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# Uncertainty in Budget Projections

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## Summary

January 2001 budget reports from the Office of Management and Budget (OMB) and the Congressional Budget Office (CBO) project new 10-year (FY2002-2011) cumulative total baseline surpluses ranging from $4.996 trillion (OMB) to $5.610 trillion (CBO). The projections assume no changes in current policy, follow the constraints on baseline estimates imposed by law, include assumptions about underlying economic (and some budget) conditions over the next 10 years, and include assumptions about how the budget will interact with those underlying economic conditions.

These projections, as acknowledged by both agencies, are not meant to predict future budget outcomes. They provide a set of numbers against which proposed and adopted policy changes can be measured. CBO in its January 2001 budget report is very clear about the uncertainties surrounding its "midrange" baseline budget projections for the fiscal years 2002 through 2011. In its chapter on budget uncertainty, it states,

> ... the outlook for the budget can best be described not as the single row of numbers presented in CBO tables but as a fan of probabilities around those numbers. The fan widens as the projection extends.[1]

Budget estimates and projections cannot be more accurate than the information that is needed to create them. This underlying information – future economic conditions and how the budget and the economy will interact in the future – cannot be known with certainty since it comes from assumptions about the future. The outcome of the budget estimating process is the best guess of the likeliest outcome for the government's receipts, outlays, and surplus (or deficit) with the expectation, nonetheless, that even the best guess is likely to differ from the eventual actual amounts.

One can get a sense of how uncertain budget projections are by examining some of those made previously. In January 1992, CBO projected a *deficit* of $322 billion for fiscal year (FY) 2000. The budget in FY2000 actually produced a *surplus* of $236 billion. This substantial change resulted almost exclusively from differences between the underlying assumptions – future economic conditions and the interaction of the economy and the budget – used in the original projections and those that actually occurred. CBO's budget reports indicate that very little of the budgetary change over those years resulted from legislation.

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[1]CBO, *The Budget and Economic Outlook: Fiscal Years2002-2011*, Jan. 31, 2001, p. 93.

## Contents



## List of Figures

# Uncertainty in Budget Projections

Part of the budget debate over the last two years has centered on what should be done with projected surpluses, particularly the on-budget surpluses, over the next 10 years.[2] The official budget projections show potentially huge surpluses during the coming decade. The Clinton Administration's final budget document, released in mid-January 2001 by the Office of Management and Budget (OMB), projected that baseline total surpluses would rise from $237 billion in 2000 to $810 billion in 2011 or from 2.4% of gross domestic product (GDP) in 2001 to 4.6% of GDP in 2011.[3, 4] The Congressional Budget Office (CBO) January 2001 budget report projects a 2011 baseline total surplus of $889 billion.[5] The cumulative 10-year total surplus (2002 through 2011) as projected by OMB and following the constraints built into the baseline projections, reaches $4,996 billion, split between $2,445 billion in cumulative on-budget surplus and $2,551 billion in cumulative off-budget surplus.[6] CBO's 10-year cumulative surplus reaches $5,610 billion, split between $3,122 billion in on-budget surpluses and $2,488 billion in off-budget surpluses.

Proposals to use the on-budget surpluses range from large tax cuts to various spending increases, to no policy changes that would retain the whole surplus to reduce federal debt.[7] Any use of the surpluses for tax cuts or spending increases takes funds away from debt reduction. Proposals that have appeared in the last two years would use some portion of the projected on-budget surplus for spending increases or tax cuts, but would leave all of the off-budget and a significant part of the on-budget surplus for debt reduction. Opponents of the proposals to use large amounts of the on-budget surpluses point to the likelihood that, among other things, the proposed policy changes will have results different from those expected because the proposals and the expected results are based on 10-year budget and economic projections that are themselves inherently uncertain. They point out that CBO stated in its January 2001 budget report that:

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[2]On-budget surpluses exclude the surpluses of Social Security and the Postal Service.

[3]The baseline projections assume no changes from current policy. They include adjustments for inflation in discretionary spending and eligible population growth. They assume that most expiring budget provisions (both tax and mandatory spending), will expire.

[4]Unless otherwise indicated, all years are fiscal years.

[5]CBO, *Economic and Budget Outlook:FY2001-2011*, Jan. 31, 2001.

[6]OMB, *FY2002 Economic Outlook, Highlights from FY1994 to FY2001, FY2002 Baseline Projections*, Jan. 16, 2001.

[7]Surpluses will reduce federal debt held by the public. They do not affect federal debt held by (federal) government accounts.

