
The Economic Outlook

The growth of economic activity—as measured by real (inflation-adjusted) gross domestic product—is likely to slow from its rapid pace of recent years to about 2½ percent this calendar year and 3½ percent next year (see Table 2-1 and Figure 2-1). Spending by consumers and investment by businesses slowed late last year in response to higher interest rates in 1999 and early 2000 and lower expectations about future business conditions (reflected in last year’s drop in stock prices and tightening of standards and terms for borrowing by businesses). Although in early January the Federal Reserve Board responded to the slowdown in growth by lowering the federal funds interest rate, spending by consumers and businesses is likely to remain weak this year. However, lower interest rates will set the stage for spending to grow more quickly next year.

The rate of inflation, as measured by the growth of the consumer price index (CPI), is expected to decline from 3.4 percent in 2000 to around 2.8 percent in 2001. That projected decrease reflects the Congressional Budget Office’s view that oil prices will fall somewhat from last year’s level, although underlying inflationary pressures from the tight labor market will remain.

Significant uncertainty surrounds that short-term forecast. For various reasons, economic conditions in the next two years could be much worse or better than CBO anticipates:

- o The primary negative risk is that the current slowdown might turn into a recession. Although forecasters widely anticipated that eco-

omic activity would slow, the deceleration has been surprisingly rapid. Reports of rising loan losses at commercial banks and defaults on high-risk bonds, combined with the drop in stock prices, have heightened fears that financial markets might severely reduce the supply of credit and capital and choke off the economic expansion. In addition, consumers have become less optimistic about the future, in part because of the decline in the stock market. The possibility of further slowing is heightened by the weakness evident in recent economic data, such as those showing slower growth of retail sales and employment. Although those developments must be watched carefully, they do not as yet constitute a strong reason to expect a recession.

- o In the other direction, the economy might continue to grow rapidly without an increase in inflation, rather than slowing as CBO forecasts. In recent years, the unexpected endurance of the expansion has continually surprised analysts and has proved to be the most significant source of error in their economic forecasts.

- o Another source of risk to CBO’s short-term forecast is that inflation might rise. Productivity growth—which has been rapid and kept production costs low—could slow more than generally anticipated, and businesses could pass the resulting cost increases on to customers in the form of higher prices. In that case, rising inflation would be coupled with slowing growth. Alternatively, inflation might start to rise because of continued rapid growth of GDP and

increasing wage pressures from the labor market, which has been unusually tight. Or the dollar could fall from its current high level, leading the prices of imported goods to rise and temporarily boosting inflation. Whatever the cause, any further rise in inflation increases the possibility that the Federal Reserve will raise short-term interest rates, with the attendant risk of a recession next year.

Those risks are less important for the economic outlook over the next 10 years as a whole. CBO anticipates that growth of real GDP will average about

3 percent over the 2001-2011 period. CPI inflation is projected to average 2.6 percent during that period, reflecting CBO's assumption about what level of inflation would be consistent with Federal Reserve policy. Given the projection of continued stable inflation, interest rates are expected to remain at levels similar to those seen in the second half of the 1990s (see Figure 2-1).

The major uncertainty in those medium-term economic projections is the growth rate of potential GDP (defined as the highest level of output that could persist without spurring higher inflation). CBO

Table 2-1.
CBO's Economic Projections for Calendar Years 2001-2011

	Estimated 2000	Forecast		Projected Annual Average	
		2001	2002	2003-2006	2007-2011
Nominal GDP (Billions of dollars)	9,974	10,446	11,029	13,439 ^a	17,132 ^b
Nominal GDP (Percentage change)	7.3	4.7	5.6	5.1	5.0
Real GDP (Percentage change)	5.1	2.4	3.4	3.1	3.1
GDP Price Index (Percentage change)	2.1	2.3	2.1	1.9	1.9
Consumer Price Index ^c (Percentage change)	3.4	2.8	2.8	2.6	2.5
Unemployment Rate (Percent)	4.0	4.4	4.5	4.7	5.2
Three-Month Treasury Bill Rate (Percent)	5.8	4.8	4.9	4.9	4.9
Ten-Year Treasury Note Rate (Percent)	6.0	4.9	5.3	5.6	5.8
Tax Bases (Percentage of GDP)					
Corporate profits ^d	9.4	8.9	8.5	8.2	8.0
Wages and salaries	47.8	48.2	48.2	48.2	48.0

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Department of Labor, Bureau of Labor Statistics; Federal Reserve Board.

