunities. The United States and other countries must continue to monitor developments so as to minimize the major risk: that other countries' access to the new market will be restricted, which is likely to limit gains to EC members as well as nonmembers.

TRADE LIBERALIZATION AND GATT

A fundamental principle underlying the economic policies of this Administration is that governments should establish clear and credible rules for economic policies in which private-sector decision-making and entrepreneurial activity can flourish. This principle is as applicable to international trade policy as to fiscal and monetary policy. The goal of U.S. trade policy is to create ever-expanding trade opportunities free of barriers and based on a system of clear and enforceable rules.

Acting on this principle in the trade area, the Administration is committed to initiatives aimed at getting governments out of the business of managing trade, whether it be through export-restraining arrangements, subsidies to basic industries, managed marketing arrangements, agricultural import restrictions, or any of the myriad other ways governments distort international trade flows. Some of the more important U.S. initiatives have occurred in the multilateral trade negotiations of GATT (Box 7-2).

Several Administration initiatives have been pursued in bilateral or regional contexts—such as those reviewed earlier in this chapter in the section on the Asian Pacific Rim. But by focusing on rules such as nondiscrimination, by ensuring that reductions in barriers apply to all countries, and by eschewing the fixed quantity approach of managed trade, these efforts have also helped to increase trade opportunities for all countries and are consistent with U.S. support for multilateral trade liberalization. In fact, the principles guiding the architects of GATT—the principal international agreement regulating world trade—are the same as those underlying U.S. trade policy.

GATT comprises rules and mechanisms to encourage freer and fairer international trade. It was established in 1947, after a period in which deviations from the principles of free trade were taken to

extremes and severely damaged the world economy. Many industrial nations resorted to extremely protectionist trade policies in the 1930s. The disastrous consequence of these policies was a sharp contraction in world trade that lengthened and worsened the Great Depression.

Box 7-2.—What Is GATT?

At the conclusion of World War II, the United States and other countries sought to establish rules for the international trading system based on the principles of free, nondiscriminatory trade. The United States promoted the position that nontariff barriers should be abolished and that all tariffs should be reduced through international negotiations.

The General Agreement on Tariffs and Trade was drafted in 1947 as part of efforts to establish a broader International Trade Organization. GATT was signed by 23 countries participating in a conference in Geneva in 1947 and went into effect in 1948. Since then, membership has grown to 96 countries that account for 80 percent of world trade.

The GATT system serves several purposes:

- GATT provides a uniform set of rules and disciplines for the conduct of international trade. Each member country must give the most favorable trade treatment it gives any country to all other GATT members. Tariffs are to be used rather than other types of trade barriers.
- GATT provides an institutional framework to support international consultations and to facilitate settlement of trade policy disputes.
- GATT provides a system for trade policy liberalization through periodic multilateral negotiations to lower tariffs, and since the 1970s, also reduce nontariff barriers.

Since 1948, GATT has sponsored seven rounds of tariff reductions. These rounds successfully reduced tariffs and expanded international trade. The international trading system continues to evolve and GATT needs to address these changes. As tariffs have decreased, nontariff trade barriers have increased. Moreover, areas poorly covered by GATT, such as agriculture, or not covered at all, such as services, intellectual property rights, and investment, are of much greater importance than they once were. All told, $1 trillion or more of international trade in goods and services may not be adequately covered by the GATT rules.

THE URUGUAY ROUND

The President has made a successful conclusion to the Uruguay Round his highest trade priority. The Uruguay Round was launched in 1986 and is scheduled to end in 1990. The final year of negotiations will be critical to the outcome. The negotiations are intended to improve the existing GATT articles and procedures, to negotiate reductions in tariff and nontariff barriers, and to address 15 specific areas. In addition to agriculture, discussed below, some of these areas are:

Intellectual Property Protection. The trading system needs a comprehensive agreement on the protection of intellectual property rights, such as patents and copyrights. It should include standards and procedures for enforcement of these rights both internally and internationally.

Services. GATT rules need to be extended to areas such as telecommunications services where many countries currently impose trade restrictions.

Trade-Related Investment Measures. Trade-related restrictions on foreign investment are used increasingly by many countries. These measures distort trade and result in resource misallocation. GATT needs to develop rules and disciplines in this important area.

Textiles. The Multi-Fiber Arrangement is an exception to GATT rules that allows restrictions on textiles trade in many countries. Trade in textiles needs to be brought under normal GATT rules and disciplines.

