ECONOMIC AND ACCOUNTING ANALYSES

1. ECONOMIC ASSUMPTIONS

Introduction

The economic expansion is about to enter its sixth year. Too often in the past when expansions have reached this point, or even sooner, the economy has begun to overheat, pushing up inflation and interest rates, and ultimately bringing on a recession. In contrast, the policy decisions of the last three years have enabled this expansion to attain an elusive goal—a "soft landing" in which economic growth has slowed to a sustainable rate without triggering an increase in unemployment.

The "soft landing" of 1995 is the culmination of three years of very successful macroeconomic policy. Over this period, jobs have increased and unemployment has fallen, while at the same time, inflation has been low and relatively stable. Interest rates have fluctuated, but long-term rates are as low as at any time in recent memory. Looking ahead, the Administration expects economic growth to continue at a moderate rate for the foreseeable future.[1] Employment is projected to expand sufficiently to absorb new workers, keeping the rate of unemployment stable. Meanwhile, the Administration expects inflation to continue at a low, relatively constant rate, and interest rates to decline further as the budget is brought into balance.

The Omnibus Budget Reconciliation Act of 1993 put the Federal budget deficit on a downward track that helped to reduce long-term interest rates, which in turn helped spark the revival in the economy. The Administration's current budget proposals would build on that success and cap it with a balanced budget. The Federal Reserve has helped to support these needed fiscal actions by pursuing a policy to control inflation, while also showing that it is willing to reduce interest rates when that is appropriate.

This chapter begins with a review of recent economic and policy developments. With this as background, it then presents the Administration's economic assumptions. The assumptions call for a continuation of trends already evident in the economy for most of the major economic variables. They offer a reasonable and prudent basis for making budget projections.

Two important changes in the statistics on which this forecast is based are also described in this chapter. First, real gross domestic product (GDP) is now measured on a chain-weighted basis in the National Income and Product Accounts. This is reflected in the budget projections of real GDP and the aggregate measure of inflation. Second, anticipated changes in the calculation of the Consumer Price Index (CPI) will slow its growth, and that of related measures of price inflation.

The chapter compares the Administration's economic assumptions with those of the Congressional Budget Office (CBO) prepared at about the same time (December 1995). Although there are some differences in the underlying policy assumptions on which the two forecasts are based, they are quite similar, and the differences between them are well within the normal range of forecasting error.

The chapter also includes an analysis of the impact of changes in the economic assumptions since last year's budget on the projected deficit, and it concludes with estimates of the sensitivity of the budget to changes in economic assumptions.

Recent Developments

1993—Enacting a Responsible Fiscal Policy: The passage of the Omnibus Budget Reconciliation Act of 1993 (OBRA93) put fiscal policy on a sounder footing and created the preconditions for a healthy expansion. The 1992 deficit was $290 billion. Since then, the deficit has fallen for three straight years, bringing it down to $164 billion in 1995. That is just 2.3 percent of GDP, less than half the level in 1992. The improvement in the deficit is traceable to both improvement in the economy and to policy changes, of which the President's economic program was far and away the most important. The Administration estimated that OBRA93 would reduce the deficit during the five years 1994–98 by a cumulative total of $505 billion. During the first two years alone, it cut deficits by about $130 billion. The economic program has also contributed indirectly to the reduction in the deficit by strengthening the pace of the economic recovery.

Stabilizing Inflation: Most previous postwar expansions have ended because inflation accelerated, forcing a policy correction. The best way to avoid the need for such measures is to act before inflation becomes a problem. That is just what monetary policy did during 1994. Entering that year, inflation was under control; the CPI had only increased 2.7 percent over the preceding 12 months. However, 1993 had seen unemployment fall by almost a full percentage point as real economic growth accelerated, and the economy's momentum was clearly pointing towards further large gains in 1994. Those gains were realized, as 1994 became one of the best years for overall economic performance since the end of World War II. During 1994, 3.5 million new jobs were created, and the unemployment rate was pulled down by another full percentage point. These were welcome developments; but if the economy had continued to expand at that rate, shortages of labor

[1] Beyond the next year or two, the Administration does not attempt to project the economy's cyclical patterns. The longer term economic projections used for the Budget and summarized here are best thought of as forecasts of average experience expected to be achieved over a period of several years.

and plant capacity would have been sure to emerge, carrying with them a high risk of accelerating price increase.

To avoid that risk, the Federal Reserve raised short-term interest rates in several stages during 1994. The intention was to slow growth and stabilize unemployment at its new lower levels to avoid the inflation risks that faster growth would generate. While the Fed was acting to raise short-term rates, investors in the financial markets were pushing up long-term rates, anticipating future inflation and the possibility of further Fed tightening to choke it off.

The effect of these developments was seen in 1995. The higher interest rates cooled off demand in the economy's interest-sensitive sectors, such as housing and consumer durables. In 1995, real GDP rose 1.4 percent, down from a growth rate of 3.5 percent during the previous year.[2] Although growth slowed, the economy continued to generate new jobs at a healthy rate, albeit less rapidly than in 1994; and the unemployment rate did not increase. Payroll employment rose by 1.7 million in 1995 and the unemployment rate averaged 5.6 percent for the year, which was its lowest level since 1990.

The slower growth of economic activity and employment was accompanied by continued moderation in wages and prices, exactly what the Fed had been hoping to achieve when it tightened policy in 1994. The most meaningful measure of overall labor compensation, the Employment Cost Index, rose 2.9 percent in 1995—virtually the same increase as in the previous year.