NOTES: Percentage changes are year over year.

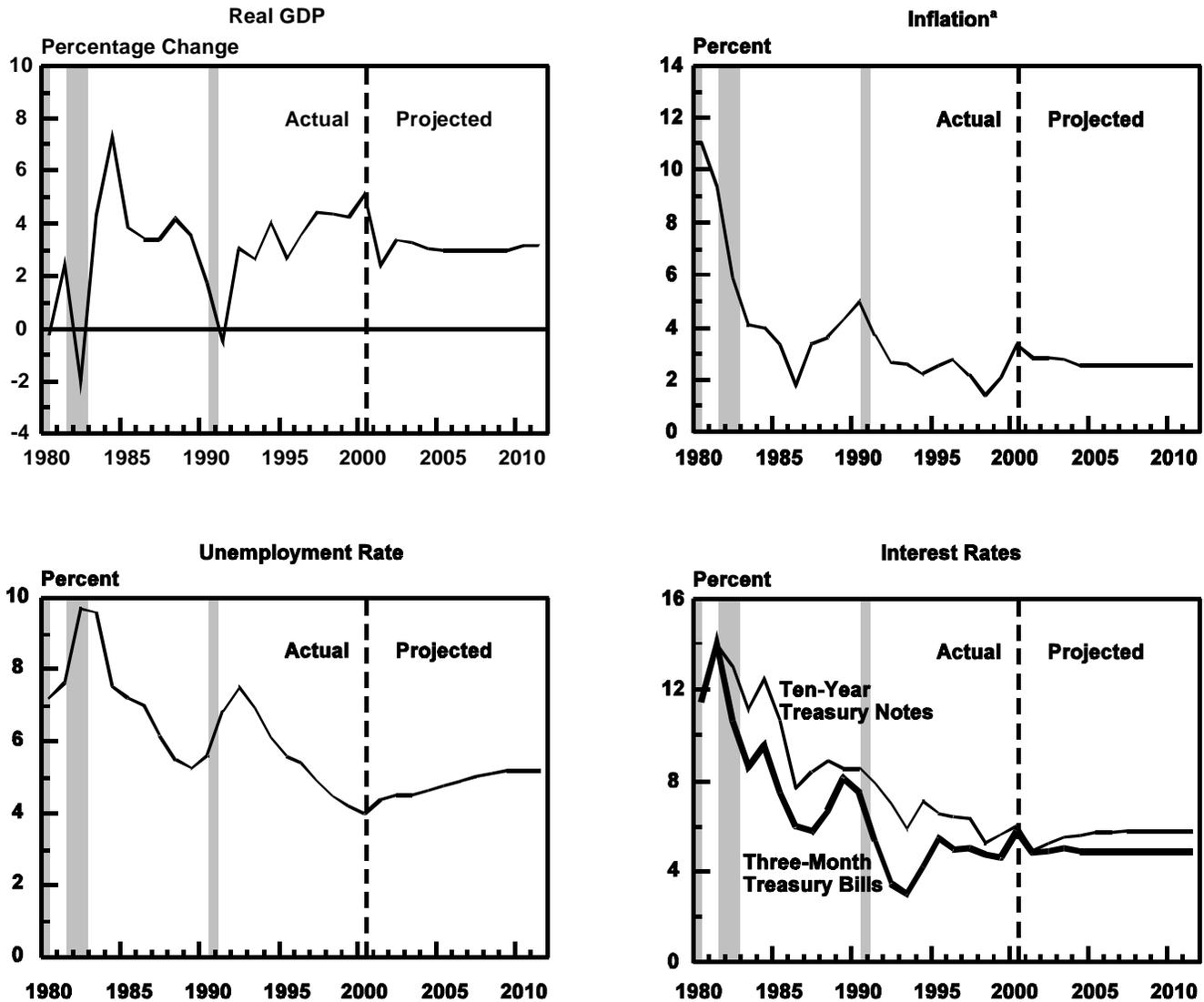
Annual economic projections for calendar years 2001 through 2011 appear in Appendix E.