> Looking forward five or 10 years allows the Congress to consider the longer-term budgetary implications of policy changes. But it also increases the likelihood that budgetary decisions will be made on the basis of projections that later turn out to have been far wrong.[8]

There is concern that a large change in policy now, especially one that uses much of the on-budget surplus, based on inherently wobbly 10-year budget projections, might lead to serious budgetary or fiscal problems sometime during or after that period. This part of the argument about whether or not to institute major policy changes has little to do with the value of the proposed changes to society. Instead, the focus is on an uncertain 10-year budget outlook on which to base the decision. If one accepts the (relative) accuracy of the budget projections, the debate over policy changes moves to whether they are good or bad for the Nation, along with the debates over the details of the proposal(s). If one worries about the (relative) accuracy of the budget projections, then the debate may remain focused on the possible appropriateness or inappropriateness of major long-term policy change.[9]

## The Inevitability of Uncertain Budget Projections

The future is unknown. Attempts to predict the future are inherently uncertain. The budget estimates and forecasts produced by CBO and OMB, especially those looking five to 10 years into the future are unlikely to be any more than approximations of what that future might look like. Assuming that these projections are accurate or that they approximate the most likely future outcome, they may lead to substantial errors in policy decisions. CBO includes a chapter, *The Uncertainty of Budget Projections*, in its January 2001 budget report.

The many difficulties of producing the estimates and projections are generally acknowledged by both CBO and OMB in their respective budget reports. In 2001, CBO included two alternative budget projections for its mid-range baseline estimate in its budget report. The "alternative scenarios" were based on substantial differences in the economic and technical assumptions underlying the projections.[10] These alternatives produce large differences in budgetary outcomes. OMB documents in the President's budget show the effects on the budget of changes in selected economic variables such as real economic growth, the rate of inflation, or interest rates over five years.

The alternative budget projections from CBO hint at the difficulties these organizations face in producing budget estimates and projections. The complexities of the budget itself need to be meshed with the budget's interactions with and dependence on the assumptions about the economy and the technical components of

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[8]CBO. *The Budget and Economic Outlook: Fiscal Years 2002-2011*. January 2000. p. 94.

[9]The budget and the economy will come under severe pressure during the second decade of this century as the baby-boom population begins to retire. Some have argued that keeping the surpluses intact for debt reduction and for their positive effect on national savings may mitigate, but not eliminate, the future pressure on the budget.

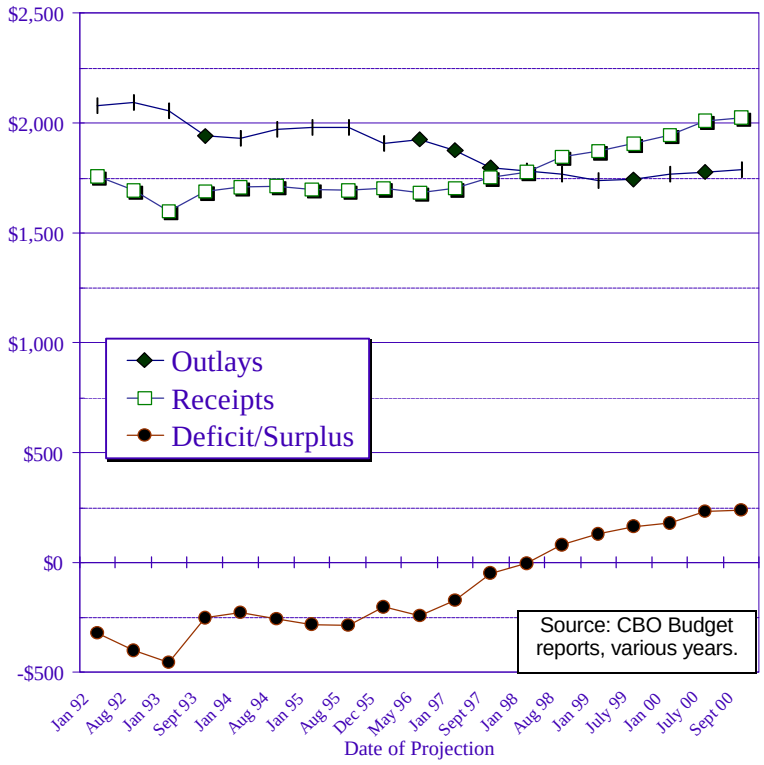
[10]See the discussion in chapter 5, The Uncertainty of Budget Projections, in the *Budget and Economic Outlook: Fiscal Years 2002-20110*, Jan. 2001.

budgeting to produce budget estimates and projections. Both CBO and OMB have developed budget models that attempt to reflect the budget and its interactions with the economy and the population. They use past patterns of interactions combined with economic and other expectations to produce the short-term estimates and longer-term projections of the government's budget.