Compensation costs were also held down by a significant deceleration in employee benefit costs. Health insurance premiums, which had been rising at double-digit rates earlier in the decade, were brought firmly under control. The spread of innovations in health care delivery helped to bring about this moderation. Although slower growth of employee health care costs shows up in the aggregate statistics as a decline in the rate of increase in compensation, the long-run effect is likely to be an increase in workers' take-home pay. Most studies reveal that employee benefits are paid for by workers through lower cash wages. A reversal of the trend towards increased benefit costs should strengthen cash wages in the long run.

Moderation in labor markets was mirrored in the product markets. At the beginning of 1995, the capacity utilization rate in manufacturing had reached nearly 85 percent, a level that in the past had initiated an acceleration of price increases. By spring, slower growth caused the operating rate to return to a range of around 82 percent, a level associated in the past with stable price inflation.

Reflecting this moderation, the CPI rose only 2.5 percent over the 12 months of 1995, slightly less even than in 1994. The underlying rate of inflation, the CPI excluding food and energy, was also well-behaved, rising 3.0 percent during 1995. The inflation rate over the three years 1993–1995 was the best since the mid–1960s.

Sustaining the Momentum of the Expansion: As it became clear that inflation was under control and likely to remain so for some time, the Federal Reserve gradually relaxed its previous tightening. Having achieved the desired "soft landing", the Federal Reserve took steps to make sure the economy would not stall out. It reduced the Federal funds rate by one-quarter percentage point in July and in December of 1995, and again in January of 1996. Judging from the futures market, the financial community anticipates a further reduction of about one-quarter percentage point by this summer.

While the Federal Reserve was lowering short-term rates last year, the financial markets were lowering long-term rates even more. The inflation fears that had troubled the markets in 1994 were succeeded in 1995 by the expectation that inflation would remain subdued. Moreover, bipartisan agreement that the budget should be balanced in the coming years helped further reduce long-term interest rates. From the end of 1993 to the beginning of 1996, long-term interest rates fell more than two full percentage points. Except for a few months in 1993, the last time long-term interest rates were this low was in the 1960s. The drop in rates last year is expected to set the stage for a pickup in economic activity in 1996.

Lower interest rates and a healthy economic outlook propelled the stock market to record levels. Last year, the Dow-Jones industrial average rose 36 percent, and other major indexes were up by similarly impressive amounts. In the opening months of this year, stock markets set a series of new highs. Financial markets fluctuate, and these gains will not continue unabated; but the rise in the stock market last year will contribute to the forward momentum in the economy in 1996 by lowering the cost of capital to business, which should stimulate investment, and by raising household wealth, which will boost consumer spending.

Economic Projections

Key assumptions: The economic projections underlying this budget are summarized in Table 1–1. They are based on several key assumptions. First and foremost, the projections assume that the Administration's budget will be adopted. The budget proposals are intended to reduce the deficit progressively and achieve a small surplus in 2002, according to Congressional Budget Office assumptions, and in 2001 according to Administration estimates. Such a policy would foster a continuation of the favorable macroeconomic trends that have emerged since 1992. Deficit restraint moderates inflationary pressures by restraining demand. It enables the Federal Reserve to continue its recent policy of easing short-term interest rates. The combination of easier monetary policy and fiscal restraint provides an environment in which financial markets can keep

[2] These rates are based on the new chain-weighted definition of real GDP which is explained more fully below.

Table 1–1. ECONOMIC ASSUMPTIONS [1]

(Calendar years; dollar amounts in billions)

	Actual 1994	Projections							
		1995	1996	1997	1998	1999	2000	2001	2002
Gross Domestic Product (GDP):									
Levels, dollar amounts in billions:									
Current dollars	6,931	7,254	7,621	8,008	8,417	8,848	9,295	9,772	10,268
Real, chained (1992) dollars	6,604	6,742	6,888	7,047	7,212	7,380	7,553	7,730	7,911
Chained price index (1992 = 100), annual average	105.0	107.6	110.6	113.6	116.7	119.9	123.1	126.4	129.8
Percent change, fourth quarter over fourth quarter:									
Current dollars	5.9	4.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Real, chained (1992) dollars	3.5	1.5	2.2	2.3	2.3	2.3	2.3	2.3	2.3
Chained price index (1992 = 100), annual average	2.3	2.5	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Percent change, year over year:									
Current dollars	5.8	4.7	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Real, chained (1992) dollars	3.5	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3
Chained price index (1992 = 100), annual average	2.3	2.5	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Incomes, billions of current dollars:									
Personal income	5,750	6,104	6,416	6,716	7,025	7,337	7,664	8,031	8,434
Wages and salaries	3,241	3,420	3,607	3,801	3,995	4,193	4,403	4,629	4,864
Corporate profits before tax	528	602	650	702	753	800	843	882	917
Consumer Price Index (all urban): [2]									
Level (1982–84 = 100), annual average	148.2	152.4	156.6	161.3	165.9	170.5	175.3	180.2	185.2
Percent change, fourth quarter over fourth quarter	2.6	2.7	3.1	2.9	2.8	2.8	2.8	2.8	2.8
Percent change, year over year	2.6	2.8	2.8	3.0	2.8	2.8	2.8	2.8	2.8
Unemployment rate, civilian, percent:									
Fourth quarter level	5.6	5.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Annual average	6.1	5.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Federal pay raises, January, percent:									
Military	2.2	2.2	2.6	3.0	3.1	3.1	3.1	3.1	3.1
Civilian [3]	.....	2.0	2.0	3.0	NA	NA	NA	NA	NA
Interest rates, percent:									
91-day Treasury bills [4]	4.3	5.5	4.9	4.5	4.3	4.2	4.0	4.0	4.0
10-year Treasury notes	7.1	6.6	5.6	5.3	5.0	5.0	5.0	5.0	5.0
Addendum: GDP and incomes, pre-revision basis: [5]									
Gross Domestic Product (GDP), current dollars:									
Levels, dollar amounts in billions	6,738	7,078	7,428	7,805	8,203	8,623	9,058	9,523	10,005
Percent change, fourth quarter over fourth quarter	6.5	4.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Percent change, year over year	6.2	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1
Incomes, billions of current dollars:									
Personal income	5,702	6,054	6,357	6,654	6,960	7,270	7,595	7,958	8,358
Wages and salaries	3,279	3,450	3,631	3,826	4,020	4,220	4,431	4,658	4,895
Corporate profits before tax	525	572	608	657	706	749	790	826	859

NA=Not Available.

