CBO PAPER

PROJECTING FEDERAL TAX REVENUES AND THE EFFECT OF CHANGES IN TAX LAW

December 1998

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NOTES

Unless otherwise indicated, all years in this paper are fiscal years.

Numbers may not add up to totals because of rounding.

PREFACE

The report accompanying the House Legislative Branch Appropriations Bill for 1999 (Report 105-595) directed the Congressional Budget Office (CBO) to supply certain information to the leadership of the Congress. The report directed CBO to provide, among other information, estimates of the revenue effects of several changes to the tax law beginning in 1978, including separate estimates of the revenue effects of changes in the tax rate on capital gains; the assumptions underlying those estimates; an analysis of the discrepancies between those estimates and the revenues actually received; and a description of actions that CBO has taken to prevent future discrepancies. This paper is a summary of CBO's response.

The paper was written by Mark Booth of CBO's Tax Analysis Division, under the direction of Frank Sammartino. Noah Meyerson provided valuable research assistance.

Sherry Snyder edited the paper, and Liz Williams proofread it. Simone Thomas prepared the manuscript for publication. Laurie Brown prepared the electronic versions for CBO's World Wide Web site (http://www.cbo.gov).

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December 1998

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The Congressional Budget Office (CBO) and the Joint Committee on Taxation (JCT) share responsibility for providing the Congress with estimates of federal revenues. JCT is responsible for estimating the effect on federal revenues of all legislation considered in the Congress. That responsibility is specified in section 201(g) of the Budget Act:

> Revenue Estimates. For the purposes of revenue legislation which is income, estate and gift, excise, and payroll taxes (i.e., Social Security), considered or enacted in any session of Congress, the Congressional Budget Office shall use exclusively during that session of Congress revenue estimates provided to it by the Joint Committee on Taxation. During that session of Congress such revenue estimates shall be transmitted by the Congressional Budget Office to any committee of the House of Representatives or the Senate requesting such estimates, and shall be used by such Committees in determining such estimates. The Budget Committees of the Senate and House shall determine all estimates with respect to scoring points of order and with respect to the execution of the purposes of this Act.

CBO is responsible for estimating future revenues under current law as part of its 10-year baseline budget projections. If legislation affecting revenues is enacted during a session of Congress, JCT estimates the revenue effects and CBO incorporates those estimates into its next baseline revenue projection.

Although it is possible to compare the CBO baseline forecast with the actual revenues received, it is generally not possible to assess the accuracy of past revenue estimates of enacted legislation. Most legislative provisions are part of a large mix of changes, and identifying the revenues associated with a particular provision is impossible. Often, subsequent legislation obscures the effect of previous actions.

In some cases, however, a change in tax legislation may stand on its own. For example, it is possible to identify the revenues produced by a new tax, such as the luxury tax on automobiles enacted in 1990, but even then it is difficult to assess the accuracy of the revenue estimates for the legislation because economic conditions change. In the case of the new tax on expensive automobiles, actual revenues exceeded the estimates, but that could have occurred because the effect on automobile sales was misestimated or because some other factor affected the market for luxury cars.

In addition, new taxes may change revenues from existing taxes. A new excise tax, for example, is assumed to lower income and payroll tax revenues by drawing away income that would otherwise be taxable. Because it is not possible to observe what would have happened to those revenues in the absence of the new legislation, it is not possible to determine the magnitude of those indirect effects.

Evaluating revenue estimates for legislation that changes the tax treatment of realized capital gains poses the same problems. Although it is possible to observe actual capital gains realizations in the years following such legislation and to make some estimate of the revenues attributable to those gains, it is not possible to know what realizations would have been in the absence of that legislation. Actual realizations can be compared with the realizations predicted at the time the legislation was enacted, but again, any differences do not necessarily reflect misestimates of the effects of the legislation. The volatile path of capital gains realizations in the 1987-1996 period, when the tax treatment was stable, shows how difficult it is to isolate the effect of tax changes.

In the past 20 years, the Congress has enacted several laws that have changed the tax rates on capital gains. The Revenue Act of 1978 increased the partial exclusion for capital gains from 50 percent to 60 percent, which had the effect of reducing the top tax rate on capital gains from 35 percent to 28 percent. The Economic Recovery Tax Act of 1981 reduced overall tax rates, lowering the top rate on gains still further, to 20 percent. The Tax Reform Act of 1986 eliminated the partial exclusion for capital gains realizations, raising the top rate back to 28 percent, and the recently enacted Taxpayer Relief Act of 1997 reduced the top rate back to 20 percent.

