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ECONOMIC REPORT
OF THE PRESIDENT
To the Congress of the United States:

The United States is enjoying a robust economic expansion because of the good policies we have put in place and the strong efforts of America’s workers and entrepreneurs. Four years ago, our economy was sliding into recession. The bursting of the high-tech bubble, revelations of corporate scandals, and terrorist attacks hurt our economy, leading to falling incomes and rising unemployment.

We acted by passing tax relief so American families could keep more of their own money. At the same time, we gave businesses incentives to invest and create jobs. Last year, we gained over 2 million new jobs, and the economy’s production of goods and services rose by 4.4 percent. The unemployment rate is now 5.2 percent, which is lower than the average of each of the past three decades and the lowest since the attacks of September 11, 2001. Our pro-growth policies are taking us in the right direction.

As I start my second term, we must take action to keep our economy growing. I will not be satisfied until every American who wants to work can find a job. I have laid out a comprehensive strategy to sustain growth, create jobs, and confront the challenges of a changing America.

I am committed to restraining spending by eliminating government programs that do not work and by making government provide important services more efficiently. I have pledged to cut the deficit in half by 2009, and we are on track to do so.

The greatest fiscal challenges we face arise from the aging of our society. Because Americans are having fewer children and living longer, seniors are becoming a larger proportion of the population. This change has important implications for the Social Security system, because the benefits paid to retirees come from taxes on today’s workers. In 1950, there were 16 workers paying into Social Security for every person receiving benefits. Now there are just over 3, and that number will fall to 2 by the time today’s young workers
We will not change Social Security for those now retired or nearing retirement. We need to permanently fix the Social Security system for our children and grandchildren. I will work with the Congress to fix Social Security for generations to come.

The current tax code is a drag on the economy. It discourages saving and investment, and it requires individuals and businesses to spend billions of dollars and millions of hours each year to comply with the complicated system. I will lead a bipartisan effort to reform our tax code to make it simpler, fairer, and more pro-growth.

We are working to make health care more affordable and accessible for American families. The Medicare modernization bill I signed gives seniors more choices and helps them get the benefits of modern medicine and prescription drug coverage. We have created health savings accounts, which give workers and families more control over their health care decisions. We will open or expand more community health centers for those in need. To help control health costs and make health care more accessible, we must let small businesses pool risks across states so they can get the same discounts for health insurance that big companies get. We will increase the use of health information technology that will make health care more efficient, cut down on mistakes, and control costs.

Our litigation system encourages junk lawsuits and harms our economy, and the system must be reformed. I support medical liability reform to control the cost of health care, keep good medical professionals from being driven out of practice, and ensure that patient care—not avoidance of lawsuits—is the central concern in all medical decisions. I support class action reform to eliminate the waste, inefficiency, and unfairness of the class-action system. And I support reforms to the asbestos litigation system in order to protect victims with asbestos-related injuries and prevent frivolous lawsuits that harm our economy and cost jobs.

I will continue to push for energy legislation to help keep our economy strong. We must modernize our electricity system to make it more reliable. To make our energy supply more secure, we must explore for more energy in environmentally friendly ways in our own country, develop alternative sources of energy, and encourage conservation.

I will work to further simplify and streamline federal regulations that hinder growth and encumber our job creators. Our economy needs to allow entrepreneurs to spend more time doing business and less time with their lawyers and accountants.

I believe that Americans benefit from open markets and free and fair trade, and I am working to open up markets around the world and make sure that
the playing field is level for our workers, farmers, manufacturers, and other job creators. In the past four years, we concluded free-trade agreements with Singapore, Chile, Australia, Morocco, Bahrain, Jordan, and six countries in Central America and the Caribbean. My Administration will continue to work to expand trade on a multilateral, regional, and bilateral basis, and to enforce our trade laws to help ensure a level playing field.

I have a plan to prepare our young people for the jobs of the 21st century. We have brought greater accountability to our public schools and are working to improve our high schools. We have made Pell grants available to one million more students, and we will work to make college more affordable by increasing the size of Pell grants for low-income students. We are reforming our workforce training programs to help Americans obtain the skills needed for the jobs that our economy is creating.

I have an ambitious agenda for the next four years. During my first term, working with the Congress, I put policies in place to ensure a rapid recovery and to support strong growth. In my second term, together we will cut the budget deficit in half, fix Social Security, reform the tax code, reduce the burden of junk lawsuits, ensure a reliable and affordable energy supply, continue to promote free and fair trade, help make health care affordable and accessible for American families, and expand the quality and availability of educational opportunities. These policies will produce an economic environment that continues to unleash the creativity and energy of the American people.
THE ANNUAL REPORT
OF THE
COUNCIL OF ECONOMIC ADVISERS
LETTER OF TRANSMITTAL

COUNCIL OF ECONOMIC ADVISERS,
Washington, D.C., February 11, 2005

MR. PRESIDENT:


Sincerely,

N. Gregory Mankiw
Chairman

Kristin J. Forbes
Member

Harvey S. Rosen
Member
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Overview

In 2004, the U.S. economic recovery blossomed into a full-fledged expansion, with strong output growth and steady improvement in the labor market. Real gross domestic product (GDP) grew by 4.4 percent in 2004 for the year as a whole. About 2.2 million new payroll jobs were created during 2004—the largest annual gain since 1999. The unemployment rate fell to 5.4 percent by year’s end, below the average of each of the past three decades. Inflation remained moderate, especially excluding volatile energy prices. The U.S. economy is on a solid footing for sustained growth in the years to come.

This is a marked reversal from the economic situation the Nation faced when President Bush came into office. Four years ago, the economy was sliding into recession after the bursting of the high-tech bubble of the 1990s. The economy was then affected by revelations of corporate scandals, slow growth among our major trading partners, and the terrorist attacks of September 11, 2001. Business investment slowed sharply in late 2000 and remained soft for more than two years. The economy lost over 900,000 jobs from December 2000 to September 2001, and then almost another 900,000 jobs in the three months after the 9/11 attacks.

Prompt and decisive policy actions helped to counteract the effects of these adverse shocks to the economy. Substantial tax relief together with expansionary monetary policy provided stimulus to aggregate demand that softened the recession and helped put the economy on the path to recovery. In addition to providing timely short-term stimulus, the President’s pro-growth tax policies have improved incentives for work and capital accumulation, thereby fostering an environment conducive to long-term economic growth.

This Report discusses macroeconomic developments of the past year, the Administration’s forecast for the years to come, and several topics related to salient economic issues.

The Year in Review and the Years Ahead

Chapter 1, The Year in Review and the Years Ahead, reviews economic developments in 2004 and discusses the Administration’s forecast for 2005 to 2010. Solid economic growth continued in 2004, and the Administration’s forecast calls for further expansion in 2005, with real GDP growing faster than its historical average and the unemployment rate continuing to decline. The economy is expected to continue on a path of strong, sustainable growth.
Real GDP expanded by 3.7 percent during the four quarters of 2004, and by 4.4 percent for the year as a whole compared with 2003. The solid advance in real GDP during 2004 was supported by gains in consumer spending, business fixed investment, and, to a lesser extent, housing investment, inventory accumulation, and government spending. Net exports (exports less imports) held down growth in all four quarters as the trade deficit rose in the third quarter to a record high as a percentage of GDP. Progress toward strengthened economic growth among U.S. trading partners led to an increase in exports, but imports continued to outpace exports as U.S. domestic demand and demand for imported oil remained strong. The economy’s strong growth performance came about in the face of higher oil prices, which likely reduced growth somewhat during the year. The Administration expects real GDP to grow 3.5 percent during the four quarters of 2005, in line with the consensus of professional forecasters. This growth is expected to be driven by continued gains in consumer spending, investment growth, and stronger net exports.

The labor market strengthened during the year. The unemployment rate, which declined 0.5 percentage point to 5.4 percent by the end of 2004, is projected to edge down further to 5.3 percent by the fourth quarter of 2005. Nonfarm payroll employment, which grew about 180,000 per month during 2004, is projected to grow about 175,000 per month in 2005, in line with other professional forecasts.

Inflation increased from the extremely low levels of 2003, partly because of rapid increases in energy prices. Inflation as measured by the consumer price index excluding food and energy remained in the moderate 2 percent range, and inflation expectations remain low.

The economy made these advances even as energy prices soared, the Federal Reserve raised interest rates, and the demand-side effects of fiscal policy stimulus began to recede in the second half of 2004. This continued growth indicates that the economy has shifted from a policy-supported recovery to a self-sustaining expansion.

Expansions Past and Present

Chapter 2, Expansions Past and Present, compares the current economic expansion to previous expansions. The current expansion and the previous one that started in 1991 followed especially shallow recessions, and both exhibited relatively moderate overall growth in key economic variables. Shallow recessions typically are followed by shallow recoveries and deep recessions by robust recoveries. The recent recession stands out in that there were no consecutive quarters of decline, with revised data showing that real GDP dropped in the third quarter of 2000 and the first and third quarters of 2001, but grew in the intervening quarters.
Consumption and residential investment continued to grow throughout the recession, while business investment fell sharply in the recession and continued to decline for five quarters after the overall economy had bottomed out. Both of these developments likely reflect the important role of fiscal and monetary stimulus in supporting household demand and the unusual extent to which the recession resulted from a collapse in investment following the bubble of the late 1990s. The relationship between firms’ abilities to invest and the state of economic activity has been deemed the “financial accelerator,” in that changes in activity affect firms’ ability to invest and this in turn further affects activity, in a way that tends to accentuate economic fluctuations. Fiscal and monetary policy actions have counterbalanced these forces. Without the boost to disposable income from tax relief, the recession would have been deeper and longer.

The relatively weak payroll employment growth in the initial stages of the current expansion likely reflects both the shallowness of the recession and the unusually strong growth of productivity in the recession and expansion. In an average expansion before the 1990s, employment recovered along with output at the start of the expansion and regained its previous peak about three quarters after the trough. In the expansion of the 1990s, however, employment continued to fall for two quarters after the expansion had commenced and did not reach its previous peak value until another six quarters had passed. In the most recent expansion, employment continued to fall for seven quarters after the recession had ended and regained its prerecession level only at the beginning of 2005, some 12 quarters after the end of the recession.

The moderate employment growth reflects especially strong productivity growth during the current expansion. Productivity growth has averaged 4.2 percent per year at an annual rate in the most recent expansion, up substantially from the 2.5 percent growth rate seen on average from 1995 to 2000. In the short run, greater productivity growth sets the bar higher for employment growth. With increased productivity, a given amount of output can be produced with fewer hours worked, so real GDP must grow more quickly for employment to grow. In the long run, however, higher productivity growth leads to higher income per person, and will thus be expected to be positive for employment growth.

That the recent recessions and expansions have been especially moderate suggests the possibility that the economy has become more stable in general. If so, then part of this stability is likely attributable to more active and time-lower stabilization policy. Other factors possibly contributing to a more stable economy include improved inventory management that lessens the volatility of production changes, and the ongoing shift in the U.S. economy toward the service sector, the output of which has typically been more stable than the production of goods.
Options for Tax Reform

Chapter 3, Options for Tax Reform, discusses why tax reform is vital to a stronger economy, and examines several basic prototypes for reform. The President has not endorsed any specific proposal, and the chapter does not advocate the adoption of any particular prototype for reform.

The current Federal tax system is unnecessarily complex and distorts incentives for work, saving, and investment. In addition to the dollar amounts of taxes paid, the tax system imposes two indirect burdens on taxpayers and on the U.S economy as a whole: the costs (in time and money) of complying with tax rules and the costs (including slower economic growth) of tax-induced distortions of economic activity. The Internal Revenue Service estimated that for tax year 2000, individual taxpayers spent 3.2 billion hours on tax compliance, an average of 25.5 hours per return, and spent $19 billion on tax preparers, computer software, and similar expenses.