- a. Level of GDP in 2006.
- b. Level of GDP in 2011.
- c. The consumer price index for all urban consumers.
- d. Corporate profits are book profits.

has raised its projections of both potential and actual GDP over the past few years in response to the investment boom of the late 1990s, evidence of the economy's faster growth of productivity, and changes in the data used to calculate GDP. That rise parallels changes made by private-sector forecasters and the Clinton Administration (see Table 2-2). Their and CBO's upward revisions were mostly driven by the

increasing belief that acceleration in the growth of information technology—which was a major force behind the investment boom of the late 1990s—will continue to stimulate investment over the next decade. However, economists are uncertain about the degree to which information technology will continue to support economic growth over the next 10 years.

Figure 2-1.
The Economic Forecast and Projections



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Department of Labor, Bureau of Labor Statistics; Federal Reserve Board.

NOTE: All data are annual values; percentage changes are year over year.

a. The consumer price index for all urban consumers, with current methodology applied to historical price data (CPI-U-RS).

Table 2-2.
Change in Projections of Growth Over the Past Five Years (By calendar year)

Date Projection Was Published ^a	Period Covered by Projection	Average Annual Growth Rate of Real GDP (Percent)		
		CBO	<i>Blue Chip</i>	Clinton Administration
2001	2001-2010	3.0	3.3	3.1
2000 ^b	2000-2009	2.8	2.7	2.8
1999 ^b	1999-2008	2.3	2.4	2.3
1998	1998-2007	2.2	2.3	2.3
1997	1997-2006	2.1	2.3	2.3

SOURCES: Congressional Budget Office; Aspen Publishers, Inc., *Blue Chip Economic Indicators*; Office of Management and Budget.

- a. CBO and Clinton Administration projections were published in January and completed in November or December of the previous year. *Blue Chip* publishes long-term projections twice a year, in March and October; the projections shown here are those published in October of the previous year.
- b. About 0.3 percentage points of the change between these projections stemmed from a benchmark revision to gross domestic product during 1999 that, for the first time, included software in GDP.

The Growth of the Economy's Potential to Produce

The performance of the U.S. economy in the past five years has been extraordinary. Real growth, which averaged 2.8 percent a year during the 1974-1995 period, rose to an average of 4.4 percent from mid-1995 to mid-2000. The unemployment rate fell to 30-year lows. And in a departure from historical patterns, inflation eased despite the low unemployment.

That confluence of events stemmed primarily from an unexpected increase in the growth of the economy's underlying ability to produce goods and services. The growth of labor productivity accelerated from a trend rate of 1.5 percent a year during the 1974-1995 period to 2.9 percent (see Figure 2-2). An important factor behind that recent surge was the acceleration of investment in information technology (IT), which appears likely to continue to contribute to the underlying growth rate of the economy in the years ahead.

Other important developments also played a role in the economy's outstanding performance over the past five years. Changes in corporate behavior, particularly increased efforts to reduce costs (which

were facilitated by the IT revolution), appear to have helped raise the sustainable growth rate of productivity. Weakness in many foreign economies, coinciding with a period when inflationary pressures in the U.S. economy were building, kept the prices of imports low, dampening inflation. The weakness abroad also encouraged foreigners to invest in the United States. And massive improvement in the federal budget reduced the government's demand for credit and thus made more funds available for investment.

The Information Technology Boom

Recent progress in information technology has contributed to the increase in productivity growth in various ways. The most visible and clearly quantified way involves the manufacturing of IT equipment itself. The rate of technical change in that sector is reflected in the quality-adjusted price index for computers and related equipment. That index has been declining for many years because of ongoing improvements in productivity, but it fell more rapidly between 1995 and 1999 (see Figure 2-3). Although some of that faster decline stemmed from temporary market developments, CBO anticipates continued rapid productivity gains in the production of IT equipment.

Besides those gains, information technology has helped businesses lower their costs of production. Significant cost savings from IT investments are hard to quantify precisely, but numerous anecdotes suggest that savings are greatest in business operations that involve intensive handling, disseminating, or archiving of information or that require constant monitoring of data—operations such as purchasing, delivery, and inventory management.

The unusually large declines in IT prices, combined with the clear benefits of IT investment, resulted in a surge in such investment by businesses. Indeed, the investment boom of the late 1990s was led by higher spending on new software and computing and communications equipment (see Figure 2-4).