Integration of Developing Economies. A major focus in these negotiations is to develop a system of rules that extends market-opening obligations to all participants. Bringing developing countries more fully into GATT will require tightening GATT rules governing the use of balance of payments difficulties to suspend GATT obligations and will also require greater participation by developing countries in GATT trade-liberalizing obligations.

Subsidies. The GATT negotiations offer the opportunity to establish internationally credible and enforceable regulations, or disciplines, for subsidies. This would include extending regulations for export subsidies and introducing prohibitions on domestic subsidies. It would include expanding export subsidy prohibitions to agricultural products.

AGRICULTURAL POLICY AND GATT

Among the 15 areas, agriculture is perhaps the best illustration of the limitations of the GATT system as well as of its potential to further the process of global economic integration. GATT operates on a consensus basis, and when GATT was established, agriculture was exempted from some of its rules to obtain political support for its ratification. At that time, agriculture was not an important

trading sector of most economies. Since then, agriculture has undergone a transformation from a national to a global industry. The United States, the largest food exporter in the world, exported about 25 million metric tons of agricultural products in the 1950s and now exports nearly 150 million metric tons.

Technology, trade, and government policy have all played prominent roles in this transformation. The postwar technological revolution began an unparalleled period of productivity growth in agriculture in the United States and elsewhere. U.S. agricultural productivity has grown more than 200 percent since the 1950s, and food exporting regions such as Canada, Australia, and Europe have experienced similar growth. The rice producing areas of Asia have seen rapid productivity growth since the mid-1960s. Agricultural markets became international as production expanded in the developed economies and global population, income, and food demand grew. The developing countries became major net importers of food, with a net deficit in their food production of 52 million metric tons in 1980, projected to grow to at least 69 million metric tons by the year 2000. Throughout the world, governments became increasingly involved in the production, marketing, and trade of agricultural products. Measurements of agricultural subsidies calculated by the Department of Agriculture show that subsidies in food-exporting countries increased substantially in the 1980s.

Agricultural Policies

Agricultural policies of the major food-exporting and food-importing countries now stand as a major impediment to more complete integration of agriculture into the international trading system. Because of the adverse impacts of agricultural policies on international markets, agricultural policy reform has become a priority for many countries participating in the Uruguay Round of GATT negotiations. Indeed, some countries are insisting on progress in agriculture before they will agree to reform in other areas.

All governments intervene in their agricultural sectors, either on behalf of producers or at their expense. Industrial economies tend to promote producers' interests through protection or subsidization. Developing economies, on the other hand, often use policies that have the effect of taxing agricultural producers for revenue to promote industrial development or maintain price ceilings to benefit urban consumers. In both cases, policy encourages a different pattern of resource use from what would occur in the absence of intervention. The result has been substantial distortions of agricultural resource use, production, and trade around the world.

The increasing degree to which policies have disrupted world agricultural trade has fueled the movement toward international policy reform. The inflexible trade and domestic policies of most countries limited the ability of, and the incentive for, their agricul-

tural sectors to adapt readily to abrupt changes in world market conditions caused by weather and political shocks. Recent droughts and historically low grain stocks have rekindled fears of a world food crisis. Attempts to insulate domestic producers from changes in global market conditions have depleted the budgets of many governments and strained international relations. The failure of existing policies to address the needs of the emerging global agriculture is clearly a major reason for the willingness of many governments to put agriculture on the agenda for international policy reform. It will be an important and historic achievement if the 96 GATT member countries are able to agree on improved and strengthened GATT rules for agriculture.

Recent studies suggest that meaningful policy reform would yield significant economic benefits. These studies conclude that multilateral reduction in trade-distorting policies would lead to higher world prices, higher market-generated farm income, less costly income support for farmers, and improved global economic welfare. Several studies have estimated the global economic gains from complete policy liberalization to be about $31 billion annually and $10 billion for the United States. The GATT reforms advocated by the United States, which would eliminate the most trade-distorting policies, could be expected to yield a large fraction of such benefits.

AGRICULTURAL POLICY REFORM IN GATT

The participants in the GATT negotiations reached a consensus in April 1989 to agree by the end of 1990 on a long-term agricultural reform program. The long-term objective of the reforms is to provide for substantial, progressive reductions in agricultural support and protection, sustained over an agreed period of time, to correct existing distortions in world agricultural markets and to prevent further restrictions and distortions. A key accomplishment of the Uruguay Round of GATT negotiations thus far is the recognition that domestic policies are a major cause of world market distortions. Meaningful reform must, therefore, address both domestic and trade policies.