High tax rates reduce incentives for work, saving, and investment, distort economic decisions, and divert resources from productive activity into tax avoidance, ultimately reducing economic growth and lowering living standards. High tax rates lead people to work less, to take their compensation in nontaxable forms such as health insurance, and to alter their portfolios to focus on tax-favored investments. The current tax system also distorts many business decisions, resulting in inefficient use of resources and reduced economic output. Double taxation of corporate income raises the cost of capital and would therefore be expected to have an adverse effect on investment. Double taxation further leads firms to finance investment with debt instead of equity, creates a bias in favor of using business forms such as partnerships and subchapter S corporations that are not subject to the double tax, and discourages paying dividends. The Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA) reduced this double tax by reducing the individual income tax rates for both dividends and capital gains, and appears to have led to a sizable increase in dividend payments by firms.

Tax reform proposals generally follow either the principle of taxing consumption or the principle of reforming the existing system to conform more closely to a pure income tax.

Most proposals for tax reform involve variations on a few basic types of taxes. The main types of consumption taxes are the retail sales tax, the value added tax, the flat tax, and the consumed income tax. The retail sales tax imposes tax liability when an individual purchases goods or services for consumption, whereas the value added tax levies tax on the same base but the tax is collected instead on the value added to the good or service at each stage of its production. The flat tax consists of a business tax and an individual-level tax, both with a single flat tax rate, in which wages are taxed at the individual
level rather than being included in the business tax base. This allows for building progressivity into the system by providing an exemption of, say, $40,000 for a family of four. While these taxes appear to be quite different, they are equivalent from an economic standpoint because consumption is the overall tax base in each case.

Important benefits could also be obtained through simplification and reform of the current tax system. A reformed version of the current system would reduce transition and adjustment costs, and considerable benefits could be obtained by simplifying and rationalizing tax provisions that overlap or are otherwise overly complex.

The Administration’s tax program has already significantly reformed the tax system. Achievements include lowering marginal tax rates, reducing the double tax on corporate income, simplification, and improved fairness for families. The tax relief passed during the President’s first term also increased the overall progressivity of the Federal tax system. The bottom 40 percent of the population in terms of income received the largest percentage reductions in total Federal taxes, and the share of taxes paid by the top 20 percent in terms of income increased as a result of the tax cuts enacted since 2001.

Possible additional reforms would be to lower tax rates further and broaden the base; rationalize the current multitude of saving incentives; further reduce or eliminate the remaining double taxation of corporate income; and simplify the complex system of depreciation rules. Reform within the current system would also address the Alternative Minimum Tax (AMT), which adds considerable complexity, and which, under current law, is expected to affect a rapidly growing number of taxpayers over the next five years.

Although tax reform has been discussed for many years, it is a particularly pressing need at the current time. Increasing numbers of taxpayers will be affected by the Alternative Minimum Tax, which will be a major source of frustration and complexity. In addition, the tax reductions enacted since 2001 will expire in a few years unless they are extended or a new, reformed tax system is adopted. If these provisions are allowed to expire, the result will be substantial increases in taxes on taxpayers in all income groups, with the largest percentage increases being imposed on lower- and middle-income households.

**Immigration**

Chapter 4, *Immigration*, examines the economic impact and implications of immigration. In recent decades, the United States has experienced a surge in immigration not seen in over a century. Immigration has touched every facet of the U.S. economy and, as the President has said, America is a stronger
and better Nation for it. A comprehensive accounting of the benefits and costs of immigration shows that the benefits of immigration exceed the costs.

Immigrants have settled in all parts of our Nation and have generally succeeded in finding jobs quickly, helped in large measure by the flexibility of the U.S. labor market. One indicator of this success is that foreign-born workers in the United States have a higher labor force participation rate and a lower unemployment rate than foreign workers in most major immigrant-receiving countries.

While flexible institutions may speed the economic integration of the foreign-born, the distribution of the gains from immigration can be uneven. Less-skilled U.S. workers who compete most closely with low-skilled immigrants have experienced downward pressure on their earnings as a result of immigration, although most research suggests these effects are modest. Also, communities contending with a large influx of low-skilled immigrants may experience an increased tax burden as immigrant families utilize publicly provided goods such as education and health care.

U.S. immigration policy faces a complicated set of challenges, perhaps more so now than ever before. Policy should preserve America’s traditional hospitality to lawful immigrants and promote their economic contributions. Yet these goals must be balanced with the Nation’s many needs, including the imperative for orderly and secure borders. These challenges have only grown in a post-9/11 world. The persistence of undocumented immigration and problems with employment-based immigration suggest that current policy falls short in addressing the demand for immigrant workers and the need for national security. The President’s proposed Temporary Worker Program recognizes these problems and would implement necessary reforms.

### Expanding Individual Choice and Control

Chapter 5, *Expanding Individual Choice and Control*, examines the role played by property rights in providing the link between people’s effort and their reward. Having property rights allows people to know that they will reap the rewards of their efforts and entrepreneurship.

When used in economics, the term *resource* refers not just to natural resources, such as land or clean air, but to anything of value, such as skills. A *property right* refers broadly to the arrangements society uses to assign people control over resources. Property rights have a variety of names, including deeds, titles, permits, vouchers, allowances, or accounts. Patents and copyrights are also property rights, establishing control over inventions, books, songs, and other creative concepts. The essential idea is the same in each case: the owner of the property right controls how something valuable is used.
That control is defined using a bundle of specific rights. The bundle is commonly thought to consist of three main elements: the right to exclusive use of the resource, the right to income derived from the resource, and the ability to transfer those rights. Property rights can include a range of those elements, from weak rights (which might only include the right to use the resource) to strong rights in all three elements.

Property rights have a profound effect on the choices people make. In addition to giving them the incentive to maintain and invest in things, people will use resources more prudently if they own them. Property rights are essential for markets to function. The lack of a clear title might prevent a car purchase. A home buyer is unlikely to sign on the dotted line if she is not sure that the seller actually owns the house. Without property rights, would-be entrepreneurs cannot secure loans they might need to help their businesses grow.

Property rights are essential to the efficient operation of markets, which in turn allocate resources to their most highly valued use. Clearly defined rights are important in avoiding overuse of resources and in encouraging the improvement of resources. Property rights further provide incentives to invest in, maintain, and improve resources over time. The benefits of homeownership come about because individuals have control and responsibility over their property and their lives.

The thoughtful application of property rights has already brought about a number of policy improvements. Introducing a property-rights regime for air quality reduced emissions almost 30 percent more than the required level and achieved annual cost savings estimated at hundreds of millions of dollars per year. The use of property rights for fisheries has mitigated overfishing while increasing commercial fishermen’s profits and promoting a more stable industry. The application of property rights to education has facilitated greater school choice and improved student performance. These uses of property rights have given control to people with the best information and incentives to use the resources in question.

Providing people with ownership, individual choice, and control of assets could help address several current concerns. Giving families more control over their retirement by establishing personal retirement accounts they actually own would improve the Social Security system. Offering people greater control over the money used for their health care would reduce health care spending and increase the number of people with health care insurance. Providing countries greater ownership (that is, more control) over how they use the development assistance they receive will make them active partners in the programs funded.
Innovation and the Information Economy

Chapter 6, *Innovation and the Information Economy*, provides an overview of recent developments in information technology and discusses some of the economic issues relevant to this especially dynamic sector of the economy. Innovation and information technology are increasingly key contributors to economic growth and productivity. Our Nation’s growing prosperity depends on fostering an environment in which innovation will flourish.

Information technology has made many workplace tasks easier, boosting people’s productivity. One recent study finds that labor productivity in the nonfarm business sector grew at an annual rate of 2.4 percent from 1996 through 2001, and attributes nearly three-quarters of this growth to the accumulation of information technology capital together with improvements in how people use this capital. Of the 2.9 percent growth in real gross domestic product (GDP) in 2003, some 0.8 percentage point was attributable to information technology.

A key development of the growing information economy is that more people are using computers and communicating over the Internet. Usage of the Internet includes email and the rapid growth of e-commerce, which includes transactions with consumers and transactions between businesses. Consumers have benefited from e-commerce through the greater variety of goods available online and through the additional competition and lower prices resulting from the spread of e-commerce. A downside is the rise of online theft, vandalism, and fraud. The Administration has taken actions to protect property rights and ensure that the Internet and other new technologies are safe venues for commerce.

The process by which innovations such as the Internet come about involves the invention, commercialization, and diffusion of new ideas. At each of these stages, people are spurred to action by the prospect of reaping rewards from their investment. Government thus has an important role to play in defining and protecting property rights in intellectual and physical capital so that entrepreneurs will be spurred to innovate.

In a free market, innovators vie to lower the cost of goods and services, to improve their quality and usefulness, and—most importantly—to develop new goods and services that promise benefits to customers. An innovation will succeed if it passes the market test by profitably delivering greater value to customers. Successful innovations blossom, attracting capital and diffusing rapidly through the market, while unsuccessful innovations can wither just as quickly. In this way, markets allow capital to flow to its highest-valued uses. Competition drives the broad diffusion of innovative low-cost, high-quality information services. This has held true in markets for mobile wireless telephones, satellite television, and dial-up and broadband Internet services.
This engine of growth can falter, however, if government policies distort the market signals that guide innovative activity. Well-meaning policies to promote the diffusion of a service or foster entry into new markets can have unintended consequences. A policy to subsidize an existing service so that more people will consume it can deter development of innovative new services that people might otherwise prefer. In addition, potential pioneering investors forced to share the fruits of their investment with new entrants would find it less profitable to invest in the first place, and a new market may never be developed. As circumstances change and industries evolve, existing government regulations may need rethinking. In particular, economic regulations aimed at correcting an absence of competition may lose their rationale when competition from new technologies emerges.

The Global HIV/AIDS Epidemic

Chapter 7, *The Global HIV/AIDS Epidemic*, examines the economic issues posed by the acquired immunodeficiency syndrome (AIDS) epidemic. The disease has already killed over 25 million people, and currently over 40 million people are living with the human immunodeficiency virus (HIV), the virus that causes AIDS. The chapter discusses the nature of the crisis, its consequences, and what governments can do to create affordable access to existing treatments while encouraging research toward the development of new medical therapies to combat this disease.

The impact of HIV/AIDS varies across the world, both in terms of the scale of the epidemic and the ability to treat infected individuals. Less-developed countries are particularly hard hit on both accounts. Almost two thirds of all people with HIV live in sub-Saharan Africa, a region that makes up only one tenth of the world’s population. At the same time, few infected individuals in the region receive adequate treatment for the disease.

While the disease’s impacts on human health and mortality are widely recognized, the HIV/AIDS epidemic also has devastating economic consequences that exacerbate the humanitarian crisis. AIDS deepens poverty, intensifies food shortages, and, in some cases, erases decades of economic progress. HIV/AIDS-related illnesses directly decrease the income of an affected household. Even if an infected family member is able to work, a sick worker is likely to be less productive than a healthy one. The disease predominantly affects the working-age population, and thus can leave too few people to support the aging and young populations. AIDS can also impose debilitating costs on other members of a household, for example as other family members may need to miss work or school to care for a patient. The disease can further change the way that affected families make long-term decisions,
because they do not expect family members to live as long and because their needs become more immediate due to pressing health concerns. As a result, children may be pulled out of school in order to supplement the declining family income, resulting in a loss in the children’s future earning potential. Impacts such as this can combine to create a vicious cycle of increased poverty in the short run and an inability of households to improve their condition in the long run.

The President has made fighting the worldwide HIV/AIDS epidemic a priority of U.S. foreign policy. He has taken bold action against the crisis through his Emergency Plan for AIDS Relief. Understanding the unique challenges presented by this epidemic is essential to designing policies to prevent the spread of the disease and to treat those who are already infected. A comprehensive and integrated approach of prevention, treatment, and care is essential to quelling the epidemic. In poor countries, treatment affordability and the lack of health care infrastructure are major concerns. Compassionate pricing policies and aid from developed nations can play an important role in expanding access to treatment.