[1] Based on information available as of mid-January 1996.

[2] CPI for all urban consumers. Two versions of the CPI are published. The index shown here is that currently used, as required by law, in calculating automatic adjustments to individual income tax brackets. Projections reflect scheduled changes in methodology.

[3] Percentages for 1994-1996 exclude locality pay adjustments. Percentages to be proposed for years after 1997 have not yet been determined.

[4] Average rate (bank discount basis) on new issues within period.

[5] Because the comprehensive revision to the National Income and Product Accounts (which include GDP and incomes) was delayed due to furloughs of Government employees, some budget estimates are based, at least in part, on GDP and incomes data on the pre-revision basis shown in this addendum.

long-term interest rates on a downward path. A policy to balance the budget would thus encourage investment, and thereby raise the level of productivity and potential output in the long run.

Real GDP: Economic growth was temporarily restrained in the fourth quarter of last year by two shutdowns of the Federal Government, and in the first quarter of this year by a record-breaking blizzard. According to preliminary estimates, real GDP grew at a 0.9 percent annual rate in the fourth quarter; based on partial information, first quarter growth may also be relatively weak.

Growth is expected to pick up as the negative impact of the recent disruptions fades. Interest-sensitive sectors, such as consumer durables and business equipment spending, are likely to be at the leading edge of the acceleration in response to the fall in long-term interest rates during 1995 and the surge in the stock market. On average, real GDP is forecast to increase 2.2 percent over the four quarters of 1996.

During 1997–2002, real GDP is projected to rise 2.3 percent annually (the Administration's estimate of the economy's potential growth rate). Lower interest rates and smaller deficits are projected to increase investment and raise the trend growth in output per hour. Productivity in the nonfarm business sector had been

growing at 1.1 percent per year on average since 1973, but it is projected to increase 1.2 percent annually over the next six years.

Potential GDP growth is also determined by growth of the labor force. Labor force participation trends of recent years are assumed to continue. The rise in the female participation rate is expected to be much less than during the 1970s and 1980s, while the male rate is expected to continue to decline. On balance, there is likely to be little overall change in labor force participation. During 1997–2002, the labor force is projected to grow 1.1 percent per year, about the same pace as during the past six years, but noticeably slower than the 1.7 percent rate during the 1980s when female participation rates rose rapidly.

Unemployment rate: The civilian unemployment rate, which averaged 5.6 percent during the fourth quarter of 1995, is expected to average 5.7 percent this year and hold at that level through the end of the projection period. With real GDP projected to rise at the rate of growth of potential output, the unemployment rate would remain stable.

Inflation: The chain-weighted GDP price index is projected to rise 2.7 percent a year over the projection horizon. That is just slightly faster than the 2.5 percent estimated for 1995. The Consumer Price Index is expected to rise 3.1 percent during 1996, about the same as the 3.0 percent rise last year in the CPI excluding food and energy. The CPI is expected to rise 2.9 percent in 1997 and 2.8 percent per year during 1998–2002. The deceleration is due to scheduled improvements in the methods used to calculate the CPI. These improvements are discussed later in this chapter.

Interest rates: Short- and long-term rates are projected to fall as a result of the reduced borrowing needs of the government that result from the Administration's budget proposals. The 91-day Treasury bill rate is expected to fall to 4.0 percent by 2000 and hold at that level through 2002; in the fourth quarter of 1995, the rate was 5.3 percent. The yield on the 10-year Treasury note is projected to decline to 5.0 percent by 1998 and hold at that level; in the fourth quarter of last year, the yield was 5.9 percent. These projections, in combination with a forecast of stable inflation, imply a reduction in real interest rates to levels that prevailed when the Federal budget was close to balance. The sharper fall in short rates will cause the yield curve to steepen, which is a more typical pattern for an expansionary period.

Incomes: As a result of the drop in interest rates, the share of nominal GDP accounted for by personal interest income, a component of personal income, is expected to decline. On the other hand, the corporate sector is a net borrower, so the profits share and the share of dividend income are likely to grow because of the reduction in interest costs. The projected share of wages and salaries in GDP is expected to remain about unchanged over the projection horizon. After adjustment for inflation, real wages and salaries are projected to increase 14 percent from 1996 to 2002.

Statistical Improvements

The economic assumptions incorporate two important changes in the way economic activity is measured.

Fixing Biases in Real GDP: For fifty years, the featured measure of real GDP was based on a fixed-weight price system, with an update every five to ten years to account for shifts in spending patterns. While convenient and familiar, that system introduced a "substitution bias" into the estimate of real GDP and the GDP implicit price deflator. The bias was significant whenever relative prices changed rapidly—as for example in the 1970s, when oil prices jumped sharply. Until the recent revision, 1987 was the base year for the fixed-weight price system. The large drop in the quality-adjusted price of computers since 1987 caused a growing upward bias in the measurement of real GDP growth.

To remove these biases, the Bureau of Economic Analysis changed to a chain-weighted system for estimating real GDP in January of 1996. The weights are now based on nearly contemporaneous spending patterns. Real GDP growth for 1993, for example, is calculated using average expenditure weights for 1992–1993, and the growth rate for 1994 is computed using an average of 1993–1994 spending. Thus, the weights are linked year-to-year, hence the term "chain weights."