CBO is not able to make even a limited comparison of predicted and actual realizations following enactment of legislation affecting capital gains before 1987. Although JCT prepared separate estimates of the revenue effect of the capital gains provisions in the 1978 act, it did not produce separate estimates of the change in capital gains realizations or in the revenues from gains that resulted from the change in the tax rate for the 1981 and 1986 acts. Revenue estimates for those provisions were subsumed in the estimates for the overall change in tax rates. The models CBO used before 1987 did not produce a separate baseline estimate for capital gains realizations. Thus, there were no baseline estimates of revenues from capital gains realizations before enactment of the 1978 legislation that could be compared with estimates from actual realizations after that. Although CBO can show the changes in capital gains realizations that were expected following the 1997 legislation, actual realizations are not yet available for years after 1996.

A very limited assessment of estimates of changes in federal taxes as a part of estimates for overall revenues can be gleaned, however, by comparing how well CBO's baseline forecast for total revenues following enactment of tax legislation compares with actual revenues. The next section describes CBO's forecasting procedures, followed by a comparison of projected and actual revenues and a discussion of the sources of errors in those forecasts.

CBO'S MODELS FOR PROJECTING FEDERAL TAX REVENUES

Every baseline revenue projection begins with the Congressional Budget Office's forecast for economic variables in the national income and product accounts (NIPAs) and for key indicators for labor and financial markets. Those variables include gross domestic product, taxable income, unemployment, inflation, and interest rates. The most important inputs for baseline revenue projections are the forecasts for growth in wage and salary income and in corporate profits, since those sources of income largely determine the tax base for individual income taxes, social insurance payroll taxes, and corporate income taxes, which together account for about 90 percent of federal revenues. The projection for the rate of inflation is also important because it determines the indexing adjustment for individual income tax exemptions, deductions, credits, and tax brackets. For the same projected nominal income, a higher projected rate of inflation will result in a lower estimate of income tax revenues.

For most revenue sources, CBO uses a series of econometric equations that project tax liabilities in future calendar years using the projected economic variables as inputs. The economic variables from CBO's forecast must first be adjusted to conform to the definitions used for tax purposes. For example, the primary NIPA measure of profits, and hence the variable projected in the economic forecast, is called economic profits—a measure of the returns to corporations that arise solely from current production. A corporation never calculates its own economic profits. For its income tax return, it measures and reports profits according to the rules specified in the Internal Revenue Code and as interpreted by the Internal Revenue Service (IRS) and the courts. Thus, CBO must make a number of adjustments to transform economic profits into an approximation of the IRS-based measure of profits.

For projecting individual income tax liabilities, CBO uses a microsimulation approach rather than econometric equations. The model for individual income taxes begins with the most recent sample of individual tax returns from the IRS. Using population forecasts from the Social Security Administration, CBO reweights the sample to reflect the growth in the number of single, married, and head-of-household tax filers between the sample year and the projection year. CBO then extrapolates reported income from each source in the sample year to the projection year so the growth in that source matches the growth projected for it in CBO's economic forecast.

Some sources of taxable income do not have a counterpart in the NIPAs and thus are not projected as part of CBO's economic forecast. Those variables, which must be estimated separately, include capital gains and distributions from pensions, 401(k) plans, and individual retirement accounts (IRAs). CBO must also make separate estimates for many other items, including the growth in both adjustments to income (such as IRA contributions) and itemized deductions. Having constructed the database for the projection year, CBO estimates tax liabilities using a detailed model of the tax rules for that year.

Before the Tax Reform Act of 1986, CBO used a different method for projecting individual income tax liabilities. That method consisted of first forecasting the aggregate individual income tax base (taxable income), based on CBO's economic forecast of income and employment, and then forecasting the appropriate average tax rate for that income by projecting how much taxable income would be in each income tax bracket. Multiplying projected taxable income by the projected average tax rate produced an estimate of income tax liabilities. That method did not produce separate estimates for the growth in components of income, such as capital gains realizations, nor was it possible to estimate the revenues attributable to the various income sources.