To continue the development of better treatments and to work toward eradication of HIV/AIDS, drug companies need to maintain the highest possible quality of research. Intellectual property laws are important to ensuring appropriate incentives for innovation to create the next generation of therapies and to develop a safe and effective vaccine.

**Modern International Trade**

Chapter 8, *Modern International Trade*, examines the benefits of free trade and discusses the progress the Administration has made in opening global markets. Open markets and free trade raise living standards both at home and abroad. Any move toward economic isolationism would threaten the competitive gains made by U.S. exporters while harming U.S. consumers and firms that benefit from imports.

The President’s policy of opening markets around the world is based on a long history of intellectual support for free trade, starting with the nineteenth century theory of comparative advantage advanced by David Ricardo. Ricardo illustrated the ways in which free trade allows countries to mutually benefit from specializing in producing products at which they are adept and then exchanging those products. This rationale remains the same, even with advances in technology and new types of trade. The principle of comparative advantage applies to the burgeoning trade in services, in which the performance of U.S. service workers and firms has been particularly strong. The United States exports more services than it imports, and this surplus has been
growing in recent years. Moreover, U.S. services exports tend to involve relatively highly skilled and highly paid occupations, such as engineering, financial services, or architectural services.

Richer economic models that take into account the features of the modern world show that countries as a whole still gain from free trade. There are, however, differing impacts of trade on different parts of the economy and the labor force. Policies aimed at supporting individuals affected by trade are thus vital to ensuring that its gains are widely shared. To this end, the Administration has proposed a reform of the overall workforce training system to help Americans obtain marketable skills needed to compete for jobs in emerging and innovative fields. The Administration recognizes that effective workforce training requires the cooperation of the private sector and community colleges and has worked to nurture these partnerships through the High Growth Job Training Initiative at the Department of Labor and through the recently enacted Community-based Job Training Grants. In addition, the Administration has proposed the establishment of Personal Reemployment Accounts, an innovative approach to worker retraining, and has worked to enhance the long-standing Trade Adjustment Assistance program, which provides training and income support to workers directly hurt by import competition. As part of the Trade Act of 2002, eligibility was extended to workers indirectly affected by trade, such as workers employed by firms that supply goods and services to industries directly affected by trade competition. Benefits were enhanced to include a health insurance tax credit and a wage supplement for older workers who found new jobs that did not pay as well as their previous jobs. This assistance, which will total $12 billion over 10 years, will ease the adjustment for displaced workers and help them move into jobs for which their skills are most in demand.

Foreign direct investment is playing an increasingly important role in world trade, as companies invest across borders to gain skills, technology, resources, and market access. A good deal of evidence suggests that increased employment at the foreign subsidiaries of U.S. firms is associated with a corresponding increase in employment in the U.S. parent company. Similarly, recent research shows that one dollar of spending on capital investments abroad by U.S. firms is associated with an additional three and a half dollars of spending on capital investment at home. The available evidence thus suggests that, on the whole, overseas expansion by U.S. firms goes hand-in-hand with expansion at home. Subsidiaries of foreign firms operating in the United States make important positive contributions to the U.S. economy as well. Foreign direct investment into the United States is associated with the adoption of new technology, techniques, and skills by locally-owned companies. U.S. subsidiaries of foreign companies employed 5.4 million U.S. workers in 2002, nearly 5 percent of total private-sector employment. This is up from 3.9 million workers in 1992 (4.3 percent of total private employment at that time).
The Administration has pushed aggressively to open global markets to trade through multilateral talks under the auspices of the World Trade Organization (WTO), and through agreements to liberalize trade between the United States and various partners. The Administration has worked to ensure that the benefits promised under the agreements are realized for U.S. consumers, workers, manufacturers, farmers, and service providers. At the same time, lower trade barriers benefit people in U.S. trading partner countries. When U.S. trading partners do not fulfill their obligations, the Administration has sought their compliance through a practical, problem-solving approach. When that fails, however, the Administration has utilized formal dispute-settlement mechanisms.

The integration of the Chinese economy into the global trading system has been an important development in recent years. The Administration has worked to ensure that China lives up to the agreements it has signed, including lowering its barriers to trade, addressing concerns about intellectual property protection, and adopting and enforcing the rules of the multilateral trading regime. Trade between the United States and China has been growing rapidly. For goods trade through November 2004, China ranked as the third-largest trading partner of the United States. For most of the period since China’s WTO accession, U.S. exports to China have been growing at a rate faster than its imports from China, but this export growth is occurring from a much smaller base.

The Administration’s vigorous pursuit of trade liberalization has paid off in progress on the Doha Development Agenda. The United States played a leading role in the intensive negotiations that led to an agreement establishing a framework for the ongoing talks at the WTO. These talks, which were launched in 2001 in Doha, Qatar, have focused on measures that will especially benefit developing nations, including the elimination of agricultural export subsidies. Trade agreements were also concluded in 2004 with Australia, Morocco, Bahrain, and with the participants in the Central American Free Trade Agreement (CAFTA), including Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and the Dominican Republic. At the same time, the United States continued negotiations with the five nations of the Southern African Customs Union (Botswana, Lesotho, Namibia, South Africa, and Swaziland) while launching new negotiations with Thailand, Panama, and the Andean nations Colombia, Ecuador, and Peru. The President has also announced to Congress his intention to begin free trade agreement negotiations with the United Arab Emirates and Oman. When combined with agreements already negotiated by the Administration, partner countries accounting for almost $50 billion in 2003 trade have committed to eventually eliminate tariffs on almost all U.S. exports. Tariffs that averaged as high as 19.6 percent for U.S. exports will be reduced to zero as a result of these agreements.
Conclusion

The last year has seen the U.S. economy strengthen from recovery into a solid and sustainable expansion. With the near-term outlook bright, this provides an opportunity to put renewed focus on longer-term economic challenges. The President’s agenda is focused on these challenges—on taking the actions needed to bring about a better economic future shared by all Americans. The President’s policies are designed to foster rising living standards at home, while encouraging other nations to follow our lead.
The Year in Review and the Years Ahead

The recovery of the U.S. economy blossomed into a full-fledged expansion in 2004, with solid output growth and steady improvement in the labor market. Payroll employment increased by about 2.2 million jobs, the largest annual gain since 1999, and the economy expanded 3.7 percent during the four quarters of the year. The economy made these advances even as energy prices soared, the Federal Reserve raised interest rates, and the demand-side effects of fiscal policy stimulus began to recede in the second half. Such continued growth indicates that the economy has shifted from a policy-supported recovery to a self-sustaining, healthy expansion.

This chapter reviews the economic developments of 2004 and discusses the Administration’s forecast for the years ahead. The key points in this chapter are:

• Real gross domestic product (GDP) grew solidly during 2004. Business investment in equipment and software accelerated, and consumer spending growth remained strong.

• Labor markets strengthened during the year. The unemployment rate continued to decline, and employers created more than 2 million new jobs.

• Inflation rose from the extremely low levels of 2003, partly because of rapid increases in energy prices. Nevertheless, core consumer price index (CPI) inflation has remained in the moderate 2 percent range, and inflation expectations remain low.

• The Administration’s forecast calls for the economic expansion to continue this year, with real GDP growing faster than its historical average and the unemployment rate continuing to decline. The economy is expected to continue on a path of strong, sustainable growth.

Developments in 2004 and the Near-Term Outlook

Real GDP grew a robust 3.7 percent during the four quarters of 2004, above the average historical pace. (Real GDP growth was 4.4 percent on a year-over-year basis comparing GDP for 2004 as a whole with GDP for 2003 as a whole.) Growth was supported by gains in consumer spending, business fixed investment, and, to a lesser extent, housing investment, inventory accumulation, and government spending. Net exports (exports less imports) held down growth in all four quarters as the trade deficit rose in the third quarter to a record high as a percentage of GDP. Strengthening economic growth among our trading partners led to an increase in exports, but imports
continued to outpace exports as U.S. domestic demand and demand for imported oil remained strong. The rise in crude oil prices reduced growth somewhat during the year (Box 1-1).

The Administration expects real GDP to grow 3.5 percent during the four quarters of 2005, in line with the consensus of professional forecasters. This growth is forecast to be driven by continued gains in consumer spending, investment growth (although slower than in 2004), and stronger net exports. The unemployment rate, which declined 0.5 percentage point to 5.4 percent during the four quarters of 2004, is projected to edge down further to 5.3 percent by the fourth quarter of 2005. Nonfarm payroll employment, which grew about 180,000 per month during 2004, is projected to grow about 175,000 per month in 2005, in line with other professional forecasts.

Box 1-1: Oil Prices and the Economy

Rising oil prices hindered growth in 2004. Boosted by strong world demand and both domestic and foreign supply disruptions, the price of crude oil purchased by refiners increased almost continuously from $29 per barrel in December 2003 through October 2004 when it peaked at $46 per barrel. A more-widely followed (but less comprehensive) measure, the spot price of West Texas Intermediate crude oil, peaked even higher, at $53 per barrel for the month of October. These prices were historical highs in nominal terms, and were about 60 percent of the all-time high in real terms (Chart 1-1). Crude oil prices then dropped off in November and December. For 2004 as a whole, refiners’ acquisition cost was almost $9 per barrel above its year-earlier level.

High oil prices are a headwind for the economy because they raise the cost of production, thus weakening the supply side of the economy, and absorb income that could have been used for other purchases, thus weakening the demand side of the economy. The United States imports about two-thirds of its crude oil (about 10 million barrels per day), and so the higher oil prices caused the bill for imported oil to increase by about $32 billion (or 0.3 percent of GDP) in 2004. This increase acted like a tax holding back aggregate demand.

One rule of thumb is that a $10 per barrel increase in the price of oil reduces the level of real GDP by roughly 0.4 percent after four quarters. Thus the roughly $9 per barrel increase in average oil prices for 2004 may have held back real GDP growth by 0.3 or 0.4 percentage point. If oil prices move as expected by the futures market, average oil prices in 2005 will only slightly exceed the 2004 average—so oil prices are expected to be only a minor impediment to 2005 growth.
Consumer Spending

Consumer spending continued its solid growth in 2004. Real personal consumption expenditures, which account for 70 percent of GDP, rose 3.9 percent during the four quarters of 2004. Consumer spending has been boosted by continued gains in disposable personal income and a rebound in household wealth. Real disposable personal income—after-tax income adjusted for inflation—rose by 2.3 percent at an annual rate during the first 11 months of 2004. Household net worth, meanwhile, grew at a 6 percent annual rate in the first three quarters of 2004 (on top of a 13-percent gain during 2003), as equity prices moved up and housing prices continued to increase.

Personal saving fell to 0.8 percent of disposable personal income in the first 11 months of the year, down from an average of 1.4 percent in 2003. The Administration forecast assumes that the saving rate will be roughly flat in the coming years. Consumer spending is projected to continue its solid growth in 2005, supported by solid consumer sentiment (which was above average historical levels in December), projected real compensation gains, and the recent rebound in household wealth. Real consumer spending is projected to grow somewhat more slowly than overall real GDP during the projection period to 2010.
Residential Investment

The housing sector remained strong through year-end 2004. Residential investment increased 6 percent during the four quarters of 2004, following a 12 percent gain during 2003. Demand for new housing has been stimulated by low mortgage rates. Rates on 30-year fixed-rate mortgages averaged 5.8 percent in 2004—about the same as a year earlier, but lower than at any other time in the past 30 years. Sales of new single-family homes during 2004 were the highest since at least 1963, when the government began tracking this information, and the homeownership rate was a record 69 percent.