## Fiscal Year 2000 Projections and Estimates

Fiscal year 2000 ended on September 30, 2000. The actual budget results for that year put the surplus at $326 billion, total receipts at $2,025 billion, and outlays at $1,789 billion. These budget totals for FY2000 differed markedly from the amounts that CBO first projected for FY2000 in January 1992. These initial projections foresaw a *deficit* of $321 billion, total receipts of $1,758 billion, and total outlays of $2,079 billion. Figure 1 presents the sequence of CBO projections for 2000 since 1992. Each period on the graph represents CBO's baseline estimate for 2000 from its annual winter (usually January) and summer (these reports have ranged from May to September) budget reports for the period 1992 through 2000. The rules CBO needed to follow at that time (and still needs to follow) in constructing its baseline estimates and projections can affect the estimate's accuracy. These rules included assuming no policy change from existing government policy, that the existing discretionary spending caps (the ones in place at the time of the estimate or projections) would be achieved, and that various expiring policy provisions would be allowed to expire whether or not that was actually likely to happen.

**Figure 1. CBO Projections for FY2000 Beginning in January 1992**
(in billions of dollars)

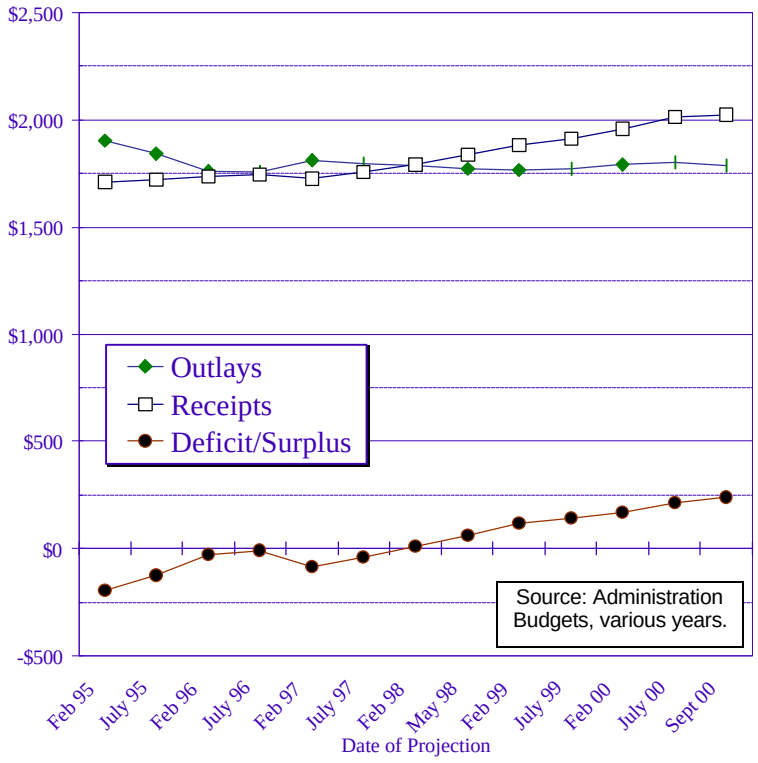



The President's budget documents provide a five-year history of FY2000 projections. The President's FY1996 budget (February 6, 1995) projected a FY2000 *deficit* of $194 billion, receipts of $1,711 billion and outlays of $1,905 billion. Figure 2 parallels Figure 1 data from CBO, presenting the Administration's projections of the FY2000 budget totals from its various budget documents during the period from

February 1995 through June 2000. Unlike CBO's estimates and projections, the OMB budget estimates incorporated proposed or expected policy changes into its forecasts. Other differences between the two agencies' projections include estimating techniques and assumptions, such as their respective economic outlooks, all of which contribute to the differences between their projections over the years.