The substitution bias in the former fixed-weight system distorted the picture of real growth and aggregate inflation. The shift to chain weights lowered the measured rate of real GDP growth in 1993–94 by about ½ percentage point yearly compared with the previous estimate, and raised the estimate of aggregate inflation by a similar amount. While converting to chain weights provides a more accurate measure of the Nation's economic performance, it does have one inconvenience. Real GDP no longer exactly equals the sum of real spending by households, businesses and governments—the familiar rule that GDP = C+I+G+net exports. Now there is a difference, known as "the residual," that needs to be added to the components to sum to real GDP.

Changing the CPI: The CPI is one of the most important statistics produced by the Federal Government. It is widely used to measure changes in the cost of living.[3] The CPI's effect on the budget is pervasive; it is linked by formula to spending for social security, Federal pensions, and many smaller programs, and to the tax brackets and exemptions in the individual income tax. It is estimated that a reduction of 0.1 percentage point in the average yearly rate of change in

[3] This is done even though the CPI is explicitly not a cost-of-living index. Rather, it measures changes in the average cost of a fixed market basket of goods and services. By design, the CPI does not allow for those changes in consumption patterns that people make routinely to maintain their standard of living when prices are changing.

the CPI would reduce the budget deficit by a total of about $20 billion over the next seven years.

Given its importance, it is not surprising that the CPI has often been criticized. There is no perfect price index, but the Bureau of Labor Statistics (BLS), which computes the CPI, strives to eliminate potential biases from the index. Over the years, the BLS has been receptive to suggestions for improvements. BLS is the main source of the technical analysis needed to make such improvements, and it is often the first to highlight potential problems.

Much recent criticism has suggested that the CPI may overstate inflation. Various possible causes have been examined. One major problem is how to separate quality changes from price increases for goods and services. For example, if the price of a visit to the doctor goes up, how much of this is due to better service due to improved diagnostic equipment and new testing procedures, and how much is a pure price increase? Such questions are hard to answer, but critics believe BLS too often treats quality improvements as price rises. Another problem area is the exclusion of new products or new outlets from the sample used to determine the CPI. There are good practical reasons why it takes time to incorporate new items into that sample, but the effect may be to miss some important price declines that occur as new products and services enter the market.

Finally, there are some technical issues concerning how the CPI is measured and put together. BLS has announced that it will introduce two methodological improvements in the CPI over the next three years that should make the index more accurate. These changes are expected to reduce the annual rate of growth of the index by about 0.3 percentage points.

The announced improvements (along with recent revisions to GDP) will also narrow the wedge between the rates of change in the CPI, on the one hand, and the price indexes for consumer expenditures and for GDP in the National Income and Product Accounts on the other. During 1998–2002, the annual growth in the CPI is assumed to be 2.8 percent, almost the same as the 2.7 percent assumed for the chain-weighted price index for GDP.

By January 1997, BLS plans to institute new estimation procedures to correct what has sometimes been called "formula bias," but which might be more accurately described as "sample rotation bias." These new procedures are estimated to reduce the growth of the CPI by about 0.2 percentage point per year. The bias arises because of the need to update the sample of items entering the CPI. New brands and varieties of goods are continually being introduced in the marketplace, and if the CPI is to remain current, it must be based on the current brands of cereals, toothpaste, automobiles, et cetera. When new goods are introduced, however, the usual BLS procedures can generate inappropriate weights for those that are temporarily selling at either abnormally low or abnormally high prices. The problem is greatest for items with prices that fluctuate around a trend, such as fruits and vegetables. Recognizing this, BLS instituted a correction for some components of the index in January 1995. One possible course is to apply the same type of correction throughout the index.

Correcting the sample rotation bias in the CPI will also reduce the rate of change in the price indexes used to determine real personal consumption expenditures in the national income and product accounts, which are based on detailed data from the CPI. The effect of a slower rise in consumer prices is expected to hold down the growth of the overall GDP price index by about 0.1 percentage point yearly. Consumer expenditures account for about two-thirds of GDP, and the rest is not affected by the change. Measured real GDP growth will, of course, increase by a similar magnitude (because total nominal spending growth is a datum that is not affected by this change).

The second scheduled improvement in the CPI is an updating of the fixed market basket that is expected to occur in January 1998. Currently, the CPI market basket is based on 1982–1984 consumption patterns; in 1998, the market basket will be updated to reflect 1993–1995 spending patterns. This "rebasing" of the index occurs about every 10 years. Rebasing tends to reduce the measured inflation rate in subsequent years by reducing the substitution bias that builds up over time as the economy moves away from the base period prices. The new weights tend to give more emphasis in the index to goods whose prices have been rising relatively less rapidly (because consumers tend to shift their consumption toward those items). The budget assumes that the change in the CPI market basket will slow the growth of the CPI by about 0.1 percentage point per year beginning in 1998. This improvement will not affect real GDP or the price indexes associated with it.

These improvements in the CPI will go some way towards correcting its apparent tendency to overstate inflation. The largest potential biases—quality measurement and adjustments for new goods—will not be addressed by these changes. Continued research in these areas by BLS and outside experts is needed to improve this vital economic statistic.

Comparison with CBO

The Congressional Budget Office (CBO) prepares forecasts of the economy that are used by Congress in formulating budget policy. Thus, it performs a similar function to that of OMB, the Council of Economic Advisers and Treasury for the Executive Branch. While outside observers have often compared the CBO forecast with that of the Administration, the budget is usually prepared well before the current CBO forecast is made public, so a timely forecast comparison is generally impossible.

Over the past year, however, there has been heightened interest in the economic assumptions used for the budget and in the differences between Administration and CBO forecasts. That is because the fiscal policy

objective is now to achieve a balanced budget, rather than a specific amount of deficit reduction. Even small differences in economic assumptions can matter for the size of policy changes needed to achieve budget balance. When the goal is a specific amount of deficit reduction, differences in economic assumptions usually have little bearing on the size of policy changes needed to achieve a specific amount of budgetary savings.