The strength in housing demand has been reflected in home prices. An index of prices for houses involved in repeat transactions (that is, sales prices of the same house over time) increased by 13 percent during the four quarters ended in the third quarter of 2004—the biggest four-quarter increase since the late 1970s. The rapid increase in demand and prices has further helped support gains in home construction. Housing starts totaled 1.95 million units during 2004, making it the strongest year for housing starts since 1978.

The growth of new housing starts will likely slow in 2005. Long-term Treasury rates are projected to increase, leading mortgage rates to edge up as well. In addition, demographics suggest that the formation of new households is unlikely to support additional increases in housing activity. Taken together, these factors suggest that residential construction is likely to edge lower in the next couple of years and to remain roughly flat during the years through 2010.

Business Fixed Investment

Real business fixed investment (firms’ outlays on equipment, software, and structures) grew 9.9 percent during 2004, following a 9.4 percent gain during 2003. Growth was concentrated in equipment and software (up 13.6 percent), while nonresidential construction edged lower. Within the equipment and software category, growth during the four quarters of 2004 was particularly strong in computer equipment and software. Investment in transportation equipment also grew rapidly in 2004, overtaking its pre-9/11 level in the fourth quarter.

Nonresidential structures investment edged down during the four quarters of 2004, with a notable decline in investment in power and communications facilities. Real nonresidential construction has been stagnant since 2002, as vacancy rates in both office and industrial buildings have remained high. Construction of shopping centers and other multi-merchant structures has been robust, however.

Projections of future investment growth are based, in part, on the observation that growth in investment spending correlates well with the acceleration (that is, the change in the growth rate) of business output (Chart 1-2); the
reasons for this correlation are discussed more fully in Chapter 2, *Expansions Past and Present*. Equipment investment spending grew quite fast during 2003 and 2004, consistent with the rapid acceleration of nonfarm output growth from 2001 to 2003. The 3.5 percent growth projected for real GDP during the four quarters of 2005 is solid but below the growth rates of 2003 and 2004. It follows, therefore, that the growth of investment is likely to be slower in 2005 than in 2004. In addition, the termination of the special investment expensing provisions allowed under the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA) is likely to have advanced into 2004 some investment spending that might have been planned for early 2005. The end of this policy could limit investment growth in the first quarter of 2005.

**Business Inventories**

Businesses rebuilt inventories in 2004; inventory investment was solidly positive during the year, after being slightly negative in 2003. Inventory investment contributed an average of 0.35 percentage point to real GDP growth during the four quarters of 2004.

Inventories appear to be lean relative to economy-wide sales and shipments, with the inventory-to-sales ratio for manufacturing and trade close to its historic low. Assessing just how lean these inventories are is difficult, however,
as ongoing improvements in supply-chain management (such as just-in-time practices, discussed in Chapter 2) have reduced the need for inventory stocks. Inventories grew almost as fast as sales in 2004, and the inventory-to-sales ratio for manufacturing and trade edged down only slightly last year. Inventory investment in 2005 is projected to be sufficient to hold the inventory-to-sales ratio approximately constant, and the pace of inventory investment is projected to contribute little to GDP growth in 2005.

Government Purchases

Real Federal purchases (consumption expenditures and gross investment) grew at a 4 percent rate during the four quarters of 2004, with most of that growth accounted for by defense spending. Total nominal Federal expenditures (including transfer and interest payments) slowed to a 5 percent rate of growth during 2004 from a 6 percent rate in 2003.

After several difficult years, the budget position of states and localities improved recently due to a combination of spending restraint and renewed growth of revenues. The level of real state and local consumption and gross investment was little changed during 2004, the lowest growth in real spending since the early 1980s. State and local revenues have been boosted by increased household income and consumer spending, as well as by additional federal grants authorized under JGTRRA. Spending restraint, together with a pickup in revenues, boosted the net saving of state and local governments to roughly $11 billion during the first three quarters of 2004, roughly reversing the dissaving during the year-earlier period. Real state and local spending is projected to pick up from last year’s slow growth, to about 2 percent per year during the projection period.

Exports and Imports

The trade deficit expanded substantially during 2004. Real exports increased 4 percent, as economic growth strengthened among our major trading partners, but real imports increased even faster (at a 9.2 percent rate), partly due to the more robust recovery in the United States than abroad. The trade deficit on goods and services reached about 5¼ percent of GDP in the third quarter of 2004.

The rapid increases in real imports were widespread and included capital goods and industrial supplies, petroleum, and consumer goods.

All the major categories of real nonagricultural exports (capital goods, industrial supplies, motor vehicles, consumer goods, and services) contributed to the growth of overall exports. Agricultural exports declined, however, as exports of beef fell on concerns about “mad cow” disease. Due to the detection of the first known case of “mad cow” disease in the United States in late
2003, a number of countries that together account for most U.S. beef exports have completely or partially halted purchases of American beef. As a result, beef exports—which were $3.1 billion in 2003—have now fallen to about $0.5 billion at an annual rate.

The rapid growth of imports relative to exports largely reflects faster growth in the United States than among our trading partners, as U.S. demand for imports increases faster than foreigners’ demand for our exports. For example, the U.S. economy grew faster than its trading partners in the Organization for Economic Cooperation and Development (OECD) during the four quarters of 2003 (4.4 percent versus 2.2 percent), and the OECD growth estimate for the four quarters of 2004 also shows slower growth elsewhere in the OECD (2.7 percent) than the 3.7 percent official estimate of growth for the United States.

The current account deficit, which primarily reflects the trade deficit but also includes net international flows of investment income and transfers, widened to about 5.6 percent of GDP in the second and third quarters. The current account deficit represents the inflow of capital that is needed to finance domestic U.S. investment in excess of domestic saving. Over the latter half of the 1990s and the early 2000s, the U.S. current account deficit expanded as domestic investment grew faster than saving (Chart 1-3). More recently, the current account deficit has expanded as the national saving rate has fallen.

Chart 1-3  Saving, Investment, and the Current Account Balance
Lower national saving primarily accounts for the widening of the current account deficit since 2000.

Source: Department of Commerce (Bureau of Economic Analysis).
Looking ahead, stronger growth in U.S. trading partners appears to favor continued gains in export growth. Growth among the non-U.S. members of the OECD is projected to increase from 2.7 percent during the four quarters of 2004 to 3.0 percent during the four quarters of 2005. This growth should support growth in U.S. exports. This effect will likely be augmented by an expected rise in the U.S. share of world exports, owing in part to recent declines in the value of the dollar against other major currencies. Overall, the Administration projects real exports to grow noticeably faster than GDP in 2005. The projected moderation of U.S. GDP growth in 2005 and 2006 together with the recent change in the exchange value of the dollar suggest that growth in real imports will slow in the future.

Employment

Nonfarm payroll employment increased about 2.2 million during 2004, the largest annual gain since 1999. The unemployment rate declined to 5.4 percent in December 2004, well below the 6.3 percent peak of June 2003. The unemployment rate in 2004 was below the averages of the 1970s, the 1980s, and the 1990s.

Job gains were spread broadly across major industry sectors in 2004. The service-providing sector accounted for 85 percent of job growth during the year, in line with its 83 percent share of overall employment. The goods-producing sector accounted for the remaining 15 percent of the gains, in line with its 17 percent share of overall employment. Within the goods-producing sector, employment growth was concentrated in construction; manufacturing employment also increased, the first such gain since 1997.

These employment figures reflect the benchmark adjustment of the employment data in early February 2005. The employment data for 2004 will also be affected by next year’s benchmarking process, which will cover the period from March 2004 to March 2005.

The Administration projects that employment will increase at a pace of about 175,000 jobs per month on average during the 12 months of 2005—a projection that is in line with the consensus of private forecasters. The unemployment rate is projected to edge down to 5.3 percent by the fourth quarter of 2005. Employment growth is not expected to slow by as much as output growth because productivity (output per hour) is projected to increase at a slower pace than in 2004, and more of the projected output growth may be translated into labor demand and employment in 2005 than in 2004.
Productivity

Recent productivity growth has been extraordinary. Nonfarm productivity has grown at a 4.2 percent annual rate since the business-cycle peak in the first quarter of 2001, a period that includes both recession and recovery. This is a 1.8 percentage point acceleration from the already rapid 2.4 percent annual growth rate recorded from 1995 to 2001 (Chart 1-4).

Although the cause of the 1995 acceleration is not well understood, plausible explanations have been offered relating to capital deepening, especially of informational and organizational capital. But none of these explanations helps to explain the post-2000 productivity acceleration, which occurred despite a slowing of investment in both conventional capital goods and information technology (IT).

Wages and Prices

Following very low inflation during 2003, most measures of inflation increased during 2004, with the largest increases in those price indexes that include energy. For example, the consumer price index (CPI) increased 3.3 percent over the 12 months of 2004, well above the 1.9 percent rise...
during the previous year. Excluding the volatile food and energy components, core consumer prices increased 2.2 percent during 2004, up from 1.1 percent during 2003. About 0.4 percentage point of the year-to-year acceleration in the core CPI is accounted for by used car prices, which dropped sharply in 2003 before rebounding in 2004. Consumer energy prices increased 17 percent in 2004—with particularly large (27 percent) increases in petroleum-based energy prices. Food prices increased 2.7 percent during 2004, down slightly from their 3.6 percent rise in 2003.

Hourly compensation of workers grew solidly during the year, mostly because of rising benefits. Private-sector hourly compensation, as measured by the employment cost index (ECI), increased 3.8 percent during the 12 months of 2004—down slightly from its 4.0 percent year-earlier pace. The wages and salaries component of this measure rose 2.4 percent during the year, while benefits increased by 6.9 percent. The increase in hourly benefits was led by an increase in employer contributions to defined benefit programs—which increased at a 66 percent annual rate during the first three quarters of 2004, according to the employer costs for employee compensation index (derived from the same survey as the ECI, but with different weights). This rapid increase occurred as employers made “catch-up” contributions to their pension plans to offset some of the underfunding that developed in recent years. Employer-paid health premiums rose 7.3 percent during 2004 according to the ECI, a smaller increase than the 10.5 percent during 2003.

The effects of these gains in hourly compensation on unit labor costs were mostly offset by the rapid growth rate of productivity during the first three quarters of 2004. Unit labor costs rose at only a 0.7 percent annual rate during the first three quarters of 2004, after falling from 2001 through 2003. Most of the increase in prices during 2004 was attributable to widening gross profit margins rather than to increasing costs, suggesting some tightness in product markets. Consistent with this product-market tightness, delivery lags lengthened during the first half of 2004, as reported by manufacturing supply managers. These supply delivery lags increased much more slowly toward year-end, however, and the experience of the last two expansions suggests that these lags are likely to recede as the economy reconfigures itself for sustained growth.

Last year’s increase in inflation appears likely to have been a temporary phenomenon rather than the beginning of a sustained increase. Inflation, as measured by the CPI, is expected to stabilize at a 2.4 percent annual rate in future years, up only slightly from the 2.2 percent increase in the core CPI during 2004. In 2005 and 2006, the overall consumer price index is projected to be held down by anticipated declines in energy prices consistent with the declines implicit in the futures market for crude oil. The inflation fluctuations during the past year have not affected long-term inflation expectations, which remain stable (Chart 1-5).
The projected path of inflation as measured by the GDP price index is similar, but a bit lower. It is projected to fall to 1.9 percent during the four quarters of 2005, down slightly from the 2.2 percent annual rate of increase in the GDP price index excluding food and energy during 2004. During the next several years, the GDP price index is projected to increase at a 2.0 or 2.1 percent annual rate—a stable pace of inflation consistent with the projected unemployment rate of 5.1 percent.

These inflation projections—although revised up from a year ago—are close to those of the consensus of professional economic forecasters.