The underlying reason for the changes in budget estimates over time is that the information needed to make the estimates is available only in the unknown future. The projections and estimates rely on assumptions about future economic conditions and policy decisions and the various interactions of the budget with these factors. As the estimates are revised over time, CBO, in its budget reports, provides estimates in three categories to explain the differences between the previous and current estimates. These three categories that CBO uses are: the effects on the budget of recent policy changes; the effects of change on the budget from changes in forecast economic conditions; and the effects on the budget of technical revisions. The fiscal policy changes component reflects the effect on the budget of legislation adopted since the previous estimate. These can be tax or spending cuts or increases or any other legislative change that modifies spending or receipts. The effect of economic changes, such as faster or slower real growth, or higher or lower employment or interest rates, or change in productivity growth, makes up the second category. The third category, technical revisions, is a catchall for the factors that do not fit neatly into the first two groupings. CBO states that the technical revisions

**Figure 2. Administration Projections for FY2000 Beginning in February 1995**
(in billions of dollars)




> are defined as any changes that are not ascribed to new legislation or to changes in the macroeconomic forecast. Technical changes could be economic in nature but are not tied to CBO's economic forecast.... A variety of other factors could also produce technical changes, such as revised assumptions about the number of people who will qualify to receive various benefits, different estimates of the level

of benefits they will use, and adjustments to the rate at which discretionary programs will spend their budget authority.[11]

Over the nine-year period 1992 through 2000, the economy consistently performed better than expected. CBO assumed in 1992 that real economic growth would stay at around 2% a year for the 1998-2002 period, that unemployment would remain about 5.5%, and that short-term interest rates would stick at 5.6%. For the years 1998 through 2000, the actual variables showed real economic growth rates averaged almost 4.3%, the unemployment rate averaged 4.1%, and short-term interest rates averaged 5.1%. The substantially better than originally forecast economic conditions contributed significantly to the improved budget outcome for FY2000.[12] Faster than projected economic growth combined with lower than expected unemployment rates increased federal revenues (above the expected levels) reduced federal spending (below the expected levels) in numerous federal unemployment-related programs during these years.

The faster economic growth also contributed indirectly to the shrinking deficits and growing surpluses by altering the technical revisions, especially for revenues. Incomes grew larger, pushing large numbers of taxpayers into higher tax brackets. The larger incomes combined with the movement into higher tax brackets rapidly increased federal revenues above expectations, especially during the last several years. CBO's tables showing the causes of the changes in the budget estimates attribute slightly more of the change to changes in economic conditions and somewhat less to technical revisions. Only a small amount of the difference is shown coming from legislative changes at least during the last few years.[13]

## Current Estimates and Projections

The most recent 10-year budget projections from CBO and OMB, from the January 2001 reports (no specific date has been set for the presentation of the Bush Administration's new budget proposals), continue to indicate extraordinarily positive expectations for the budget throughout the forecast period. CBO shows the total surplus rising from $236 billion in FY2000 to $889 billion in FY2011 (in its midrange baseline projections "for the economy and the budget, based on past and current

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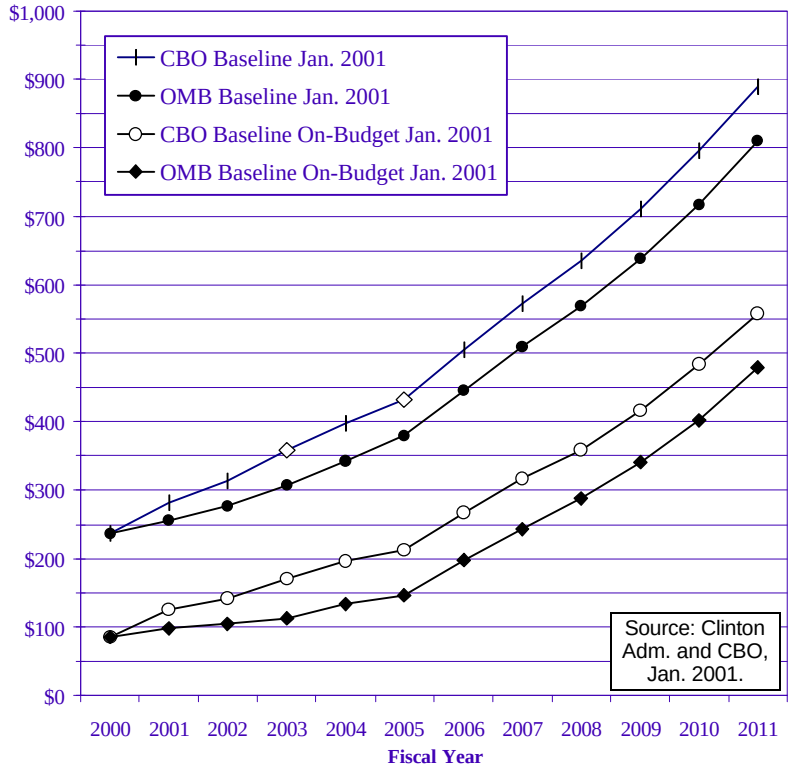
[11]CBO, *The Budget and Economic Outlook: Fiscal Years 2001-2010,* Jan. 2000, p. 18.