Proposals for changes in the GATT rules and disciplines to achieve agricultural policy reform were submitted to GATT in late 1989 by major participants, including the United States, the European Community, Japan, and the Cairns Group—Argentina, Australia, Brazil, Canada, Chile, Columbia, Hungary, Indonesia, Malaysia, New Zealand, the Philippines, Thailand, and Uruguay.

Although there is now agreement about the need for policy reform, there is little agreement on how to achieve it. One of the basic difficulties in developing GATT rules and disciplines for agricultural policy is that every country in GATT has its own complicated policies. The GATT negotiators cannot write domestic policy

for any country. The challenge facing the GATT negotiators is to develop guidelines that can help countries move to less distorting policies without compromising any country's sovereignty.

The U.S. Proposal for Comprehensive Reform

The United States has proposed broad principles for bringing agriculture into the GATT system. The application of these principles in a strengthened and more effective set of GATT rules would move the world toward a fairer and more market-oriented trading system. The U.S. proposal provides for reform in the areas of import access and export competition, internal support, and sanitary regulations pertaining to agricultural products.

The U.S. proposal to improve import access would convert all nontariff barriers to tariffs and then reduce these tariffs to zero or low levels over a 10-year period. The GATT article that currently allows countries to use import quotas to manage their domestic agricultural policies would be eliminated. Nontariff barriers would be converted to tariffs by computing the difference between internal and external prices and imposing an equivalent tariff. The U.S. proposal thus conforms to original GATT principles for liberalizing trade through tariff reductions. The U.S. proposal calls for a 5-year phaseout of all export subsidies except for bona fide food aid. The proposal also calls for elimination of restrictions and prohibitions on exports of products in short supply. Safeguard measures are proposed to achieve an orderly transition process.

A major problem with most domestic agricultural policies is that they subsidize farmers in ways that artificially stimulate production and thus indirectly distort trade. The U.S. proposal limits the types of domestic subsidies that countries can use to those that have the least effect on trade. The most distorting policies, such as administered price policies and income-support policies linked to production, would be phased out over 10 years. Other less distorting policies, such as general input subsidies, would be subject to certain disciplines. Policies that would be permitted include payments not linked to production or marketing decisions, environmental and conservation programs, general support for research and its dissemination to farmers and disaster relief.

TOWARD U.S. POLICY REFORM

The President's farm policy goals are a market-oriented agriculture that preserves an income safety net for the farm sector and meets other objectives such as environmental quality. The Administration is also committed to global agricultural policy reform fully consistent with its GATT proposal. Agricultural policy reform in the United States would maintain and enhance the U.S. role as the major world food exporter while furthering global reform. But many other countries also subsidize production and export of agri-

cultural commodities or restrict imports. Policy reform in the United States must be accompanied by comparable reforms in other countries if all countries are to reap the gains possible from mutual reductions in agricultural subsidies.

Benefits From U.S. Policy Reform

The most important reason why the United States should simultaneously pursue agricultural policy reform both at home and abroad is the economic self-interest of the United States. The move to less trade-distorting policies could improve the performance of the U.S. farm sector and benefit consumers through increased availability and lower prices of some foods. The U.S. comparative advantage in the production of major traded commodities, notably food and feed grains, means that a large segment of U.S. agriculture can compete successfully in international markets when prices are determined by market forces rather than government subsidies.

Because the United States is one of the largest agricultural producers in the world, agricultural subsidies are particularly costly to U.S. taxpayers. Reforms consistent with the U.S. GATT proposal could help achieve the President's farm policy goal of a more market-oriented agriculture at lower budget and economic cost. Reductions in the budget cost of U.S. farm programs can make a contribution to the goal of a balanced Federal budget. After deducting Social Security, defense, and interest payments on the national debt from the Federal budget, direct price and income-support payments to agriculture were about 10 percent of the remaining budget in fiscal 1986, but fell to 4 percent in fiscal 1990 because of high prices caused by the U.S. drought. Without suitable policy reforms, a return to normal weather could lead to lower commodity prices and significantly higher budget costs in the 1990s.