Post-Policy vs Pre-Policy: One important difference between CBO and the Administration concerns the policy assumptions on which the forecast is based. The Administration projections always assume that the President's budget proposals will be enacted as proposed; the economic projections are "post-policy." CBO normally assumes that current law will continue; it is a "pre-policy" projection.

This difference often is immaterial in determining the major macroeconomic variables. Important as budget policy is, especially in the long run, even large dollar changes in programs will often have only a modest effect on real GDP or inflation. Therefore, a specific budget proposal may make little difference to the macroeconomic outlook. Thus, comparisons of CBO and Administration economic projections can be meaningful even when the policy assumptions are not identical. Sometimes the difference is crucial, however, and that was the case in 1995.

The Fiscal Bonus: The Administration's policy is to balance the budget over the next seven years. The decision to seek a balanced budget has major implications for the economic outlook. Such a significant change in policy, if enacted, would be likely to cause noticeable changes in several macroeconomic variables, especially interest rates and income shares. However, CBO's initial forecast for the 1996 budget (and the Administration's) assumed that the deficit would not be eliminated over this time period.

In April, CBO presented its estimates of the fiscal bonus that would result from balancing the budget following the policies in the congressional budget resolution. This bonus took account of the more favorable interest rate outlook that would result from a balanced budget. It did not, however, reflect the likely shifts in income among sectors of the economy that would follow from the lower interest rates generated by a balanced budget. This was corrected in December, when a revised CBO forecast was prepared that took into account the full range of macroeconomic effects that a balanced budget would produce.

The Treatment of Statistical Biases: The statistical biases in the measurement of real GDP and inflation described above posed problems for forecasters. Neither CBO nor the Administration was completely consistent in dealing with these issues. In some cases, projected economic variables reflected the bias that was built into their measurement; in other cases, the projections assumed that the bias would be corrected somehow during the course of the forecast. In any case, the revisions to GDP that were made in January and the planned modifications to the CPI go a long way toward removing this source of past difference in the forecasts.

Projection Comparison: The main outlines of the Administration's current forecast were determined in December at about the time that CBO made public its economic projections. A comparison of the two forecasts (including the CBO fiscal bonus to put them on the same policy basis) reveals a convergence of views summarized in Table 1–7.

- *Real GDP:* The projections of real GDP, on the new chain-weighted basis, are identical.
- *Inflation:* The Administration assumes that there will be no further reduction in the rate of inflation as the expansion continues except for statistical corrections to the CPI. CBO's inflation forecast is similar, but its projection of the chain-weighted GDP price index is slightly lower than that of the Administration.
- *Unemployment:* CBO is projecting an increase in unemployment that would raise it above recent levels. The Administration believes that unemployment will remain closer to its 1995 average, which is believed to be consistent with continued stability of inflation and economic growth.
- *Interest Rates:* The largest difference in economic assumptions is for long-term interest rates. Of all the macroeconomic variables, these may be the hardest to anticipate. It is widely accepted that changes in budget policy affect interest rates, but it is hard to estimate the quantitative effect that policy changes will have. In presenting its fiscal bonus calculations, CBO has taken two views of the matter. The December projection shown here is the more conservative: long-term interest rates show little further decline from their levels at the end of last year. CBO had projected a much larger effect on interest rates last April. The Administration's interest rate projections are very close to CBO's larger April bonus estimate, with changes in the early years based on recent experience.
- *Profits and Other Incomes:* The projections of future receipts depend not only on the overall level of economic activity but also on the distribution of income among profits, wages, and other incomes. Both the Administration and CBO expect that the lower interest rates associated with a balanced budget will shift income from interest to profits, leaving the share of wages roughly stable.

Although the differences in economic assumptions are not large—indeed, they are much less than differences that commonly prevailed under previous Administrations—the effect of the differences on the deficit is significant. The Administration's budget is balanced on the December CBO assumptions, but the surplus estimated for 2002 is smaller, and it is not possible to extend the Administration's proposed tax reduction per-

Table 1–2. COMPARISON OF ECONOMIC ASSUMPTIONS

(Calendar years)

	Projections						
	1996	1997	1998	1999	2000	2001	2002
Real GDP (chain-weighted): [1]							
CBO December	2.2	2.3	2.3	2.3	2.3	2.3	2.3
1997 Budget	2.2	2.3	2.3	2.3	2.3	2.3	2.3
Chain-weighted GDP Price Index: [1]							
CBO December	2.7	2.6	2.6	2.6	2.6	2.6	2.6
1997 Budget	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Consumer Price Index (all-urban): [1]							
CBO December	3.2	3.1	3.0	2.9	2.9	2.9	3.0
1997 Budget	3.1	2.9	2.8	2.8	2.8	2.8	2.8
Unemployment rate: [2]							
CBO December	5.9	6.0	6.0	6.0	6.0	6.0	6.0
1997 Budget	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Interest rates: [2]							
91-day Treasury bills:							
CBO December	5.3	5.0	4.7	4.2	3.9	3.9	3.9
1997 Budget	4.9	4.5	4.3	4.2	4.0	4.0	4.0
10-year Treasury notes:							
CBO December	5.8	5.6	5.5	5.5	5.5	5.5	5.5
1997 Budget	5.6	5.3	5.0	5.0	5.0	5.0	5.0

[1] Percent change, fourth quarter over fourth quarter.
[2] Annual averages, percent.

manently. Over seven years, CBO's economic assumptions would increase deficits by a cumulative total of about $300 billion relative to the Administration's assumptions, necessitating substantially greater savings to achieve balance by 2002.[4]

Although the budgetary consequences are large, there is very little scientific basis on which to choose between the two projections. Economic forecasting is difficult and the average errors that forecasters make are far larger than the differences in the major economic variables discussed here. If past experience is a guide, neither projection will prove completely accurate. The important question is whether a particular economic projection provides a sound and prudent basis upon which to plan the Nation's budget. The Administration believes that its assumptions, which are well within the range of historical experience, fulfill that function.