[12]The continued projections of deficits during the late 1990s may have contributed to their elimination by encouraging constraint in appropriations and other legislation that might have increased spending or reduced receipts.

[13]The expected effects of earlier legislative changes, such as the Omnibus Budget Reconciliation Act of 1993 (OBRA-93) would have been fully incorporated into the CBO projections from January 1992.

trends and the assumption that current policies are not changed").[14] OMB projects the baseline total surplus rising to $810 billion in FY2011. The on-budget surplus becomes large in both projections, rising to $479 billion in the Clinton Administration's final budget document and to $558 billion in the CBO report in FY2011. Figure 3 provides the path of the total and on-budget baseline surplus projections for the period 2000 through 2011.

**Figure 3. Surplus Projections, FY2000-2011**
(in billions of dollars)




CBO fully discusses the uncertainty of the 10-year budget projections in its budget reports. In its summer 2000 budget report, CBO stated:

> [The] long time horizon...increases the likelihood that substantial discrepancies will emerge between actual results and projections. Since each year's estimates build on those of the previous year, longer projection periods imply a greater chance that errors will compound and will produce more uncertainty in the estimates used to make policy decisions.[15]

In its January 2001 budget report, CBO stated:

> ... considerable uncertainty surrounds...[budget and economic] projections for two reasons. First, future legislation is likely to alter the paths of federal spending and revenues. Second, the U.S. economy and the federal budget are highly complex and are affected by many economic and technical factors that are difficult to predict. As a result, actual budgetary outcomes will almost certainly differ from the Congressional Budget Office's baseline projections.[16]

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[14]CBO. *Budget and Economic Outlook: FY2002-2011*, Jan. 31, 2001, p. xviii.

[15]CBO, *The Budget and Economic Outlook: An Update*, July 2000, p. 22.

[16]CBO, *The Budget and Economic Outlook: Fiscal Years 2001-2010*, Jan. 2000, p. 97.

OMB is generally less explicit than CBO in its reports about the uncertainty of its budget projections, but the President's budget contains information on the effects of different economic conditions on the budget. In the *Economic Assumptions* chapter in the Analytical Perspectives volume of the FY2001 budget (February 2000), OMB states:

> 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.[17]

The final Clinton Administration budget document included a chapter (Current Services Estimates and the Pending Policy Agenda) that discusses some of the anomalies of the budget baseline rules and how they create some of the inaccuracies in the estimates. For instance, since errors should be expected in the economic assumptions used in the budget projections, errors in the budget projections should also be expected. This does not imply that budget projections are of no use, only that they need to be used with caution with regard to their predictive ability.

Other observers noted problems that they found with the 10-year budget forecasts. Alan Auerbach and William Gale, in a report on expected budget surpluses and tax cut proposals in the publication *Tax Notes,* state that:

> The short-term (10-year) on-budget surplus is based on what we regard as unrealistically low assumptions regarding the level and path of real discretionary spending. The surplus is also based on the assumption that recent increases in tax revenues relative to GDP will largely prove permanent.[18]

A report from the Center on Budget and Policy Priorities contends that CBO's baseline projections overstate the size of the surplus expected over the next 10 years.[19] The report argues, among other things, that discretionary spending has been and continues to grow at rates greater than inflation and that the budget creation rules under which CBO and OMB produce their baseline estimates do not reflect this. The report further argues that the rules governing scheduled future changes in revenues and mandatory spending are not realistic. The rules require that revenue provisions that are scheduled to expire be allowed to, even if the provision has been reauthorized repeatedly in the past. A smaller surplus slows the fall in federal debt held by the public, which in turn slows the fall in the government's interest payments. The higher interest payments further erode the expected surpluses.