Changes in Corporate Management and Culture

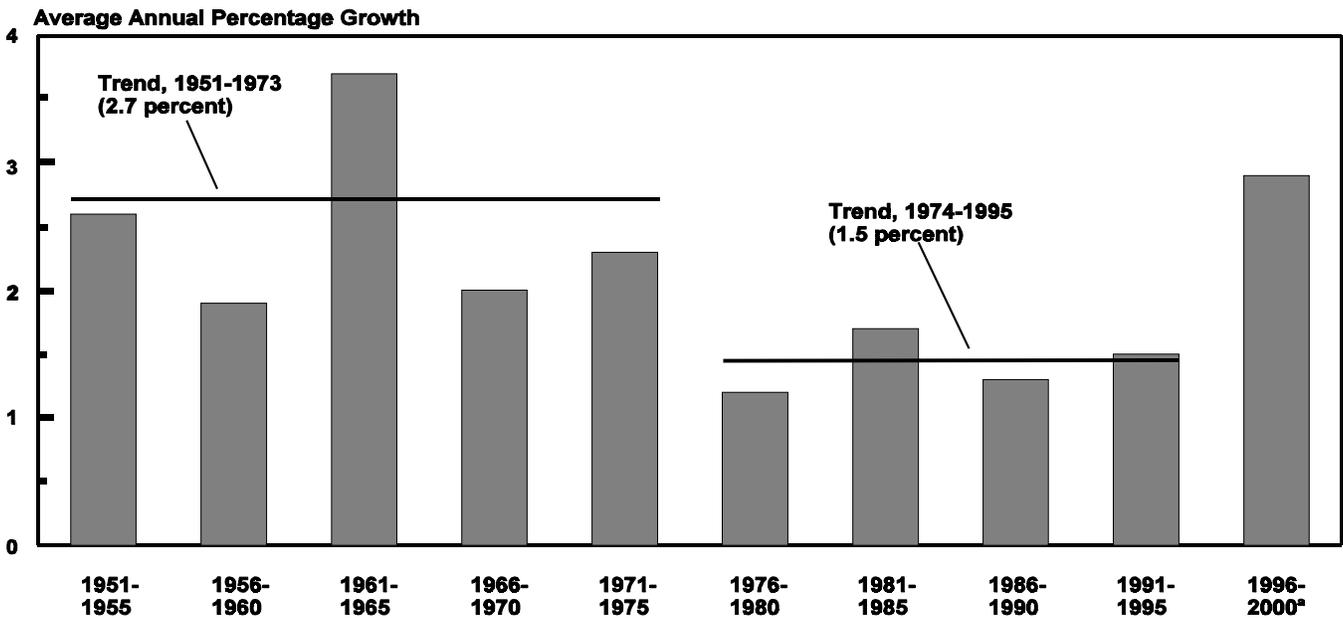
Advances in information technology, coupled with increased globalization, have created a more competi-

tive environment for businesses, causing them to significantly change the way they behave. In particular, increased competition has forced firms to sharpen their focus on controlling production costs. Rather than try to pass on higher costs to consumers or improve their profits by raising prices, companies appear more ready and willing to reduce costs by embracing new technology quickly, undertaking large investments, and making changes in their organizational structures that increase efficiency. Although businesses have always tried to lower costs, the IT revolution appears to have given them both the additional means and the need to focus more attention on cost-cutting innovations.

Weakness in the Rest of the World

Weakness in other countries in the second half of the 1990s helped the U.S. economy, on balance, by providing financial capital and a low-cost source of imports. Many foreign economies—notably Asian ones—were plagued by economic problems during that

Figure 2-2.
Labor Productivity in the Nonfarm Business Sector



SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

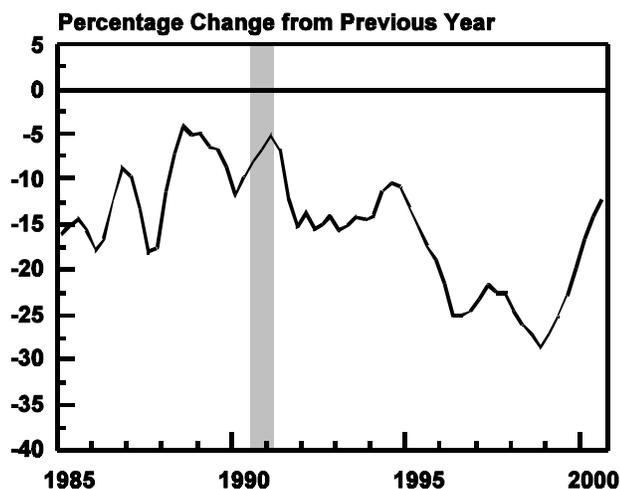
a. Includes CBO's estimate for the fourth quarter of 2000.

period. Capital flowed to the United States seeking higher risk-adjusted rates of return, and as a result, the dollar strengthened. That effect was compounded by the flight of capital to U.S. markets in search of a safe haven during the Asian crisis. Those inflows of capital stimulated investment by making more funds available.