Omnibus Trade and Competitiveness Act of 1988

As required by the Omnibus Trade and Competitiveness Act of 1988, Table 1–3 shows estimates for economic variables related to saving, investment, and foreign trade consistent with the economic assumptions.

The merchandise trade and current account deficits deteriorated in fiscal year 1995 as growth in U.S. exports was exceeded by growth in imports. There was improvement in the trade deficit near the end of fiscal year 1995 and the first quarter of fiscal year 1996. Net private investment in the United States has expanded rapidly during this Administration, and it is expected to continue to increase as the economy expands. The sources for the increased private investment are the decline in the Federal deficit and higher private saving, plus a larger inflow of foreign capital.

The Act requires information on the amount of borrowing by the Federal Government in private credit markets. This is presented in Chapter 11, "Federal Borrowing and Debt."

It is difficult to gauge with precision the effect of Federal Government borrowing from the public on interest rates and exchange rates, as required by the Act. Both are influenced by many factors besides Government borrowing in a complicated process involving supply and demand for credit and perceptions of fiscal and monetary policy here and abroad.

[4] This comparison only adjusts for differences in economic assumptions. Other differences would arise because of different technical assumptions, such as the projected increase in Medicare and Medicaid costs.

Table 1–3. SAVING, INVESTMENT, AND TRADE BALANCE

(Fiscal years; in billions of dollars)

	1995 actual	1997 estimate
Current account	–165	–185 to –145
Merchandise trade balance	–180	–210 to –170
Net foreign investment	–169	–185 to –145
Net domestic saving (excluding Federal saving) [1]	397	410 to 450
Net private domestic investment	361	385 to 415

[1] Defined for purposes of Public Law 100–418 as the sum of private saving and the surpluses of State and local governments. All series are based on National Income and Product Accounts (NIPA) except for the current account balance. The (NIPA) figures, both actual and projected, are on a pre-benchmark revisions basis.

Impact of Changes in the Economic Assumptions

The economic assumptions underlying last year's budget were predicated on little projected change in the level of the budget deficit over the ensuing five years. The assumptions underlying this year's budget reflect a change in fiscal policy that puts the deficit on a declining path toward budget balance by the year 2002. This change in fiscal policy alters the economic outlook; in particular it reduces the levels of expected future interest rates. As noted above, lower interest rates imply a shift of income out of interest income and into corporate profits—and, to a lesser extent, into dividend income—resulting in higher projected receipts due to the higher tax rates involved. The outlook for long-term real economic growth (on a comparable basis of measurement) has not been raised to reflect the change in fiscal policy. However, other changes in the economic outlook summarized in Table 1–4 (in particular a reduction in the expected annual rate of inflation measured by the CPI) will be affected by the technical improvements to reduce the overstatement of inflation discussed above. Also, the equilibrium unemployment rate on a noninflationary growth path has been reduced 0.1 percentage point based on the experience of 1995.

The effects on the budget of the changes in the economic outlook are shown in Table 1–5. For example, in the last column, the year 2000 deficit is reduced by $99 billion as a result of changes in economic assumptions in the 1997 budget compared to those in the 1996 budget—from $127 billion under 1996 budget economics with 1997 budget policies, to less than $28 billion with 1997 budget economics and policies. The effect of reducing the projected rate of inflation is to reduce the projected levels of both receipts and outlays. (This effect is discussed more fully in the last section of this chapter.) The reduction in the equilibrium unemployment rate causes a modest reduction in outlays. The largest budget effect, however, is major reductions in interest costs resulting both from the decline in projected interest rates and from the fact that interest costs are incurred on a reduced amount of debt. (The debt service savings shown are only the portion of total debt service cost reduction resulting from changes in the economic outlook, not the total effect of moving toward a balanced budget by the year 2002.)

Structural vs. Cyclical Deficit

When there is slack in the economy, receipts are lower than they would be if resources were fully employed, and outlays for unemployment-sensitive programs (such as unemployment compensation and food stamps) are higher. As a result, the deficit is higher than it would be at full employment. The portion of the deficit that can be traced to such factors is called the cyclical deficit. The remainder, the portion that would remain at full employment (consistent with a 5.7 percent unemployment rate), is called the structural deficit.

Changes in the structural deficit give a better picture of the impact of budget policy on the economy than does the unadjusted deficit. During a recession or the recovery from one, the structural deficit also gives a clearer picture of the deficit problem that fiscal policy must address, because this part of the deficit will persist even when the economy has fully recovered, unless policy changes.

Table 1–4. COMPARISON OF ECONOMIC ASSUMPTIONS IN THE 1996 AND 1997 BUDGETS

(Calendar years)