**Reasonable Variations in Factors Affecting the Budget.** There are an almost endless number of reasonable variations in the multitude of factors underlying the budget projections. These alternative assumptions are not necessarily more or

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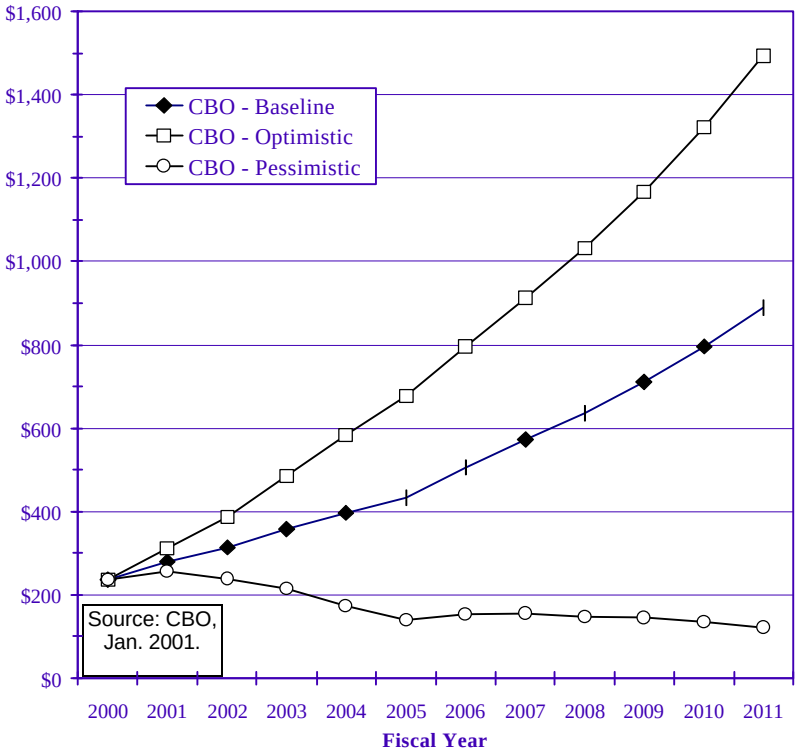
[17]OMB, *The Budget of the United States Government for Fiscal Year 2001, Analytical Perspectives*, Feb. 2000, p. 14.

[18]Alan J. Auerbach and William G. Gale, "Does the Budget Surplus Justify Big Tax Cuts?: Updates and Extensions," *Tax Notes*, Oct. 18, 1999: 369-376

[19]Robert Greenstein, *Can the New Surplus Projections Accommodate a Large Tax Cut,* Center on Budget and Policy Priorities, Jan. 4, 2001.

**Figure 4. CBO's Alternative Scenarios, FY2000-2011**
(in billions of dollars)




less reasonable or accurate than the assumptions used by CBO and OMB in producing their budget projections. Of the many possibilities, different economic assumptions that underlie the budget estimates and projections are likely to produce the most substantial changes in the budget projections. Variations in the technical aspects of budget projections (such as the relationship between national income and personal income tax collections) can also have substantial effects on the budget projections.

CBO's January 2001 budget report (as in the one from January 2000) included what CBO labeled as "alternative scenarios about future trends" in the budget. These consisted of taking its midrange baseline and adjusting it for two "apparently reasonable" alternative economic paths. As CBO put it, these are,

> referred to as the optimistic and pessimistic trend scenarios...[and] are intended to reflect assumptions that – although systematically different from the ones in the baseline projection – still seem reasonable to CBO analysts.[20]

The surpluses over the 10 years of the optimistic and pessimistic alternatives and the midrange baseline are shown in figure 4. The wide spread in the outcome is indicative of the range of possibilities that might occur under reasonable differences in underlying economic and technical assumptions. CBO's budget report includes a diagram containing an even wider range of possible outcomes for the surplus and deficit through 2006. The extremes, with small probabilities of occurring, produce larger surpluses than the optimistic scenario and smaller surpluses (and even deficits) compared to the pessimistic scenario.

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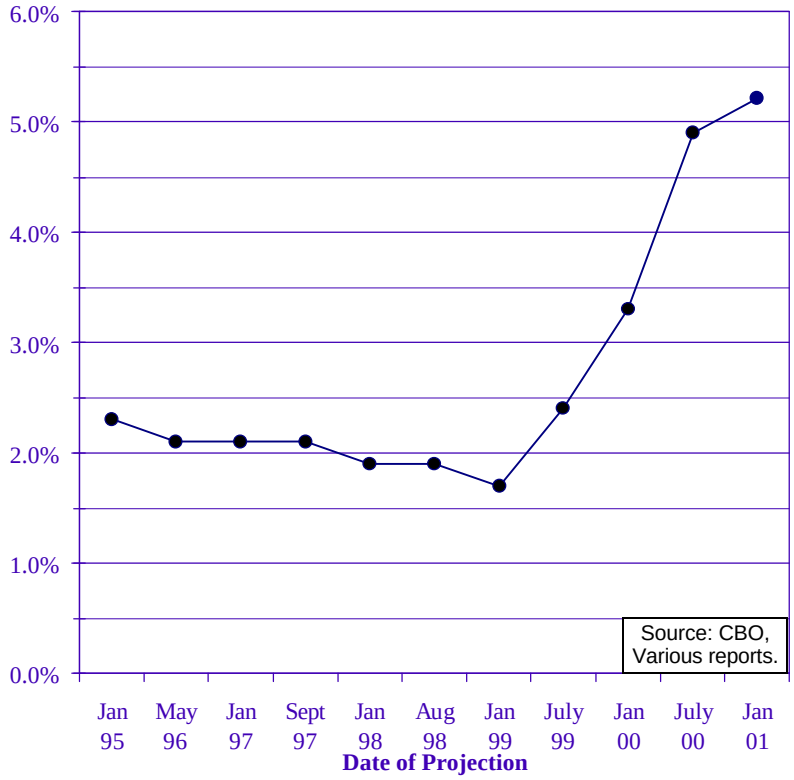
[20]CBO, *The Budget and Economic Outlook: Fiscal Years 2002-2011*, Jan. 2001, p. 98.