The wedge between the CPI and the GDP measures of inflation has implications for Federal budget projections. A larger wedge would reduce the Federal budget surplus because cost-of-living adjustments for Social Security and other indexed programs rise with the CPI, whereas Federal revenue tends to increase with the GDP price index. For a given level of nominal income, increases in the CPI also cut Federal revenue because they raise income tax brackets and affect other inflation-indexed features of the tax code. Of the two indexes, the CPI tends to increase faster in part because it measures the price of a fixed basket of goods and services. In contrast, the GDP price index increases less rapidly because it reflects the choice of households and businesses to shift their purchases away from items with increasing relative prices.
and toward items with decreasing relative prices. In addition, the GDP price index includes investment goods, such as computers, whose relative prices have been falling rapidly. Computers, in particular, receive a much larger weight in the GDP price index (1 percent) than in the CPI (0.2 percent).

During the 10 years ended in 2003, the wedge between inflation in the CPI-U-RS (a historical CPI series designed to be consistent with current CPI methods) and the rate of change in the GDP price index averaged 0.4 percentage point per year. The wedge was particularly high during 2004 when the CPI increased 1.0 percentage point faster than the GDP price index, reflecting the roughly 50 percent increase in oil prices, which have a much larger weight in consumption prices than in GDP as a whole. Since domestic production accounts for only about a third of U.S. oil consumption, the weight of oil prices in GDP is roughly one-third of its weight in the consumption basket. As this boost from higher oil prices unwinds over the next couple of years, the wedge between CPI and GDP inflation is likely to be lower than its recent average. During the entire 2004 to 2010 period, the wedge is projected to average 0.4 percentage point, equal to the Administration estimate of the wedge in the long term.

Financial Markets

Stock prices fluctuated within a relatively narrow range for the first eight months of the year, and then increased during the last four months. Over the 12 months of 2004, the Wilshire 5000, a broad index of stock prices, rose 11 percent. These gains built on the 29 percent gains that were recorded during 2003.

Long-term interest rates fluctuated substantially during 2004, but finished the year essentially unchanged. The yield on 10-year Treasury notes fell by 0.3 percentage point from January through March, to about 3.8 percent. The yield then increased sharply in the next two months, rising 0.9 percentage point, coinciding with a pickup in the core CPI and several months of strong job growth. Rates began to fall again in early June, as monthly increases in the core CPI and job growth moderated. The 10-year rate declined during the second half of the year, even as the Federal Reserve’s Open Market Committee raised the (overnight) Federal funds rate at every meeting from June through December. The 10-year rate ended the year at about the same level as it had begun.

The Long-Term Outlook Through 2010

The U.S. economy continues to be well-positioned for long-term growth. The Administration projects that GDP will expand strongly through 2010, inflation will remain contained, and labor markets will continue to
strengthen. The forecast is based on conservative economic assumptions that are close to the consensus of professional forecasters. These assumptions provide a prudent and cautious basis for the budget projections.

Growth in GDP over the Long Term

The Administration projects that real GDP will grow at an average annual rate of 3.3 percent during the four years of 2005 to 2008 (Table 1-1), roughly in line with the consensus forecast for those years. This pace is slightly above the expected 3.2 percent annual growth in potential GDP (a measure of productive capacity), so the unemployment rate is projected to edge lower from 5.4 percent at the end of 2004 to 5.1 percent by the end of 2006. The unemployment rate is expected to remain flat thereafter as the economy grows at its potential rate of 3.2 percent in 2007 and 2008 and 3.1 percent in 2009 and 2010. As discussed below, potential GDP growth is expected to slow somewhat after 2008, as labor force growth declines.

The projected growth of GDP is conservative relative to recent experience. The economy grew more than 4 percent during 2003 and is estimated to have grown 3.7 percent during the four quarters of 2004. Moreover, Okun’s Law, a well-known economic rule of thumb, suggests that potential GDP growth has been about 3.5 percent in recent years (Box 1-2).

Table 1-1.—Administration Forecast

<table>
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<th>Year</th>
<th>Nominal GDP</th>
<th>Real GDP (chain-type)</th>
<th>GDP price index (chain-type)</th>
<th>Consumer price index (CPI-U)</th>
<th>Unemployment rate (percent)</th>
<th>Interest rate, 91-day Treasury bills</th>
<th>Interest rate, 10-year Treasury notes</th>
<th>Nonfarm payroll employment (millions)</th>
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1 Based on data available as of December 3, 2004. Figures cited in the text for 2004 are based on data available through January 28, 2005, and so may differ from figures shown here.

2 Secondary market (bank discount basis).

Sources: Council of Economic Advisers, Department of Commerce (Bureau of Economic Analysis), Department of Labor (Bureau of Labor Statistics), Department of the Treasury, and Office of Management and Budget.
One way of estimating the economy’s potential growth rate is through the empirical regularity known as Okun’s Law, which relates changes in the unemployment rate to GDP growth (Chart 1-6). The chart plots the four-quarter change in the unemployment rate (which has been adjusted to account for demographic changes) against the four-quarter growth rate of real output. According to Okun’s Law, the unemployment rate falls when output grows faster than its potential rate and rises when output growth falls short of that potential. The rate of real GDP growth consistent with a stable unemployment rate is then interpreted as the rate of potential growth; this potential can be estimated as the rate at which the fitted line in Chart 1-6 crosses the horizontal axis. As can be seen by the position of the two parallel lines, the pace of potential real GDP growth appears to have picked up after 1995. The lower line, which is drawn through data for 1980–1995, suggests that potential real GDP grew at a 2.8 percent annual rate during those years. The upper line—which is drawn through data for 1996–2004 and is estimated so as to be parallel to the lower line—suggests that real potential GDP growth accelerated to a 3.5 percent annual rate during the past nine years.
The growth rate of the economy over the long run is determined by its supply-side components, which include population, labor force participation, productivity, and the workweek. The Administration’s forecast for the contribution of different supply-side factors to real GDP growth is shown in Table 1-2.

As seen in the fourth column of the table, the supply-side composition of real GDP growth has been unusual since the beginning of 2001, with exceptionally high productivity growth (4.2 percent at an annual rate) being partially offset by a large decline in the ratio of nonfarm business employment to household employment. This unusual pattern reflects the discrepancy between the slow growth of employment as measured by the employer survey and the more rapid growth of employment as measured by the household survey—a disparity that has not been adequately explained. Declines in the labor force participation rate have also held down real GDP growth during the past four years, although the reasons for these declines may be partly cyclical.

### Table 1-2.—Accounting for Growth in Real GDP, 1953–2010

[Average annual percent change]

<table>
<thead>
<tr>
<th>Item</th>
<th>1953 Q2 to 1973 Q4</th>
<th>1973 Q4 to 1995 Q2</th>
<th>1995 Q2 to 2001 Q1</th>
<th>2001 Q1 to 2004 Q3</th>
<th>2004 Q3 to 2010 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Civilian noninstitutional population aged 16 and over</td>
<td>1.6</td>
<td>1.4</td>
<td>1.2</td>
<td>1.2</td>
<td>1.1</td>
</tr>
<tr>
<td>2) Plus: Civilian labor force participation rate</td>
<td>.2</td>
<td>.4</td>
<td>.1</td>
<td>-.5</td>
<td>-.1</td>
</tr>
<tr>
<td>3) Equals: Civilian labor force</td>
<td>1.8</td>
<td>1.8</td>
<td>1.4</td>
<td>.7</td>
<td>1.0</td>
</tr>
<tr>
<td>4) Plus: Civilian employment rate</td>
<td>-.1</td>
<td>.0</td>
<td>.3</td>
<td>-.4</td>
<td>.1</td>
</tr>
<tr>
<td>5) Equals: Civilian employment</td>
<td>1.7</td>
<td>1.8</td>
<td>1.7</td>
<td>.4</td>
<td>1.1</td>
</tr>
<tr>
<td>6) Plus: Nonfarm business employment as a share of civilian employment</td>
<td>-.1</td>
<td>.1</td>
<td>.5</td>
<td>-.9</td>
<td>.0</td>
</tr>
<tr>
<td>7) Equals: Nonfarm business employment</td>
<td>1.6</td>
<td>1.8</td>
<td>2.1</td>
<td>-.6</td>
<td>1.1</td>
</tr>
<tr>
<td>8) Plus: Average weekly hours (nonfarm business)</td>
<td>-.3</td>
<td>-.3</td>
<td>-.3</td>
<td>-.4</td>
<td>.1</td>
</tr>
<tr>
<td>9) Equals: Hours of all persons (nonfarm business)</td>
<td>1.3</td>
<td>1.6</td>
<td>1.9</td>
<td>-1.0</td>
<td>1.2</td>
</tr>
<tr>
<td>10) Plus: Output per hour (productivity, nonfarm business)</td>
<td>2.5</td>
<td>1.5</td>
<td>2.4</td>
<td>4.2</td>
<td>2.5</td>
</tr>
<tr>
<td>11) Equals: Nonfarm business output</td>
<td>3.8</td>
<td>3.1</td>
<td>4.3</td>
<td>3.2</td>
<td>3.8</td>
</tr>
<tr>
<td>12) Plus: Ratio of real GDP to nonfarm business output</td>
<td>-.2</td>
<td>-.2</td>
<td>-.5</td>
<td>-.4</td>
<td>-.4</td>
</tr>
<tr>
<td>13) Equals: Real GDP</td>
<td>3.6</td>
<td>2.8</td>
<td>3.8</td>
<td>2.8</td>
<td>3.3</td>
</tr>
</tbody>
</table>

1 Adjusted by Council of Economic Advisers to smooth discontinuities in the population series since 1990.
3 Line 6 translates the civilian employment growth rate into the nonfarm business employment growth rate.
4 Line 12 translates nonfarm business output back into output for all sectors (GDP), which includes the output of farms and general government.

Note: The periods 1953 Q2, 1973 Q4, and 2001 Q1 are NBER business-cycle peaks. Detail may not add to total because of rounding.

Sources: Council of Economic Advisers, Department of Commerce (Bureau of Economic Analysis), and Department of Labor (Bureau of Labor Statistics).
The 4.2 percent rate of productivity growth during the past three and a half years is remarkable, particularly because this period included a recession, and is well above the already strong 2.4 percent productivity growth experienced from 1995 to 2001. The causes of the post-2001 productivity acceleration remain a mystery at this time, and so it seems unwise to presume that the rapid growth of the last few years will be sustained indefinitely. The Administration expects nonfarm labor productivity to grow at a 2.5 percent annual pace over the next six and a quarter years. This is a bit below the assumed 2.6 percent trend rate of growth, similar to the 2.4 percent pace during the 1995–2001 period, and only modestly above the 2.3 percent average pace since the data series began in 1947.

Growth of the labor force (also shown in Table 1-2) is projected to contribute 1.0 percentage point per year, on average, to growth of potential output through 2010. Labor force growth results from changes in the working-age population and the participation rate. The Bureau of the Census projects that the working-age population will grow at an average annual rate of 1.1 percent through 2010. This pace is more rapid in the near future and then trails off after 2008. The last year in which the labor force participation rate increased was 1997, suggesting that the long-term trend of rising participation has ended. Since then, the participation rate has fallen at an average 0.2 percent annual pace.

Demographic factors will likely lead to yet lower participation in future years. Baby boomers are currently in their forties and fifties. Over the next several years they will move into older age brackets with lower participation rates. As a result, the labor force participation rate is projected to edge down an average of 0.1 percent per year through 2010. The decline may be greater, however, after 2008, which is the year that the first baby boomers reach the early-retirement age of 62. Together with the expected deceleration of the growth of the working-age population, the falling participation rate works to slow the growth rate of potential output to 3.1 percent in 2009–2010.