	1995	1996	1997	1998	1999	2000
Nominal GDP (percent change): [1]						
1996 budget assumptions [2]	5.4	5.5	5.6	5.5	5.5	5.5
1997 budget assumptions	4.2	5.1	5.1	5.1	5.1	5.1
Real GDP (percent change): [1]						
1996 budget assumptions [2]	2.2	2.3	2.3	2.3	2.3	2.3
1997 budget assumptions	1.5	2.2	2.3	2.3	2.3	2.3
GDP price index (percent change): [1]						
1996 budget assumptions [2]	3.1	3.1	3.2	3.2	3.2	3.1
1997 budget assumptions	2.5	2.8	2.7	2.7	2.7	2.7
CPI-U (percent change): [1]						
1996 budget assumptions	3.2	3.2	3.2	3.2	3.1	3.1
1997 budget assumptions	2.7	3.1	2.9	2.8	2.8	2.8
Civilian unemployment rate (percent): [3]						
1996 budget assumptions	5.8	5.9	5.8	5.8	5.8	5.8
1997 budget assumptions	5.6	5.7	5.7	5.7	5.7	5.7
91-day Treasury bill rate (percent): [3]						
1996 budget assumptions	5.9	5.5	5.5	5.5	5.5	5.5
1997 budget assumptions	5.5	4.9	4.5	4.3	4.2	4.0
10-year Treasury note rate (percent): [3]						
1996 budget assumptions	7.9	7.2	7.0	7.0	7.0	7.0
1997 budget assumptions	6.6	5.6	5.3	5.0	5.0	5.0

[1] Fourth quarter-to-fourth quarter.
[2] Adjusted to reflect January 1996 comprehensive revisions.
[3] Calendar year average.

Table 1–5. EFFECTS ON THE BUDGET OF CHANGES IN ECONOMIC ASSUMPTIONS SINCE LAST YEAR

(In billions of dollars)

	1996	1997	1998	1999	2000
Budget totals under 1996 budget economic assumptions and 1997 budget policies:					
Receipts	1,407.8	1,472.5	1,556.0	1,635.1	1,724.9
Outlays	1,595.3	1,673.5	1,731.6	1,789.6	1,851.5
Deficit (–)	–187.5	–201.0	–175.6	–154.5	–126.6
Changes due to changes in economic assumptions:					
Receipts	19.0	22.7	21.9	17.4	8.9
Outlays:					
Inflation	–3.8	–7.3	–9.8	–13.1	–16.9
Unemployment	–2.9	–1.0	–1.1	–1.1	–1.1
Interest rates	–13.9	–24.6	–35.6	–44.2	–52.5
Interest on changes in borrowing	–2.3	–5.3	–9.3	–14.3	–19.7
Total, outlays	–22.9	–38.2	–55.8	–72.7	–90.2
Decrease in deficit (+)	41.9	60.9	77.7	90.1	99.1
Budget totals under 1997 budget economic assumptions and policies:					
Receipts	1,426.8	1,495.2	1,577.9	1,652.5	1,733.8
Outlays	1,572.4	1,635.3	1,675.9	1,716.9	1,761.4
Deficit (–)	–145.6	–140.1	–98.0	–64.4	–27.5

In the early 1990's, large swings in net outlays for deposit insurance (the S&L bailouts) had substantial impacts on deficits, but had little impact on economic performance. It therefore became customary to remove deposit insurance outlays as well as the cyclical component of the deficit from the actual deficit to compute the adjusted structural deficit. This is shown in Table 1–6.

Since the economy is projected to be quite close to full employment over the forecast horizon, the cyclical component of deficits are small. Deposit insurance net outlays are relatively small and do not change greatly from year to year. Thus, rather unusually, the adjusted structural deficits in this budget display much the same pattern of year-to-year changes as the actual deficits. The most significant point illustrated by this table, therefore, is the fact that of the $145 billion reduction in the actual budget deficit between 1992 and 1996 (from $290 billion to $146 billion), nearly 45 percent ($65 billion) resulted from cyclical improvement in the economy. The rest of the reduction stemmed primarily from policy actions—mainly those in OBRA93 which reversed a projected steep rise in the deficit.

Sensitivity of the Budget to Economic Assumptions

Both receipts and outlays are affected by changes in economic conditions. This sensitivity seriously complicates budget planning, because errors in economic assumptions lead to errors in the budget projections. It is therefore useful to examine the implications of alternative economic assumptions.

Many of the budgetary effects of changes in economic assumptions are fairly predictable, and a set of rules of thumb embodying these relationships can aid in estimating how changes in the economic assumptions would alter outlays, receipts, and the deficit.

Economic variables that affect the budget do not usually change independently of one another. Output and employment tend to move together in the short run: a higher rate of real GDP growth is generally associated with a declining rate of unemployment, while weak or negative growth is usually accompanied by rising unemployment. In the long run, however, changes in the average rate of growth of real GDP are mainly due to changes in the rates of growth of productivity and labor supply, and are not necessarily associated with changes in the average rate of unemployment. Inflation and interest rates are also closely interrelated:

Table 1–6. ADJUSTED STRUCTURAL DEFICIT

(In billions of dollars)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Unadjusted surplus/deficit	290.4	255.1	203.2	163.9	145.6	140.1	98.0	64.4	27.5	–8.3	–43.9
Cyclical component	63.6	51.1	19.2	–3.2	–1.1	.....	.....	.....	.....	.....	.....
Structural surplus/deficit	226.8	204.0	184.0	167.1	146.7	140.1	98.0	64.4	27.5	–8.3	–43.9
Deposit insurance outlays [1]	–2.4	–28.0	–7.6	–17.9	–13.5	–4.3	–2.0	–0.5	–2.2	–1.6	–1.8
Adjusted structural surplus/deficit	229.2	232.0	191.5	185.0	160.2	144.4	99.9	64.9	29.7	–6.7	–42.1

[1] In 1992, includes $4.9 billion in allied contributions for Desert Storm.

a higher expected rate of inflation increases interest rates, while lower expected inflation reduces rates.

Changes in real GDP growth or inflation have a much greater cumulative effect on the budget over time if they are sustained for several years than if they last for only one year.

Highlights of the budget effects of the above rules of thumb are shown in Table 1–7.