The differences in many of these underlying assumptions do not necessarily seem very large. In the example from CBO that was used to produce figure 4, the optimistic scenario assumes that trend productivity grows at 3.2% a year rather than 2.7% in the baseline and the (historical) 1.5% a year in the pessimistic scenario. The pessimistic scenario assumes that Medicare and Medicaid spending grows 1% faster than in the baseline, while the optimistic scenario has these programs growing 1% slower than the baseline. The optimistic scenario assumes a continuation of the increase in personal tax liabilities while the pessimistic scenario expects them to fade away over time. Even this wide range of outcome possibilities is not necessarily wide enough. Among other substantial variations that can occur in the underlying factors, CBO notes that the current uncertainty over predicting future productivity growth and the large effect differences in this variable can have on future budget outcomes. Figure 5 provides a visual history of the variability in CBO's estimates of the percentage change in real GDP for (calendar year) 2000. The period covers six years beginning in January 1995.

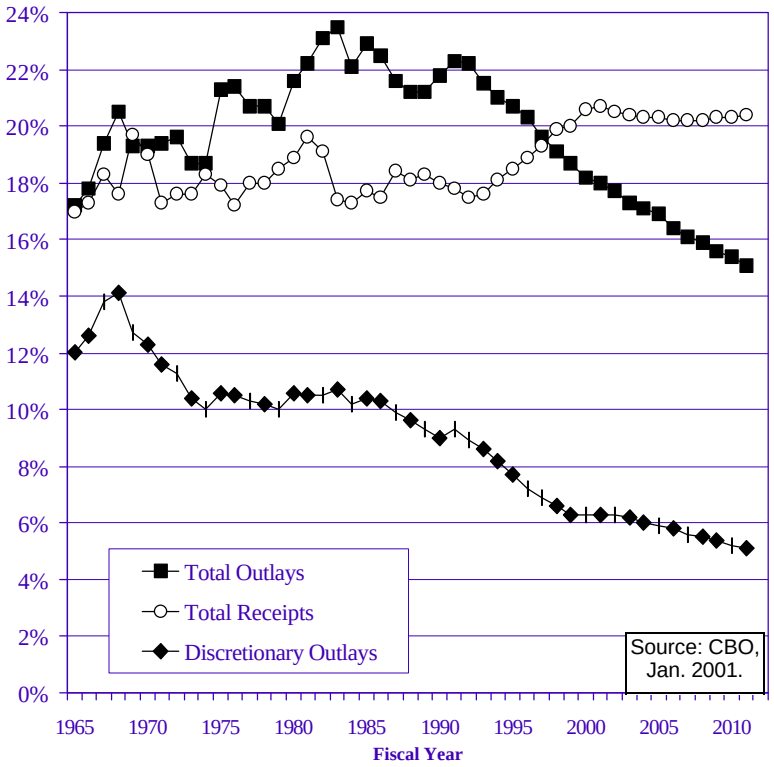
**Figure 5. CBO Projections of the Percentage Change in Real GDP for Calendar Year 2000**
(in percent)




There are other possibilities in addition to variations in the underlying economic and technical factors. Congress and the President may agree on major changes to tax or spending policies. This past year saw the adoption of appropriation legislation for FY2001 that exceeded the amount needed to keep pace with inflation. A continuation of this pattern, which some observers believe is likely, would increase discretionary spending above the amounts in the current projections. In addition, as pointed out in the Center on Budget and Policy Priorities report, increasing discretionary spending at the rate of inflation would still let it "... decline in purchasing power on a per-

person basis in coming years (since the U.S. population will continue to grow) ...."[21] Whether the public or Congress would be satisfied with such a continued fall in per capita discretionary outlays will partly determine the future level of spending.