An expanding workweek is projected to add 0.1 percentage point to potential GDP growth during the projection period. Most of this increase occurs in the next couple of years during the period of strong cyclical labor demand, rather than as a permanent feature of long-term growth. The ratio of nonfarm employment to household employment (which, as noted above, subtracted a puzzling 0.9 percentage point from real GDP growth during 2001–2004) is projected to contribute nothing toward real GDP growth during the projection period. It is possible, however, that it might reverse course during the next few years, offsetting its recent weakness. Such a development would add to real GDP growth.
In sum, potential real GDP is projected to grow at a 3.2 percent annual pace through 2008, and then to slow to 3.1 percent in 2009 and 2010. Actual real GDP growth during the six-year forecast period is projected to be slightly higher, at 3.3 percent, as the unemployment rate declines and the workweek expands. The economy is forecast to grow at potential beginning in 2007, and the unemployment rate is projected to stabilize at 5.1 percent.

**Interest Rates over the Long Term**

The Administration forecast of interest rates is based on financial market data as well as a survey of economic forecasters. The yield curve, which shows how the yield on Treasury securities rises with the maturity of those securities, is currently steeper than usual. This steepness suggests that financial market participants expect short-term interest rates to rise. The Administration forecast thus projects gradual increases in the interest rate on 91-day Treasury bills to continue through 2010—with most of the increase expected during the next two years. This rate is expected to reach 4.2 percent in 2010, at which point the real interest rate on 91-day Treasury bills will be close to its historical average. The projected path of the interest rate on 10-year Treasury notes is consistent with the path of short-term Treasury rates. By 2010, the 10-year rate is projected to be 5.7 percent, 3.3 percentage points above expected CPI inflation—a typical real rate by historical standards. By 2010, the projected term premium (the difference between the 10-year interest rate and the 91-day rate) of 1.5 percentage points is in line with its historical average.

**The Composition of Income over the Long Term**

A primary purpose of the Administration’s economic forecast is to estimate future government revenues, which requires a projection of the components of taxable income. The Administration’s income-side projection is based on the historical stability of the long-run labor compensation and capital shares of gross domestic income (GDI). During the first three quarters of 2004, the labor compensation share of GDI was only 56.8 percent—well below its 1959–2003 average of 57.9 percent. From this jumping-off point, the labor share is projected to slowly rise to 57.8 percent by 2010.

The labor compensation share consists of wages and salaries, which are taxable, employer contributions to employee pension and insurance funds (that is, fringe benefits), which are not taxable, and employer contributions for government social insurance. The Administration forecasts that the wage and salary share of compensation will be roughly stable during the projection period. One of the main factors boosting non-wage compensation during the
past two years has been employer contributions to defined-benefit pension plans, and although these contributions are likely to remain high in the next few years, they are not projected to rise as a share of compensation after 2004.

The capital share of GDI is expected to fall from its currently high level before plateauing near its historical average. Within the capital share, a near-term decline in depreciation (an echo of the decline in short-lived investment during 2001 and 2002) is expected to boost corporate profits, which in the third quarter of 2004 were about 10.2 percent of GDI (excluding the temporary negative effects of hurricanes)—a figure well above its post-1959 average of 8.5 percent. From 2005 forward, the profit share is expected to slowly edge down toward its long-term average.

The projected pattern of book profits (known in the national income accounts as “profits before tax”) reflects the termination of the window for expensing of equipment investment allowed under the Job Creation and Worker Assistance Act of 2002 and the Jobs and Growth Tax Relief Reconciliation Act of 2003. These expensing provisions reduced taxable profits from the third quarter of 2001 through the fourth quarter of 2004. The expiration of the expensing provisions increases book profits from 2005 forward, however, because investment goods expensed during the three-year expensing window will have less remaining value to depreciate. The share of other taxable income (the sum of rent, dividends, proprietors’ income, and personal interest income) is projected to fall in coming years, mainly because of the delayed effects of past declines in long-term interest rates, which reduce personal interest income during the projection period.

Conclusion

Supported by expansionary fiscal and monetary policy, the economy now appears to have shifted from a tentative recovery to a sustained expansion. Consumer spending remains strong, businesses are continuing to invest, and employment growth has rebounded. Prospects remain bright for continued growth in the years ahead. And yet much work remains in making our economy as productive as possible. Later chapters of this Report explore how pro-growth policies, such as reforming our tax system, expanding the reach of property rights, and encouraging innovation, can enhance our economic performance.
The U.S. economy began to expand rapidly in mid-2003, an expansion that carried through to 2004. Real gross domestic product (GDP) rose by 4.0 percent from the third quarter of 2003 to the third quarter of 2004. Employment grew steadily in 2004, with more than 2.6 million jobs created on net since the job market turned around in August 2003. The unemployment rate has declined from a high of 6.3 percent in June 2003 to 5.4 percent in December 2004—a rate below the average unemployment rate of the 1970s, 1980s, and 1990s. Inflation picked up modestly over the course of 2004 but remains low by historical standards, with consumer prices having increased by 3.3 percent during 2004. This state of affairs—strong growth, declining unemployment, and moderate inflation—is remarkable in light of the powerful contractionary forces at work since early 2000: the bursting of the high-tech bubble of the 1990s, revelations of corporate scandals, weak growth in the United States’ major trading partners, the war in Iraq, and the impact of the terrorist attacks.

The recent recession and expansion took place against the backdrop of an economy undergoing fundamental changes. At the beginning of the twentieth century, the agricultural sector was the biggest employer; at the beginning of the twenty-first, the service-providing sector employed the most people. Technical progress has spurred productivity growth and raised living standards. The labor force increased enormously, as the population grew and the labor force participation rate of women rose over the course of the last century. The development of new financial instruments helped people become financially secure, and the expansion of the mortgage market has helped a record number of people own homes.

Given these large changes in the structure of the U.S. economy, the nature of economic expansions has probably also changed over time. Enough time has now elapsed in the current expansion to allow fruitful comparisons with previous expansions. The key findings are:

• The last two expansions—the one starting in 1991 and the current one—are similar to each other, but dissimilar to previous expansions. Both have exhibited relatively moderate overall growth in key economic variables.

• The last two expansions followed especially shallow recessions. Generally, shallow recessions are followed by shallow recoveries and deep recessions by robust recoveries.
• Stabilization policy—fiscal and monetary policy—has been particularly active during the last recession and expansion. The boost to disposable income from fiscal policy has been especially strong. Without these strong policies, the recession would have been deeper and longer.

Overview of the Current Expansion

Chart 2-1 plots the level of real GDP in the current expansion, the expansion of the 1990s, and the average of the five expansions from 1960 to 1990. The average provides a historical benchmark for the behavior of expansions; the year 1960 is chosen as a starting point to balance the need to smooth behavior over multiple expansions with the need to recognize that changes in the nature of the economy over time make earlier expansions less comparable to current ones. In each expansion, real GDP is normalized to 100 at the trough of the preceding recession (which is also the beginning of the expansion). Dates of the troughs are determined by the National Bureau of Economic Research. In the chart, each expansion begins at the vertical line at 0; points to the left of that line occur during the preceding recessions. The slope of each line is related to GDP growth: steeper slopes imply bigger changes in the level of real GDP per quarter, or faster growth.

**Chart 2-1  Real Gross Domestic Product**
The last two expansions have had more moderate GDP growth than the prior ones; but the preceding recessions were also more mild, showing smaller drops in GDP from peak to trough.

Index, level at business cycle trough = 100

Note: Average based on prior expansions since 1960 excluding 1990s expansion.
Source: Department of Commerce (Bureau of Economic Analysis).
The behavior of real GDP is similar in the 1990s and current expansions, but both are different from the average prior expansion. In particular, real GDP has risen less robustly during the last two expansions than it did, on average, in the other expansions since 1960.

In the average contraction prior to 1990, the level of real GDP reached its peak approximately four quarters before the eventual trough; in the 1990-1991 contraction, GDP reached its peak two quarters before the trough. There were no consecutive quarters of decline in the most recent contraction, with revised data showing that real GDP dropped in the third quarter of 2000 and the first and third quarters of 2001, but grew in the intervening quarters.

Consumption

The largest component of GDP, real personal consumption expenditures, shows a similar pattern (Chart 2-2). Consumption behavior during the last two expansions has been almost identical, with the two recent expansions differing from prior expansions.

In the prior recessions, on average, consumption growth moderated starting six quarters before the recession's eventual trough, did not actually fall until two quarters before the trough, and began to rise in the quarter before the trough. In the 1990-1991 recession, consumption rose rapidly until two
quarters before the trough, dropped sharply until the trough, and mostly grew thereafter. The most recent recession stands out as different in that consumption continued to grow throughout. This likely reflects the important role of fiscal and monetary stimulus in supporting demand and the unusual extent to which the recession resulted from a collapse in investment following the bubble of the late 1990s.

**Investment**

In an average expansion prior to 1990, total nonresidential investment started to rise at the business cycle trough, but initially rose at a slower pace than consumption (Chart 2-3). In the expansion of the 1990s, however, investment continued to fall for four quarters after the trough, and in the most recent expansion, investment fell for five quarters after the overall economy had bottomed out.

Residential investment in the average of prior recessions began to drop eight quarters before the business cycle trough and rose quite sharply in the four quarters after the trough (Chart 2-4). The housing market has been strong in the current expansion, though housing investment has been increasing at a more moderate pace than in expansions before 1990. This pattern is likely the result of the unusual circumstance in which residential investment did not falter along with the broader economy. In turn, this lack
of faltering may be attributable to low mortgage rates and to the movement of households’ funds out of equities and into housing.

Real house prices have also behaved quite differently across the two most recent expansions. Real prices dropped throughout the expansion of the 1990s, reaching a low in 1995. They have risen by a total of about 44 percent since then. More than half of this increase, about 25 percent, has occurred since 2000. The recent increases in house prices, which have been particularly large in some urban markets, have raised concerns that the housing market may be in a “bubble.” It is worth noting in this context that home equity as a share of net worth dropped during the 1990s, as real stock prices rose rapidly while house prices fell for the first half of the decade. This share has been rising since the late 1990s, but remains below its high of about 22 percent reached in 1985. This rebalancing of portfolios, pushing up the share of home equity in net worth closer to its historical norm, raises the demand for housing. This increase in housing demand may thus be partly responsible for the recent run-up in house prices.

Exports

At the beginning of the current expansion, exports roughly matched the behavior of expansions prior to 1990, in which exports picked up relatively
slowly at the start of the expansion (Chart 2-5). An increase in the rate of growth of exports during the last year has moved their behavior closer to that of the 1990s expansion. The decline in exports during the most recent recession was particularly large relative to previous ones, as economic growth among major U.S. trading partners slowed more than in most past business cycles; in contrast, exports continued to rise during the 1990-1991 recession. Thus both recent recessions and expansions show anomalous behavior, though in different ways.

Chart 2-5  Real Exports of Goods and Services
In the current expansion, exports have grown in line with the average prior expansion, after an especially sharp decline in the preceding recession.
Index, level at business cycle trough = 100

Note: Average based on prior expansions since 1960 excluding 1990s expansion.
Source: Department of Commerce (Bureau of Economic Analysis).

Labor Market
The behavior of the labor market was unusual in the most recent recession and the last two expansions. Before 1990, on average, payroll employment started to decline about three quarters before a business cycle trough—that is, employment on average has continued to rise in the early part of recessions (Chart 2-6). In an average expansion, employment begins to grow at the start of the expansion and reaches its previous peak three quarters after the trough. In the expansion of the 1990s, however, employment continued to fall for two quarters after the business cycle trough and did not reach its previous peak value until another six quarters had passed. In the most recent expansion, employment continued to fall for seven quarters after the recession had ended and appears to be on track to reach its prerecession level by early 2005. Though both of the
most recent expansions have shown relatively weak employment growth, they were also preceded by smaller declines in employment prior to the trough. The recent behavior of productivity can account for much of the difference in employment growth (Chart 2-7). Productivity, defined as output per hour worked, had been growing in line with the rates seen in past expansions, but then accelerated four to six quarters after the most recent trough. At 11 quarters after a business cycle trough, productivity is usually about 8.5 percent above its value at the trough; it is currently about 12 percent above its trough value. During the most recent expansion, productivity growth has averaged 4.2 percent per year at an annual rate, up substantially from the 2.5 percent growth rate seen on average from 1995 to 2000. By contrast, though the level of productivity growth was quite high during the 1990s, at an annual growth rate of 2.1 percent, even three years after the 1991 trough the level of productivity was not as high relative to its trough value as had been the case in prior expansions. Hence current productivity growth particularly stands out.