Moving From Price Supports to an Income Safety Net

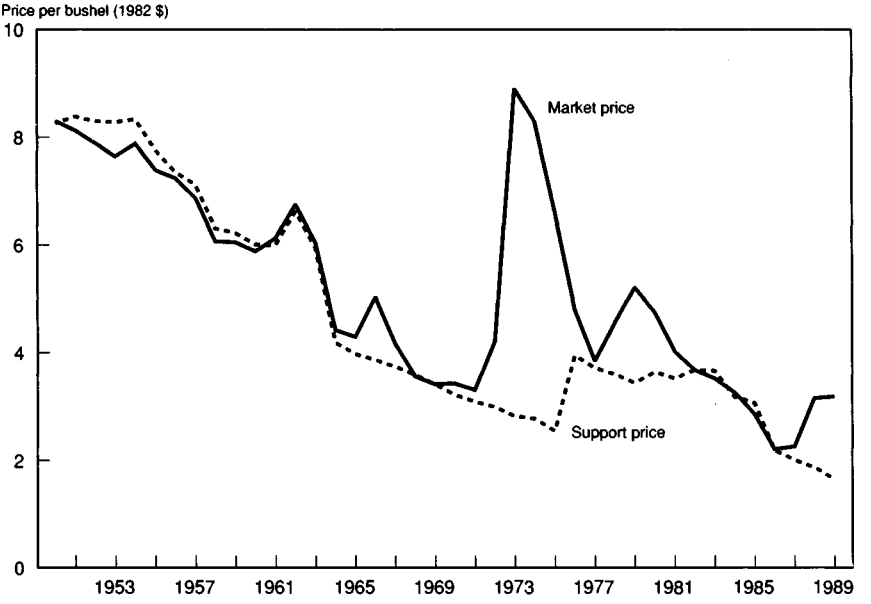
Continuing productivity growth in global agriculture will make U.S. and other countries' farm policies based on price support increasingly costly. This productivity growth is the cause of the persistent downward trend in real farm prices since the 1950s shown in Chart 7-1. The chart also shows that price supports have followed the same trend as real farm prices. This is because it is too costly for the government to keep prices above the long-run trend. The U.S. Government supports prices for certain major commodities (including grains and dairy products) by buying commodities and holding them as stocks, an expensive practice, and by managing supply through acreage reduction programs.

The acreage reduction programs are a policy response to the high costs of directly supporting prices by holding stocks. This pattern of stock buildup and supply management through acreage control is

evident in Chart 7-2, which shows wheat stocks and the forgone wheat output attributable to the idling of land through the wheat programs. A similar pattern of stock buildup and supply control occurred for feed grains. Two such policy cycles have taken place: one in the 1950s and 1960s and another in the late 1970s and 1980s.

Chart 7-1

REAL WHEAT PRICES. Real U.S. market and support prices follow a similar long-term trend.



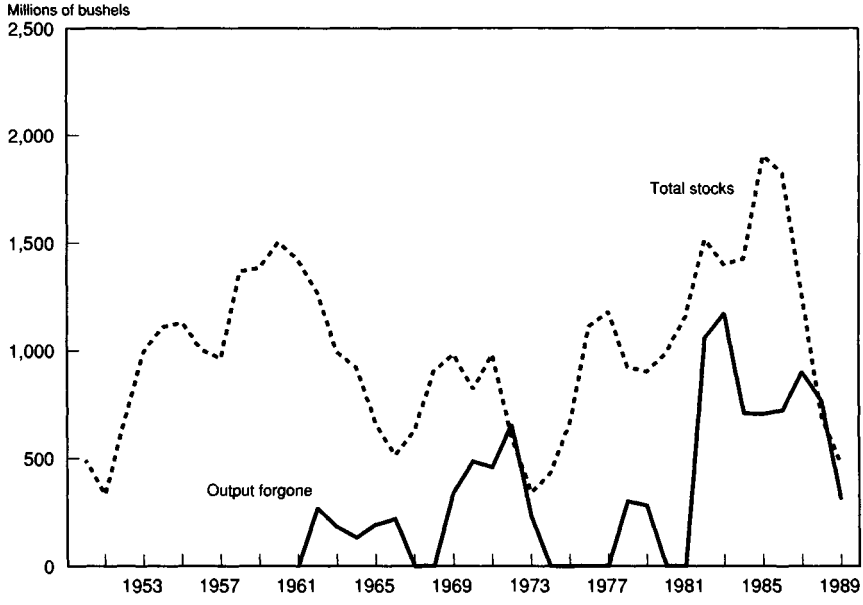
Source: Department of Agriculture.

Reliance on supply control reduces U.S. agriculture's exports by taking land out of production that could be producing crops for export. Moreover, because farmers are provided an incentive to make cropping decisions according to program rules rather than market signals, the programs reduce the responsiveness of U.S. agriculture to changes in world market conditions and reduce its international competitiveness.