In addition, the combination of a strong dollar and excess capacity abroad held down prices of imports and overall inflation through 1999. Prices of imported goods (excluding petroleum and computers) fell by an average of 2.3 percent per year between 1996 and 1999 after increasing by an average of 3.0 percent per year in the previous 10 years (see Figure 2-5). Lower import prices reduce overall inflation in two ways: directly through the share of imported goods and services in the price indexes used to measure inflation, and indirectly through increased foreign competition that limits the ability of U.S. producers to raise prices.

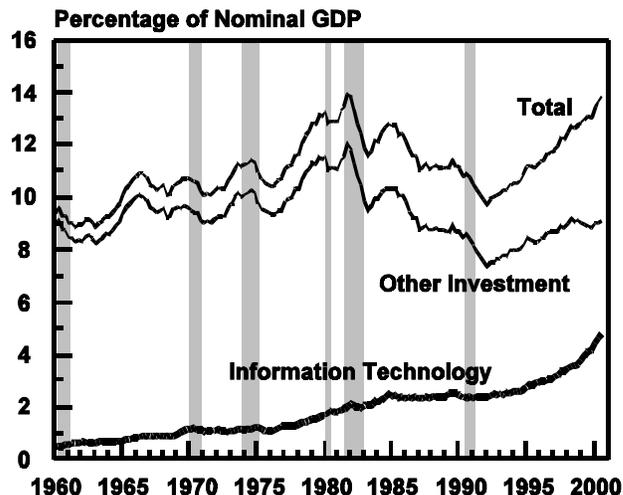
The weakness in world economic activity also reduced prices for commodities (such as grains, metals, and crude oil). Petroleum prices eased for most of the second half of the 1990s before starting their run-up in 1999.

Figure 2-3.
Prices for Computers Bought by Businesses



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

Figure 2-4.
Business Fixed Investment



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

Improvement in the Federal Budget

Another factor that contributed to the favorable economic performance of the past five years was the improvement in the federal budget, which added to national saving, making more funds available for private investment. The budget moved from a \$164 billion deficit in 1995 to a \$236 billion surplus in 2000. Part of that improvement stemmed from policy changes that increased revenues in the 1990s and restrained spending when surpluses emerged. But the bulk of the improvement occurred because economic developments spurred phenomenal growth in revenues.

CBO's Medium-Term Projections

CBO projects that real GDP will grow at an average rate of 3.0 percent in the medium term (defined as the 2001-2011 period). That rate is significantly higher than the 2.7 percent that CBO projected last July.¹ The faster growth rate results from a change in

1. Congressional Budget Office, *The Budget and Economic Outlook: An Update* (July 2000).

CBO's method of calculating the contribution of capital to growth, an upward revision in the official data on investment for the past three years, and higher projected levels of investment. Inflation in the CPI is projected to average 2.6 percent, and the unemployment rate is expected to average 4.8 percent.

Growth of Potential GDP

Potential GDP—the highest level of output that the U.S. economy can produce given its labor force, capital stock, and technology without generating inflationary pressures—is the basis for CBO's medium-term projections of real GDP. Potential GDP is projected to grow at an average rate of 3.3 percent a year through 2011 (see Table 2-3).