For all revenue sources, the next step after determining liabilities is to estimate the payments based on those liabilities. In the case of manufacturers' excise taxes, the payment schedules are known, and the payment of those liabilities is quite predictable. In the case of income taxes, however, taxpayers have some discretion, within legal limits, about when and in what form to pay those liabilities. For individual income taxes, analysts must estimate how much of the tax liability incurred in a particular calendar year will show up as payments in the concurrent fiscal year (either through withholding or through quarterly estimated payments) and how much will show up as final payments in April of the next fiscal year. Analysts must also estimate the payment pattern of corporations.

INCORPORATING REVENUE ESTIMATES FOR CHANGES IN FEDERAL TAX LAWS

As noted above, the Joint Committee on Taxation is required to provide the Congress with estimates of the revenue effects of proposed legislation. After a bill is passed by the Congress and signed by the President, CBO incorporates the JCT estimates for the provisions of the bill in its next baseline revenue projection by putting them directly into its models. For subsequent baselines, the estimates for provisions of legislation may change as new economic data and new information from tax returns become available.

JCT's estimates for changes in tax law reflect a wide variety of behavioral responses. Responses that are found to be large enough to affect revenues are included in the estimate unless they would be inconsistent with the levels of the macroeconomic variables assumed in the budget resolution. For example, in estimating the proposal to increase income tax rates for high-income individuals in the Omnibus Budget Reconciliation Act of 1993 (OBRA-93), JCT considered the following behavioral responses by those taxpayers: switching from assets that yield taxable income to assets that generate capital gains or to tax-exempt bonds, increasing the amount of itemized deductions, and shifting compensation from taxable to tax-exempt or tax-deferred forms. The JCT estimate, however, did not reflect possible changes in work effort and saving that could affect gross domestic product.

Estimates for changes in the tax treatment of capital gains realizations are another example. JCT estimates the revenue effect of a change in the capital gains tax rate by building from CBO's projection of total realizations of gains under current law. JCT then estimates how much taxpayers would change those realizations because of the proposal and calculates the change in revenues caused by that induced change in behavior. A rate decrease, for example, would lower the barrier to selling assets, which would induce people to realize more gains. Those induced revenue effects, which are based on econometric estimates of taxpayers' responses to past changes, typically offset a large portion of the revenue loss from the lower rate. If the increase in realizations is achieved at the cost of a switch from other taxable forms of income such as dividends, the estimate is adjusted for the revenue lost as a result of the shift.[1]

Although the macroeconomic effects of changes in federal tax laws are not included in JCT's revenue estimates for legislation, they are reflected in CBO's macroeconomic projection once the legislation has been enacted. CBO's September 1997 updated economic projection, for example, incorporated the effects of the Taxpayer Relief Act of 1997 on projected income, saving, and investment.[2]

DISCREPANCIES BETWEEN THE ESTIMATES AND REVENUES ACTUALLY RECEIVED

Assessing the accuracy of past revenue estimates of enacted legislation is generally not possible because there is no way to observe what revenues would have been in

1. For a description of the methodology that JCT used to estimate past capital gains proposals, see Joint Committee on Taxation, *Explanation of the Methodology Used to Estimate Proposals Affecting the Taxation of Income from Capital Gains,* Staff Pamphlet JCS-12-90 (March 27, 1990).

2. See Congressional Budget Office, *The Economic and Budget Outlook: An Update* (September 1997), pp. 14-15.

the absence of the legislation. Some assessment of those estimates can come from comparing how well CBO's baseline revenue forecast following enactment of tax legislation compares with actual revenues. But because economic conditions change and subsequent legislation obscures the effect of previous actions, it is not possible to ascribe all differences between actual and predicted revenues to misestimates of the legislation.

In its annual reports, CBO regularly compares its estimates for revenues, outlays, and the surplus or deficit with actual outcomes. In those analyses, CBO divides the difference between the revenue projection and actual outcomes into three categories: policy, economic, and technical differences. Although those categories help to explain the reasons for the differences, the lines between them are necessarily somewhat arbitrary.

Policy differences are relatively straightforward. They can arise because legislation is passed after the baseline forecast has been made. Baseline forecasts assume that current law will continue into the future (except for the expiration of excise taxes dedicated to trust funds). Thus, for example, although the January 1982 baseline incorporated the effects of legislation enacted in 1981, it did not foresee the passage of the Tax Equity and Fiscal Responsibility Act in September 1982—legislation that substantially increased revenues.