If real GDP growth is lower by one percentage point in calendar 1996 only and the unemployment rate rises by one-half percentage point, the 1996 deficit would increase by $8.0 billion; receipts in 1996 would be lower by about $6.8 billion, and outlays would be higher by about $1.2 billion, primarily for unemployment-sensitive programs. In 1997, the receipts shortfall would grow further to about $14.7 billion, and outlays would be increased by about $6.0 billion relative to the base, even though the growth rate in calendar 1997 follows the path originally assumed. This is because the level of real (and nominal) GDP and taxable incomes would be permanently lower and unemployment higher. The budget effects (including growing interest costs associated with the higher deficits) would continue to grow slightly in later years.

The budget effects are much larger if the real growth rate is assumed to be one percentage point less in each year (1996–2002) and the unemployment rate to rise one-half percentage point in each year. With these assumptions, the levels of real and nominal GDP would be below the base case by a growing percentage. The deficit would be $177.2 billion higher than under the base case by 2002.

The effects of slower productivity growth are shown in a third example, where real growth is one percentage point lower per year while the unemployment rate is unchanged. In this case, the estimated budget effects mount steadily over the years, but more slowly, reaching a $145.8 billion deficit add-on by 2002.

Joint changes in interest rates and inflation have a smaller effect on the deficit than equal percentage point changes in real GDP growth because their effects on receipts and outlays are substantially offsetting. An example is the effect of a one percentage point higher rate of inflation and one percentage point higher interest rates during calendar year 1996 only. In subsequent years, the price level and nominal GDP would be one percent higher than in the base case, but interest rates are assumed to return to their base levels. Outlays for 1996 rise by $6.5 billion[5] and receipts by $7.9 billion, for a decrease of $1.4 billion in the 1996 deficit. In 1997, outlays would be above the base by $15.1 billion, due in part to lagged cost-of-living adjustments; receipts would rise $15.9 billion above the base, however, resulting in a $0.8 billion decrease in the deficit. In subsequent years, the amounts added to receipts would continue to be larger than the additions to outlays.

If the rate of inflation and the level of interest rates are higher by one percentage point in all years, the price level and nominal GDP would rise by a cumulatively growing percentage above their base levels. In this case, the effects on receipts and outlays mount steadily in successive years, adding $81.3 billion to outlays and $114.6 billion to receipts in 2002, for a net reduction in the deficit of $33.3 billion.

The table also shows the interest rate and the inflation effects separately, and rules of thumb for the added interest cost associated with higher or lower deficits (increased or reduced borrowing).

The effects of changes in economic assumptions in the opposite direction are approximately symmetric to those shown in the table. The impact of a one percentage point lower rate of inflation or higher real growth would have about the same magnitude as the effects shown in the table, but with the opposite sign.

These rules of thumb are computed while holding the income share composition of GDP constant. Because different income components are subject to different taxes and tax rates, estimates of total receipts can be affected significantly by changing income shares. These relationships, however, have proved too complex to be reduced to simple rules.

[5] This excludes any adjustment to discretionary programs, which are capped in nominal terms.

Table 1–7. SENSITIVITY OF THE BUDGET TO ECONOMIC ASSUMPTIONS

(In billions of dollars)

Budget effect	1996	1997	1998	1999	2000	2001	2002
Real Growth and Employment							
Budgetary effects of 1 percent lower real GDP growth:							
For calendar year 1996 only: [1]							
Receipts	–6.8	–14.7	–16.9	–17.1	–17.5	–18.1	–18.8
Outlays	1.2	6.0	7.1	8.4	9.6	10.9	12.4
Deficit increase (+)	8.0	20.6	24.0	25.5	27.1	29.0	31.2
Sustained during 1996–2002: [1]							
Receipts	–6.8	–21.7	–39.2	–57.6	–77.1	–97.7	–119.8
Outlays	1.2	8.2	14.3	23.9	32.5	45.1	57.4
Deficit increase (+)	8.0	29.9	53.5	81.5	109.6	142.8	177.2
Sustained during 1996–2002, with no change in unemployment:							
Receipts	–6.8	–22.0	–40.2	–60.0	–81.1	–103.8	–128.2
Outlays	0.2	0.9	2.4	4.8	7.8	12.1	17.6
Deficit increase (+)	7.0	22.9	42.6	64.7	88.9	115.9	145.8
Inflation and Interest Rates							
Budgetary effects of 1 percentage point higher rate of:							
Inflation and interest rates during calendar year 1996 only:							
Receipts	7.9	15.9	15.5	14.1	14.6	15.3	16.0
Outlays	6.5	15.1	11.8	10.1	9.6	9.2	8.2
Deficit increase (+)	–1.4	–0.8	–3.7	–4.1	–5.0	–6.1	–7.8
Inflation and interest rates, sustained during 1996–2002:							
Receipts	7.9	24.2	40.8	57.1	74.7	93.8	114.6
Outlays	6.5	22.0	35.2	47.4	59.4	70.6	81.3
Deficit increase (+)	–1.4	–2.2	–5.6	–9.7	–15.3	–23.2	–33.3
Interest rates only, sustained during 1996–2002:							
Receipts	1.0	2.7	3.4	3.7	4.0	4.2	4.5
Outlays	6.0	17.7	24.9	30.3	34.8	38.8	41.2
Deficit increase (+)	5.0	15.0	21.5	26.6	30.9	34.5	36.7
Inflation only, sustained during 1996–2002:							
Receipts	6.9	21.5	37.4	53.4	70.7	89.6	110.1
Outlays	0.5	4.3	10.3	17.1	24.6	31.8	40.1
Deficit increase (+)	–6.4	–17.2	–27.1	–36.3	–46.2	–57.7	–70.0
Interest Cost of Higher Federal Borrowing							
Effect of $100 billion additional borrowing during 1996	2.8	5.1	5.0	5.2	5.2	5.3	5.5

[1] The unemployment rate is assumed to be 0.5 percentage point higher per 1.0 percent shortfall in the level of real GDP.