In the short run, greater productivity growth sets the bar higher for employment growth. With increased productivity, a given amount of output can be produced with fewer hours worked, so real GDP must grow more quickly for employment to grow. In the long run, however, higher productivity growth leads to higher income per person, and will thus be expected to
be positive for employment growth. This is because part of the increase in output is distributed to workers in the form of higher real wages and benefits and part to owners of capital in the form of profits. The fraction of national income accorded to profits has risen in recent years, with the share going to profits at 10.9 percent in the third quarter of 2004, up from an average of 9.3 percent during the 1980s and 1990s. The fraction accorded to wage payments and benefits has been approximately constant over longer periods of time. A return to the historical pattern would result in rising real wages.

The behavior of unemployment during the recent expansion, though atypical when compared with expansions from the 1960s through the 1980s, roughly matches the behavior of unemployment during the 1990s: a continued rise in unemployment after the beginning of the expansion, followed by a gradual decline about a year later.

**Summary**

The beginnings of the last two expansions have been characterized by moderate growth in key macroeconomic variables: real GDP, consumption, investment, employment, and unemployment. The beginning of the most recent expansion has seen slower growth in investment and employment than the last one. The pace of economic expansion picked up, however, in the
middle of 2003. The more moderate rate of employment growth is at least partly explained by unusually robust growth in productivity—which further indicates higher future real wage growth. Unemployment rose by less than in the last recession and expansion. Both of the most recent expansions were preceded by relatively mild recessions: the drop in real GDP was relatively small, and consumption did not drop at all in the most recent recession.

Symmetry in Recessions and Expansions

The last two expansions, though moderate, were preceded by shallow recessions. Past recessions were deeper and subsequent expansions more rapid. Together, the two sets of observations suggest that the rate of expansion may be related to the rate of contraction. This section evaluates that hypothesis.

Real GDP

Chart 2-8 plots the total percent contraction in real GDP during all recessions since 1960 against the percent expansion in real GDP in the four quarters following the trough. The latter time period is chosen to allow a uniform standard of comparison across expansions. Each point is labeled by

![Chart 2-8: Recessions and Expansions: Real GDP](image)

Real GDP tends to grow rapidly after deep recessions (such as that of 1981) and moderately after mild ones (such as that of 1969).

Percent expansion during four quarters following trough

Correlation = 0.48

Sources: Department of Commerce (Bureau of Economic Analysis) and Council of Economic Advisers.
the year corresponding to the start of the recession as dated by the National Bureau of Economic Research. A regression line is drawn through the points; the position of the line is determined by a statistical procedure known as linear regression, which tries to determine the best possible line by minimizing the squares of the sums of the vertical distances between each point and the line. The line provides the best estimate for how much of an increase in real GDP at the beginning of an expansion can be expected for a given decline in real GDP during a recession.

The graph confirms the hypothesis. For example, the 1981 recession and its aftermath saw a sharp drop in real GDP followed by a sharp rise, while the 1990-1991 recession saw a shallow drop in real GDP followed by a shallow rise. The regression line is upward-sloping, providing statistical evidence that shallow recessions were followed by initially shallow expansions and sharp recessions by initially sharp expansions. An inset on the graph indicates a correlation of about 0.5. A correlation measures how closely two variables are related: a value of 1.0 indicates that the variables move together perfectly, 0 indicates that the variables are unrelated, and -1.0 indicates that the variables move in opposite directions. A value of 0.5 indicates a fairly strong relationship.

The most recent recessions and expansions have been fairly moderate. Indeed, real GDP actually rose over the course of the most recent recession; this is true whether the last recession is dated to have started in the fourth quarter of 2000 or the first quarter of 2001.

Components of Real GDP

Given the symmetry in contractions and expansions of real GDP, one would expect some, if not all, of GDP’s components—consumption, investment, government spending (on consumption and investment), and net exports—to show a similar pattern. The behavior of two major parts of overall investment, real investment in equipment and software and inventory investment, most strongly matches that of real GDP.

The Labor Market

The relationship between the drops in employment during contractions and the initial rises in employment during the subsequent expansions is even stronger than the relationship between GDP declines during recessions and GDP increases during expansions (Chart 2-9).

Drops in employment during contractions and rises during expansions are smaller than many of the other variables we have seen—ranging between a decline of 3 percent and an increase of 3.4 percent. The most recent contractions saw especially small declines in employment—between 0.8 percent and
1.2 percent. Employment continued to decline into the beginning of the expansions, though by less than 1 percent in each case. As noted above, given the rises in GDP of over 2 percent during the first year of each expansion, the difference reflects strong productivity growth.

A Possible Explanation: The Financial Accelerator

The charts above provide evidence that moderate recessions are followed, at least initially, by moderate expansions, and sharp recessions by initially rapid expansions. This is seen most strongly in the behavior of real GDP and employment.

The largest component of GDP to follow the same pattern, investment, suggests a possible explanation for this relationship. Investment is positively correlated with GDP growth, rising when GDP growth is rising and falling when GDP growth is falling. This relationship is known as the “accelerator model” of investment: higher GDP growth leads to more investment, which in turn leads to even faster GDP growth. A shock that leads to a large decline in investment will thus cause an even larger decline in GDP growth. When that shock disappears, and investment rebounds to its previous level, GDP growth will also show a similar rebound.

Research over the past two decades on the role of financial markets in investment has provided an explanation for the relationship between investment and
GDP growth. To buy new capital goods, firms rely on several sources of financing. These include internal funds, such as retained earnings or capital infusions from firm owners, and external funds, such as the proceeds from loans and the sales of stocks and bonds. The amount of internal funds is related to the firm’s cash flow. In response to a slowdown in sales, cash flow will likely decline, reducing the amount of internal funds and therefore increasing the amount a firm needs to obtain from external finance. But lenders will be less willing to loan funds to firms with smaller cash flow, and the value of firms’ collateral is also likely to have decreased, further reducing their ability to obtain loans. Hence firms might be forced to reduce their investment. This reduction in turn will lead to lower output, lower cash flow, and yet again lower investment—leading to a further deceleration in output. The effect can work in reverse during economic expansions, with rising GDP making it easier for firms to get financing for new investment projects. This theory provides a possible explanation for why changes in the amount of investment can have a multiplier impact on the broader economy.

The “financial accelerator” effect is roughly proportional to the size of the decline in GDP, since the change in cash flow and the value of collateral would be expected to be roughly proportional to the decline in output. There is no consensus, however, about the magnitude of the accelerator effect. One study assessing the response of investment by firms to a monetary policy tightening, both with and without a financial accelerator, showed that the presence of an accelerator can cause the decline in investment to double compared to a situation in which there is no accelerator effect. Another study noted that small firms, which are likely to be more limited in their ability to borrow than large firms, show much larger declines in inventory and sales growth during recessions than do large firms. This finding further suggests an important role for the financial accelerator.

The accelerator theory can also provide a link between asset price bubbles and recessions and expansions. When the prices of equities or real estate rise, the resulting increases in asset values raise the value of collateral, making it easier for firms to obtain financing for investment—thus further raising output growth. Conversely, declines in asset values from the bursting of asset price bubbles can discourage investment.

Although the financial accelerator theory helps explain why on average the depth of the recession corresponds to the initial strength of the expansion, the theory will not explain the behavior of all recessions and expansions. Investment is affected by things other than output growth, and, as will be discussed more fully later in the chapter, economic shocks can affect other components of GDP. In the most recent recession, for example, investment fell more rapidly than in the average recession, but the fall in output was not particularly large. The solid growth in consumption, boosted by expansionary monetary and fiscal policy, helped reduce the fall in output.
Summary

Moderate recessions are followed by moderate expansions and sharp contractions by rapid recoveries. This may be a consequence of the “financial accelerator” model of investment, in which firms’ ability to borrow is related to the growth rate of output.

Seen in this context, the unusually moderate growth experienced at the beginning of the two most recent expansions seems less unusual, since the preceding recessions were also relatively mild. This observation begs the question of why the most recent recessions were mild. One possibility is that stabilization policy may have been more active and more effective during the last two recessions and subsequent expansions. This hypothesis can be assessed by looking at the two components of fiscal policy—taxes and spending—and at monetary policy.

Stabilization Policy

Before discussing specific details of stabilization policy, it will be useful to review what is known about the causes of business cycles, the effects of policy on economic activity, and the resulting challenges to the development and implementation of effective policy.

Business Cycles: Causes

Standard economic models suggest that long-run growth of real GDP is an outcome of technological progress, the accumulation of capital, and growth in the labor force. The models also suggest that either a larger labor force with a fixed capital stock or a larger capital stock with a fixed labor force will produce smaller and smaller additional amounts of output—a phenomenon known as diminishing returns. Hence capital accumulation alone and increases in the labor force alone will eventually result in higher levels of output but slower rates of output growth.

In the very long run, output will grow only if technological progress enables the production of more output for a given amount of capital and labor. In the short run, various shocks—unexpected events that cause large changes in the demand or supply of goods—can lead to recessions and expansions. The recessions and expansions can be seen as deviations from the long-run growth path.

Economic shocks can be divided into disturbances that affect aggregate demand and those that affect aggregate supply. Aggregate demand is the economy-wide demand for goods and services. It consists of consumer spending, investment, government purchases, and net exports (exports less
imports). *Aggregate supply* is the economy-wide supply of goods and services. Equilibrium in the economy occurs when aggregate demand equals aggregate supply.

Shocks that depress aggregate demand tend to lower output, lower employment (that is, raise unemployment), and put downward pressure on prices. For example, a decline in stock prices could lead to lower consumption spending. Shocks that raise aggregate demand have the opposite effect; they raise output, raise employment (lowering unemployment), and put upward pressure on prices. For example, greater optimism by firms about the state of the economy could lead to higher investment spending. Research has found that shocks to aggregate demand tend to affect output first rather than prices, but that these effects are temporary, lasting only a few years. However, such disturbances have long-lasting effects on the levels of prices and wages. That is, an increase in demand will lead to a temporary boost for output but a permanent rise in the price level (though not necessarily the inflation rate).

Shocks to aggregate supply, in contrast, tend to move output and prices in opposite directions. A beneficial shock to aggregate supply, such as a rise in productivity, raises output, lowers unemployment, and puts downward pressure on prices. An adverse shock to aggregate supply, such as an increase in the price of energy, has the opposite effects. To the extent that aggregate supply disturbances influence the determinants of long-run growth—the accumulation of capital, the supply of labor, and technological progress—supply shocks can also have long-lasting, even permanent, effects on the level and growth rate of output.

**Economic Policy**

The tools available to policymakers to affect the economy over a short horizon (up to a few years) can be divided into fiscal policy and monetary policy. *Fiscal policy* involves decisions about taxes, transfers (such as unemployment insurance, Social Security, or Medicare payments), and government purchases of goods and services. Changes in all of these affect aggregate demand. In the short run, lower taxes or higher transfer payments can lead to higher disposable incomes and thereby boost consumption spending. Government purchases directly affect spending and support aggregate demand.

The effects of tax cuts may depend on the expected duration of the cut. A prominent theory of consumption, the *life-cycle/permanent-income hypothesis*, argues that people choose their consumption to be in line with their expected lifetime resources. To the extent they are able, people keep their consumption constant over drops in income that are expected to be temporary by borrowing or using their savings. Expected temporary increases in income should be saved rather than consumed. Only sustained changes in income would translate into equal-sized changes in consumption. Under this theory,
permanent cuts should permanently raise consumer spending, as consumers would view disposable income as permanently higher, while temporary tax cuts should only be saved. But even temporary cuts could boost spending, however, if people cannot spend as much as they would like or need to due to constraints on their ability to borrow.