**Figure 6. Total Receipts, Total Outlays, and Discretionary Spending as Percentages of GDP, 1965-2011**
(in percent)




Other legislative possibilities that are under discussion include adding some form of prescription drug benefit to the Medicare program. If adopted, the increase in spending would, without equally sized offsets, reduce the size of the projected surpluses. The same would be true of any legislation that increases spending above or reduces revenues below the levels foreseen in the existing projections. (Legislation could also be adopted that reduces spending or increases revenues from the levels in the projections, thereby probably increasing the surpluses and speeding the reduction in federal debt held by the public.)

In relative terms, several components of the federal budget are projected to reach levels of GDP that have not been seen since the early 1950s. Total federal spending is projected to fall to 15.6% of GDP from 18.2% in 2000. This would put total federal outlays at their lowest level since 1951. At the same time, revenues would remain at or near 20.0% of GDP throughout the decade, a level reached only during World War II and approached in 1969 (19.7%) and in 1981 (19.6%). Figure 6 shows total receipts and outlays as a percentage of GDP between 1965 and fiscal year 2011 (using the CBO January 2001 baseline projections). The figure also shows discretionary spending as a percentage of GDP.

As has already been mentioned, the future direction of discretionary spending is also in doubt. The CBO projections show discretionary spending continuing a decline as a share of GDP. This follows a pattern that has occurred sporadically since the end

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[21]Robert Greenstein, *Can the New Surplus Projections Accommodate a Large Tax Cut,* Center on Budget and Policy Priorities, Jan. 4, 2001, p. 7.

of the Viet Nam War and accelerated in the late 1980s. The pattern is shown in Figure 6. In some analysts' opinion (see above), the likelihood of keeping discretionary spending on this path, given pressures to increase defense and other components of discretionary spending, may prove difficult.

Whether these historically unusual levels of spending and receipts will actually occur (or can be maintained) may depend on how much the nature of the economy and technical aspects of the budget have actually changed in the last decade. If the last decade's budget environment is only a deviation from the norm and that deviation ends, the budget will shortly begin to reflect that norm and may revert to more historic percentages of GDP. If the environment in which the budget exists has undergone a fundamental shift in nature, these new spending and revenue levels as percentages of GDP may be sustainable, if the public wishes to sustain them. The uncertainty about whether a fundamental shift has occurred also contributes to the uncertainty of the budget projections.

## Conclusion

Federal budget projections and estimates have become a significant part of the congressional budget debates and broader congressional debates over future policies. The supporting assumptions that CBO and OMB and others must use to construct the projected future paths for spending and revenue and their respective components are themselves highly uncertain and changeable. The fundamental issue with all the estimates and projections is that almost nothing about the future can be known with any real certainty.

Certain aspects of what will happen in the future can be forecast with reasonable accuracy, such as knowing, approximately, the number of people retiring in the next 20 years. This can provide a reasonably solid base from which to estimate the future level of retirement benefits. But it cannot be completely accurate and it covers only part of the budget. Too much remains unknown. Will a change in economic conditions change retirement decisions? How will inflation affect the calculations? How accurate is the forecast for the need for and cost of medical care for those retiring? Longer life expectancy or medical breakthroughs can substantially alter future spending levels. These are the problems that underlie both the budget projections and the assumptions needed to make those projections. There is no way of assuring that the underlying assumptions used in the projections, the assumptions about real economic growth, productivity growth, inflation, interest rates, bad weather for farmers, natural disasters, military emergencies, scientific breakthroughs, or how any other thing that might affect the budget, will match what actually occurs.

Errors in any or all of these assumptions can throw off the budget projections by large or small amounts, especially in the budget projections that run 10 years (or more) into the future. In January 1995, CBO assumed that real economic growth would be 2.3% in calendar year 2000. Real economic growth that year was 5.2%. This mis-projection of an underlying assumption contributed to the differences between the originally forecast budget numbers and those that actually occurred. CBO projected a *deficit* of $297 billion for FY2000 in January 1995; the government

ended FY2000 with a *surplus* of $236 billion.[22] It is reasonable to be concerned that the current projections for FY2010 or FY2011 may not be any more accurate than those of the past.

[22]As shown earlier in the report, CBO's first budget projection for FY2000 was made in January 1992, which showed a deficit of $322 billion for that year.