Price and income supports redistribute income within the agricultural sector in unintended ways. Farmers who own assets when a price-support or supply-control policy is invoked earn capital gains because their land increases in value. Persons who subsequently want to become farmers must pay the capitalized value of the farm programs when they buy land. These newer farmers' economic survival then depends on the continuation of the support programs. Having paid the capitalized value of the programs in

Chart 7-2

WHEAT STOCKS. Large stocks lead the government to reduce acreage and thus output.



Note: Output forgone equals average yield times acres idled.
Source: Department of Agriculture.

order to farm, they need the high program prices and income subsidies to break even.

Understandably, farmers are concerned that they will have to bear much of the cost of adjusting to a new domestic policy regime. A reform program thus may need to include provisions that facilitate adjustments in the farm sector caused by policy change. To provide income support to farmers in a manner consistent with the principles espoused by the United States in the GATT negotiations, policy could be based on criteria related to income, not production. An income-based safety net for agriculture could facilitate adjustment, protect farmer income from unforeseen circumstances such as weather and political events, and do so at a much lower cost to the economy than the existing system.

SUMMARY

- The principle underlying U.S. Administration trade policy is to expand the current rules-based trading system to foster open and competitive markets. The Administration strongly opposes all attempts by governments to manage trade.

- GATT provides a set of rules for the international trading system and a process of multilateral negotiations through which further liberalization of trade can be achieved. The United States played a key role in the development of the GATT system in the late 1940s, and continues to play a leadership role.
- U.S. objectives for the Uruguay Round are to broaden and strengthen GATT rules and disciplines, and to reach agreement with other members on reductions in tariff and nontariff barriers. Some of the areas under negotiation in the Uruguay Round are agriculture, intellectual property rights, trade-related investment measures, services, and subsidies.
- Agricultural policy reform has become a priority for many countries in the Uruguay Round because domestic agricultural policies are becoming increasingly costly and are an impediment to trade policy liberalization.
- An income-based safety net could provide income protection for farmers in a manner consistent with the principles advocated by the United States in the Uruguay Round.

CONCLUSION

Recent developments in the global economy underscore the importance of free and competitive markets to promote and sustain growth. This Administration has taken a leadership role in promoting the development of open markets worldwide through important new initiatives to support economic reform in centrally planned and severely indebted countries. It has also played a leadership role in efforts to extend the GATT rules for the international trading system so as to eliminate barriers to open markets.

Market-oriented economic reforms can help to revive economic performance among the centrally planned economies, as well as among the highly indebted developing countries. While these countries must implement the necessary policy changes, assistance from the United States and other developed nations can be important. The United States continues to provide financial and technical assistance to support reform efforts in Poland and Hungary. It has also initiated a new debt strategy to support reforms in Mexico, the Philippines, Costa Rica, and other indebted countries through reduction of debt burdens.

The dramatic steps underway in the European Community to create a single, unified market by 1992 highlight the potential gains from removal of barriers. The elimination of artificial restrictions that prevent free movement of goods, services, labor, and capital across national boundaries promises to raise growth in the EC

member countries, the United States, and all nations that participate in the global economy. These gains will be realized as long as the EC provides non-EC members access to its newly expanded internal market. The dynamic Asian Pacific Rim economies also provide examples of how reliance on both domestic and international markets can generate economic expansion and raise living standards. These economies will also gain from further steps to remove barriers to open markets.

All countries must press forward to facilitate and safeguard a smoothly functioning global economy. Conflicts should be resolved through negotiation of rules. In this regard, GATT is a critical multilateral institution, providing a unified set of rules and disciplines for trade policies of member countries, and a framework for policy liberalization and dispute settlement. The current round of negotiations seeks to strengthen this rules-based system in existing areas such as agriculture, and extend it to important new areas such as services and intellectual property. The President has made successful completion of the Uruguay Round a major trade priority.

In today's highly integrated world economy, international economic policy issues are inseparably intertwined with domestic policy issues. International features arise naturally as one considers traditionally domestic issues such as fiscal policy, monetary policy, and environmental policy.

The usual concerns with international economic events and international economic policy were heightened immeasurably by the remarkable economic reform movement that began in Eastern Europe in 1989. This reform movement, as well as the economic reforms in some highly indebted countries, the ongoing integration of Western Europe, the success of the market-oriented Asian Pacific Rim economies, and the bold U.S. proposals to expand GATT point to the same theme: an open free-market economy is the surest road to economic prosperity. This is also the lesson from the success of the U.S. economy in the 1980s which the first six chapters of the *Report* have endeavored to explain. The challenge of the 1990s is to build on this success and to continue support for economic and political freedom around the world. The return from this effort will be a safer and more prosperous world in the 21st century.