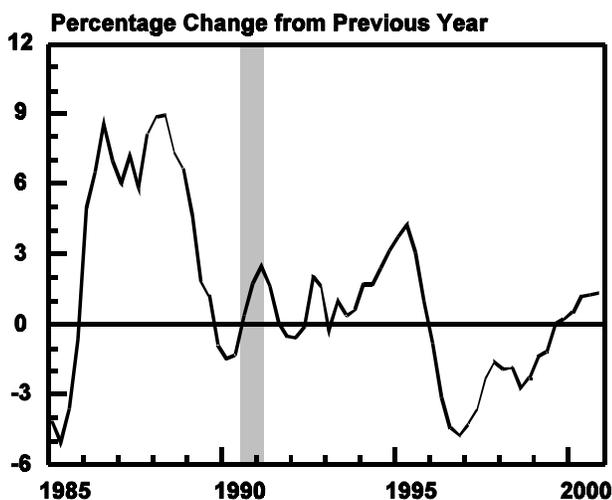
By CBO's estimate, the annual growth rate of potential GDP increased from 2.9 percent between 1982 and 1995, on average, to about 3.4 percent between 1996 and 2000. Much of that acceleration can be attributed to an increase in the growth of the capital input (a measure of the flow of services provided by the stock of capital). The contribution of the capi-

tal input to the overall growth of potential output in the nonfarm business sector rose to 1.5 percent in the 1996-2000 period from 0.9 percent in the 1982-1995 period.

Potential GDP accelerated more in the past five years, however, than can be explained simply by additional capital. The remaining increase is assumed to be an increase in total factor productivity (TFP).² CBO estimates that the underlying trend for TFP (known as potential TFP) in the nonfarm business sector grew at an average rate of 1.5 percent for the past five years, up from its average of 1.1 percent growth for the 1982-1995 period. The growth of actual TFP escalated further in the past year and a half, but that surge is projected to be reversed as the economy reverts to its potential level, and thus the surge has virtually no effect on potential TFP (see Figure 2-6).

Although much of the increase in the growth of potential GDP in the second half of the 1990s is carried forward in CBO's projections, the growth of potential GDP is slower between 2006 and 2011 than in the past five years. That slowing is primarily caused by slower growth in total hours worked, reflecting a corresponding reduction in the growth of the working-age population, and the stabilization of the overall rate of labor force participation.³

Figure 2-5.
Prices for Imports, Excluding Petroleum
and Computers



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

The Increase in the Capital Input. The recent investment boom raised the growth of the capital input to about a 5.0 percent pace in the past five years from 3.1 percent in the previous 15 years, adding significantly to the growth of potential GDP. That increase resulted not only from greater capital investment but also from an increase in the share of investment devoted to information technology. A dollar's worth of IT investment contributes more to output per year than other types of investment; IT equipment has a shorter service life than other types of capital, on average, so to be profitable, its contribution to production per year of service life must be higher (see Box 2-1 on page 36). The shift in the composition of in-

2. The measure of TFP discussed in this report is an estimate from CBO's growth model. See Congressional Budget Office, *CBO's Method for Estimating Potential Output*, CBO Memorandum (October 1995).

3. See Congressional Budget Office, *The Budget and Economic Outlook: An Update* (July 2000), Appendix A.

vestment toward IT capital raises the growth rate of the capital input. It also implies, of course, that the capital stock depreciates faster and that a greater share of earnings in the future will be devoted to replacing depreciated equipment.

The Rise in the Growth of Potential TFP. Two quantifiable and long-lasting factors appear to explain most of the 0.4 percentage-point increase in the growth rate of potential total factor productivity during the 1996-2000 period.

Table 2-3.
Key Assumptions in CBO's Projection of Potential GDP (By calendar year, in percent)