Tax changes can also increase the incentives for investment, boosting the investment part of aggregate demand. Some tax changes can also raise aggregate supply by, for example, boosting incentives for labor supply or permanently increasing the incentives to accumulate capital, or by removing distortions. These changes would be expected to augment the long-run growth rate of the economy.

Monetary policy in the United States is conducted by the Federal Reserve Board’s Federal Open Market Committee (FOMC). The FOMC targets a short-term interest rate, the Federal Funds rate, the rate at which banks make overnight loans to one another. This interest rate in turn influences other short-term and long-term nominal and real (inflation-adjusted) interest rates in the economy. In turn, these interest rates affect interest-sensitive components of aggregate demand, such as investment and consumption of durable goods (goods used for long periods, such as refrigerators and cars). These components of demand are especially affected by changes in interest rates because firms often need to borrow to make investments and consumers need to borrow to purchase durable goods. Low real interest rates raise aggregate demand by boosting consumption and investment; high real rates reduce aggregate demand. The effects of monetary policy on output and other real variables will generally be temporary. In the long run, the output effects of the changes in aggregate demand caused by monetary policy largely disappear, leaving effects only on the level of prices.

Research suggests that price stability—a low and stable rate of inflation—may have important effects on aggregate supply and might therefore be conducive to GDP growth. High and widely-varying rates of inflation create substantial amounts of uncertainty about real rates of return, making it difficult for people to make decisions about investment.

Policy Design: Challenges

Policymakers use the elements of monetary and fiscal policy to try to reduce the size of economic fluctuations. Making recessions more moderate helps people by decreasing the amount of unemployment and limiting the amount of real income loss. Restraining expansions to sustainable levels reduces the risks of high inflation. Such policy is often called countercyclical, since the aim of the policy is to moderate the business cycle.

There is a broad consensus on the mechanisms by which fiscal and monetary policy affect the macroeconomy, but less agreement about the timing and
magnitude of their effects. Fiscal policy changes, especially tax policy changes, can work fairly rapidly. For example, a temporary investment incentive can cause firms to move investment forward and undertake projects now instead of in the future. But enacting such a policy through the legislative and executive branches of the government can take time. Monetary policy can be changed more quickly, as the FOMC has eight scheduled meetings per year and can meet more often if economic conditions warrant. In contrast to fiscal policy, however, it takes time for interest-rate changes to affect spending because investment plans take time to adjust to changing financial conditions.

This uncertainty about the duration and magnitude of policy effects means that policymakers considering changes in fiscal or monetary policy must forecast future aggregate demand and supply disturbances and their impact. For example, a policymaker considering a tax cut must think about the state of the economy in six months and beyond, when the tax cut will have its initial impact. The same is true for monetary policy, in which it can take even more time for policy changes to have an impact. Economic forecasting is inherently difficult. It is not easy to determine the state of the economy even six months out. Economic shocks are by definition unexpected. New kinds of shocks can make predictions even more difficult. For example, the oil-price shocks of the 1970s were likely hard to forecast, since such sharp increases had not been observed in the past.

Successful execution of policy requires not only choices about the type and extent of policy, but also about timing and duration. While these are all difficult decisions to make, there is evidence that there has been improvement over time. Technological improvements and economic research have allowed economists and policymakers to get more and better data more quickly on the state of the economy. Economic models have improved as new ideas are developed and some older ideas fail the test of time. Computers have allowed the simulation of more alternative policy scenarios. Policymakers learn from the past.

The following sections compare the behavior of fiscal and monetary policy across recessions and expansions since 1960 to assess differences in the application and effects of policy over time.

Fiscal Policy

The two components of short-run fiscal policy, taxes and government spending (consumption and gross investment), show different behavior across economic expansions. The following subsections consider each in turn.

Taxes

The President signed three major tax bills into law between 2001 and 2003: the Economic Growth and Tax Relief Reconciliation Act (EGTRRA) in June 2001, the Job Creation and Worker Assistance Act (JCWAA) in March 2002,
and the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) in May 2003. A fourth bill, the Working Families Tax Relief Act (WFTRA), signed in October 2004, extends some provisions of the previous bills.

These bills—described in further detail in Chapter 3, *Options for Tax Reform*, and in the 2004 Economic Report of the President—were designed to boost both aggregate demand and aggregate supply. The aggregate demand effects came in several parts. First, tax cuts to individuals raised real disposable income (real income less taxes) and thereby supported consumption. Second, the tax cuts provided incentives for investment, both by lowering tax rates on personal capital income and by increasing the amount of investment allowed to be expensed by businesses. The investment incentives were also designed to have long-term effects on aggregate supply, by increasing the amount of capital accumulation.

The impact of the boost to aggregate demand can be assessed by plotting the growth of real income and real disposable income across expansions (Chart 2-10). During the first three years of an average expansion, disposable income growth is only slightly larger than personal income growth, suggesting that tax policy provides only a small boost. In the 1990s expansion, there was essentially no difference between real income growth and real disposable income.
income growth. Tax policy neither stimulated nor contracted demand. In contrast, the difference has been quite large in the most recent expansion. After-tax income has grown at a much faster rate than before-tax income.

The timing of policy also likely helped stabilize the economy, which was facing multiple contractionary forces in 2000 and 2001. The first tax relief act was passed in the middle of the recession, so households received tax-cut checks at an opportune time. Indeed, the decline in the personal saving rate as a fraction of income indicates that, on average, people were spending, boosting aggregate demand. The incentives for investment also included in the tax relief act were important in light of the particularly sharp drop in investment during the last recession.

**Government Spending (Consumption and Gross Investment)**

Government spending (consumption and gross investment) (Chart 2-11) on average tends to rise as the economy goes into recession and continues to rise during the beginning of the subsequent expansion. In the 1990s expansion, however, government spending flattened out and began to decline. In the most recent expansion, government spending rose at a faster rate than average, providing a bigger boost to aggregate demand. A significant portion of this additional spending is attributable to increased defense and homeland security spending.
Federal government revenues had been affected by both the recession, which had been under way for some time before the terrorist attacks of 9/11, and the subsequent moderate growth of output during the initial phase of the expansion. About half of the change in the Federal government’s fiscal position from a surplus in fiscal year 2001 to a deficit in fiscal year 2004 was attributable to the weaker economy and related factors. Just under a quarter of the decline is attributable to increased spending, principally related to defense and homeland security, and a little more than a quarter of the decline is attributable to the tax cuts.

While it is undesirable to have government deficits, they are sometimes a prudent price to pay for stimulating economic growth. Without aggressive fiscal policy during the most recent recession and recovery, the large number of severe shocks facing the economy might well have caused the recession to have been much longer and deeper than it actually was, possibly further exacerbating the deficit. In contrast, reducing the deficit by reversing the tax cuts would have caused growth to slow even further.

Fiscal policy provided significant stimulus during the most recent recession and recovery through both lower taxes and increased spending. Real government spending increased during the 1990-1991 recession, and then remained at roughly its trough level for the next year before beginning to decline. Hence spending provided only modest stimulus at the beginning of the 1990s expansion.

Monetary Policy

Low real interest rates help stimulate real GDP growth by boosting investment and purchases of consumer durables, thereby raising aggregate demand; high real rates likewise reduce real GDP growth. The Federal Reserve’s principal policy tool, the Federal Funds rate, influences other nominal and real interest rates. When the real (inflation-adjusted) Federal Funds rate is low, monetary policy will be stimulative (sometimes referred to as accommodating or loose policy). When this rate is high, monetary policy will restrain real GDP growth (sometimes referred to as tight monetary policy). “Low” and “high” are both relative terms. In principle, it would be best to compare the real Federal Funds rate with whatever interest rate would make policy neither loose nor tight. This rate can be thought of as the long-run equilibrium rate the economy would tend to move toward as the effects of economic shocks wear off. In practice, this equilibrium rate is not observed. But over long periods of time, the economy tends to drift back to its long-run equilibrium; hence the average level of the real Federal Funds rate over a long period of time can provide a useful, though necessarily imperfect, approximation for the equilibrium rate.
In Chart 2-12, the solid line plots the nominal Federal Funds rate; the dots plot the expected real Federal Funds rate, obtained by subtracting a biannual survey measure of inflation expectations (the Livingston survey) from the nominal rate. The chart suggests that the real Federal Funds rate tends to fall during recessions and rise during expansions—exactly what would be expected from countercyclical monetary policy. But the timing of interest-rate changes relative to the recessions and expansions has changed over time. First, declines in the real Federal Funds rate have occurred longer before the beginning of the last two recessions than before the other recessions after 1960. In some prior recessions, real rates began to decline only after the recession began. Since it can take time for real interest rate changes to affect spending, earlier actions by the Federal Reserve can reduce the depth of recessions. Second, real rates have remained low during the last two expansions for longer than during previous expansions. The real Federal Funds rate has been well below its long-run average since the beginning of 2001. This would be expected to have provided additional stimulus at the beginning of the recovery and into the expansion. During the course of 2004, the Federal Reserve raised its target for the nominal Federal Funds rate from 1 percent to 2.25 percent. Although these increases in the nominal rate also meant an increase in the real rate, the real rate still remains well below its long-term average.
Fiscal policy played an especially important role in moderating the last recession and in supporting the subsequent economic expansion. During the most recent set of interest-rate cuts, the nominal Federal Funds rate was reduced to 1 percent, possibly leaving the Federal Reserve with reduced ability to provide additional stimulus. The Federal Reserve could have used other means of further easing policy. For example, it could have tried to target a long-term interest rate by buying or selling long-term bonds. Since long-term rates remained well above zero, such a policy would have given the Federal Reserve additional room to carry out further easing. The efficacy of this and other nontraditional policy methods is unproven.

In sum, monetary and fiscal policy together likely explain a significant part of the relative stability of the economy over the last two recessions and expansions (see Box 2-1 for further discussion).

**Box 2-1: Is the Economy More Stable?**

The relative moderation of the last two business cycles raises the possibility that the economy may be becoming more stable generally. In the 60 years since World War II, a visible shift in the volatility of the growth rate of real GDP occurred in the early 1980s (Chart 2-13). Does this indicate a change in the nature of the business cycle, and if so, what caused the change?

**Chart 2-13 Real GDP Growth**
Real GDP growth has become less volatile over the past 20 years.
Percent at an annual rate

Source: Department of Commerce (Bureau of Economic Analysis).
Box 2-1 — continued

A variety of reasons have been offered to explain this shift. One possibility is that more active, and more effective, stabilization policy had moderated economic fluctuations. Another is that the economy has had a run of good luck; it has not experienced the same kinds of macroeconomic disturbances seen in earlier years, such as the oil-price shocks seen in the 1970s and 1980s. Events of the past few years, such as the terrorist attacks of 9/11 and the bursting of the high-tech bubble of the 1990s, however, were significant shocks. The decline in volatility could also be largely attributable to better inventory management. This could be the result of the adoption of “just in time” methods, in which goods are manufactured and supplied on demand. Yet another possibility is that an increasing proportion of the economy is now in the service sector, which has tended to be more stable than the goods-producing sector. It is likely that all of these effects have worked together to reduce volatility.

Conclusion

Since the late 1980s, recessions and the initial stages of expansions have become more moderate. Some of this change reflects the general positive relationship between the size of recessions and size of expansions, which is caused at least in part by the relationship between firms’ abilities to invest and the state of economic activity (the “financial accelerator”). The recent recessions and expansions have been especially moderate, suggesting the economy has become more stable in general. Part of this stability is likely attributable to more active and timelier stabilization policy.