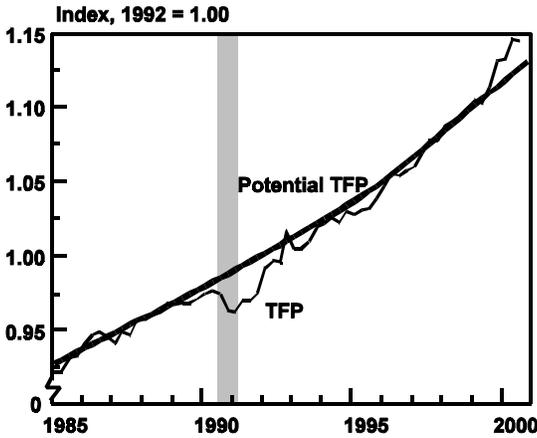
	Average Annual Growth Since 1951					Projected Average Annual Growth Through 2011		
	1951-1973	1974-1981	1982-1995	1996-2000	Total, 1951-2000	2001-2005	2006-2011	Total, 2001-2011
Overall Economy								
Potential Output (GDP)	3.9	3.2	2.9	3.4	3.4	3.5	3.2	3.3
Potential Labor Force	1.6	2.5	1.4	1.2	1.7	1.1	1.0	1.0
Potential Labor Force Productivity ^a	2.2	0.7	1.4	2.2	1.8	2.4	2.2	2.3
Nonfarm Business Sector								
Potential Output	4.0	3.6	3.1	4.0	3.7	4.1	3.6	3.8
Potential Hours Worked	1.3	2.2	1.6	1.4	1.5	1.2	1.0	1.1
Capital Input	3.7	4.3	3.1	5.0	3.8	5.8	4.8	5.2
Potential Total Factor Productivity	2.0	0.8	1.1	1.5	1.5	1.5	1.5	1.5
Potential TFP Excluding Adjustments	2.0	0.8	1.1	1.1	1.4	1.1	1.1	1.1
TFP Adjustments	0	0	0	0.4	0	0.4	0.4	0.4
Computer quality	0	0	0	0.2	0	0.2	0.2	0.2
Price measurement	0	0	0	0.1	0	0.2	0.2	0.2
Temporary adjustment ^b	0	0	0	0.1	0	0	0	0
Contributions to Growth of Potential Output (Percentage points)								
Potential hours worked	0.9	1.5	1.1	1.0	1.1	0.9	0.7	0.8
Capital input	1.1	1.3	0.9	1.5	1.1	1.7	1.4	1.6
Potential TFP	<u>2.0</u>	<u>0.8</u>	<u>1.1</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>
Total Contributions	4.0	3.6	3.1	4.0	3.7	4.1	3.6	3.8
Memorandum:								
Potential Labor Productivity ^c	2.7	1.4	1.5	2.6	2.2	2.8	2.6	2.7

SOURCE: Congressional Budget Office.

NOTE: CBO assumes that the growth rate of potential total factor productivity changed after the business-cycle peaks of 1973 and 1981 and again after 1995.

- a. Potential GDP divided by the potential labor force.
- b. The temporary adjustment raises the growth of potential TFP during the 1996-2000 period to help make the estimate of potential GDP more compatible with the observed weakness of inflation. That adjustment is considered transitory, in the sense that although it has a permanent effect on the estimated *level* of potential TFP, its effect on the growth rate of TFP is temporary.
- c. Estimated trend in the ratio of output to hours worked in the nonfarm business sector.

Figure 2-6.
Total Factor Productivity



SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

- o About 0.2 percentage points of the increase can be traced to productivity gains in the production of IT equipment (the line labeled “computer quality” in Table 2-3). CBO assumes that their contribution to the trend growth of TFP will continue for the next 10 years.
- o Another 0.1 percentage point of the increase stems from a definitional change in the way prices were measured for some of the categories of GDP in the 1990s. The Bureau of Economic Analysis (BEA) adopted price indexes for hospital services and for physicians’ services from the Bureau of Labor Statistics’ producer price index to use in its GDP data starting in 1993 and 1994, respectively. The changes created a discontinuity in the growth rates for those series, as the new price indexes showed much slower rates of increase than the old indexes. Those and other, smaller changes to price indexes that the BEA was not able to carry back in benchmark revisions of the GDP data resulted in a slight discontinuity in the measures of real GDP and productivity between the 1996-2000 period and earlier years. The effect of the new measurement method on real growth is carried forward in CBO’s calculations of potential GDP.

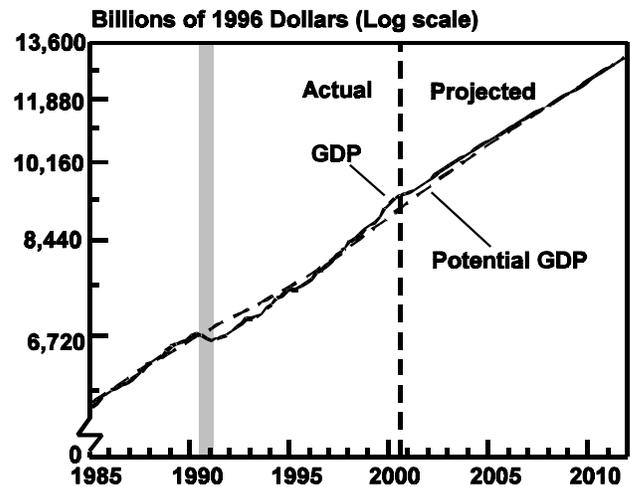
In CBO’s medium-term projections, the growth rate of potential total factor productivity through 2011 matches that of the 1996-2000 period (see Table 2-3).

Growth of Real GDP

CBO’s projection of actual GDP growth is slightly lower than its projection of potential GDP growth because CBO assumes that the economy is still operating at an unsustainably high rate of resource use, despite the slowdown at the end of 2000. As a result, GDP is projected to grow at a 3.0 percent rate, on average, even as potential GDP grows at a 3.3 percent rate. The slower growth of GDP brings its projected level down to that of potential GDP during the medium term (see Figure 2-7).

By its construction, that projection allows for the likelihood that a recession will occur sometime in the next 10 years. It also incorporates the probability of above-trend growth. As long as the economy is not buffeted by external shocks to prices (such as occurred in 1974 and 1979), gross domestic product is expected to be above its estimated potential during booms and below its estimated potential during recessions. On average over the business cycle, GDP should be equal to potential GDP.

Figure 2-7.
Gross Domestic Product



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

Inflation and Unemployment

Inflation averages 2.6 percent in the medium term as measured by the change in the consumer price index and 2.0 percent as measured by the change in the GDP price index (a summary of the prices of all goods and services that make up GDP). CBO's projections for inflation reflect an assumption about the rate of inflation consistent with Federal Reserve policy.

CBO assumes that the current unemployment rate, although it has been accompanied by only a slight increase in the inflation rate, is too low to be sustained for a long period without causing inflation to rise. The recent surge in productivity growth appears to have temporarily lowered the rate of unemployment that is compatible with stable inflation, pri-

marily because it may take several years for the process of setting wages to adjust to a sudden change in productivity growth. Consequently, it is likely that the growth rate of labor costs will eventually catch up to the increase in productivity growth, putting downward pressure on profits and upward pressure on inflation. That inflationary pressure is likely to occur even if the growth of labor productivity remains fairly high. CBO's projections assume that an unemployment rate averaging close to 5 percent is compatible with the projection for CPI inflation.

Interest Rates

CBO projects interest rates by adding the projection for CPI inflation to a projection for inflation-adjusted interest rates. The real rate on three-month Treasury

Box 2-1.

A Change in How CBO Calculates the Capital Input in Its Growth Model

The Congressional Budget Office uses a neoclassical growth model to project the level of real gross domestic product 10 years ahead. The model tries to explain the historical trends in the growth of real GDP by estimating the contributions of two factors of production, labor and capital, and a residual called total factor productivity (TFP). CBO estimates the underlying trend in real GDP (called potential GDP) by estimating trend lines through the historical pattern of ups and downs in labor hours and TFP. CBO bases its estimate of the capital input on the actual capital stock. That modeling approach is useful for estimating the contribution each factor makes to the growth of potential GDP, but measuring the inputs is often difficult.

The measurement of the capital input has been a particular problem in recent years. The difficulty stems from the heterogeneity of capital goods—different types of capital have different levels of productivity. For example, an electric utility turbine has a long service life. Therefore, its rate of depreciation is low, and the part of its value that it contributes to output each year—the capital input—is also low. In contrast, a computer depreciates quickly, having a very short service life. Computers must be productive enough to pay for that high rate of depreciation and thus must provide a large capital input relative to their cost. If

they did not, buying computers would ultimately undermine businesses' profitability.

In fact, the primary uncertainty now about the contribution of capital to the growth of potential GDP concerns computers. Estimates of computers' contribution to output vary over time and differ among analysts. Indeed, the latest estimates of capital input from the Bureau of Labor Statistics (BLS) and some private forecasters show faster growth during the late 1990s than CBO's estimate from July 2000 did, largely because those analysts place a heavier weight on computers when they construct their measures of capital input. Because recent data and revisions to older data lend further support to the weighting schemes used by those other forecasters, CBO has raised its estimate of the contribution of the computer capital stock to output. The change aligns CBO's estimate with those of BLS and private forecasters. The revisions to older data plus the greater weight on computers raised the growth of the capital input by about 1.2 percentage points over 10 years. That revision caused an offsetting change in CBO's estimate of TFP over history. It did not significantly alter the trend in TFP, however, so potential TFP was almost unaffected. The net result is an upward revision of 0.3 percentage points to the projection for growth of potential GDP.