Economic differences arise if the actual performance of the economy differs from that projected in the baseline economic forecast. Information available at the end of the fiscal year is used to determine the portion of the differences between baseline revenue projections and actual revenue totals that should be ascribed to economic factors. That allocation is not subsequently adjusted even though revisions to data about GDP and taxable income continue to trickle in over a number of years, which would typically allocate more of the difference between projected and actual incomes to economic factors. Only differences that can be directly linked to the major NIPA variables are labeled economic in CBO's analysis. Other differences that might be tied to economic performance, such as growth in capital gains realizations or faster income growth for higher-income taxpayers, are not included in this category because they are not part of the forecast for the economic variables in the NIPAs.

Differences that do not arise directly from legislation or economic sources are classified as technical. In the case of revenues, technical differences stem from various factors, including changes in administrative tax rules, differences in the sources of taxable income not captured in the NIPA accounts (such as capital gains realizations or distributions from pensions, 401(k) plans, and IRAs), and changes in the relative amounts of income taxed at various rates.

Misestimates of the effects of changes in federal tax laws can show up as either technical or economic differences. For example, JCT's estimates for the Omnibus Budget Reconciliation Act of 1993 assumed that high-income taxpayers would respond to the higher marginal tax rates in a number of ways that would reduce their reported taxable income and thus lower tax revenues. If taxpayers had responded to a greater extent than was assumed in the estimates, CBO's baseline projections following enactment of OBRA-93 would have been too high. That misestimate would be labeled economic if the lower revenues resulted from economic variables, such as total wages, that were lower than projected. It would be labeled technical if revenues were lower for a given level of income—for example, if taxpayers increased their use of deductions.

The sources of differences (policy, economic, or technical factors) between the actual revenue totals for each budget year (the fiscal year following the year in which the estimate was made) and the revenues that CBO projected in the winter of the previous year are shown in Table 1. From 1985 to 1998, the total difference in CBO's forecasts for the budget year as a percentage of the actual revenues recorded has averaged 3.6 percent in absolute terms. (That absolute measure disregards whether the differences in the forecast error are positive or negative.) The total differences in the winter forecast for each current fiscal year are smaller than those for the budget year, measuring 1.5 percent, on average, in absolute terms. It is clearly more difficult to forecast further into the future. Those measures of total differences, however, include the effect of subsequent legislation that could not be foreseen. A more accurate measure of the forecast error would exclude differences resulting from policy.

Looking only at the combined measure of economic and technical differences potentially gives analysts a less distorted view than does looking at them separately. CBO's separate designation of economic and technical differences does not account for historical revisions to economic data. If, for example, data on income are revised for past years, CBO may discover that what it had originally considered economic differences may actually have been technical differences. Thus, combining the economic and technical differences avoids problems caused by changes in the mix.

CBO's history of combined economic and technical revisions to its forecasts produced in the winter for the following budget year shows both positive and negative errors (see Figure 1). When the value was negative, actual revenues were lower than CBO had projected. For example, in CBO's winter 1982 baseline, actual revenues for fiscal year 1983 were almost 12 percent lower than CBO had projected. Conversely, actual revenues for fiscal year 1996 were about 2.4 percent higher than CBO had projected in the winter of 1995.

TABLE 1. SOURCES OF DIFFERENCES BETWEEN ACTUAL REVENUE TOTALS AND CBO'S JANUARY PROJECTION FOR THE BUDGET YEAR, FISCAL YEARS 1977-1998 (In billions of dollars)

Budget Year[a]	Actual Total for Fiscal Year	Difference (Actual minus estimates) Total	Policy	Economic	Technical	Total Difference as a Percentage of Actual	Economic and Technical Difference as a Percentage of Actual
1977	356	-16	0	n.a.	n.a.	-4.5	-4.5
1978	400	-7	0	n.a.	n.a.	-1.9	-1.9
1979	463	6	19	n.a.	n.a.	1.4	-2.7
1980	517	15	0	n.a.	n.a.	2.9	2.9
1981	599	17	-2	n.a.	n.a.	2.9	3.2
1982	618	-91	-39	n.a.	n.a.	-14.8	-8.5
1983	601	-51	18	n.a.	n.a.	-8.6	-11.6
1984	666	13	5	n.a.	n.a.	2.0	1.1
1985	734	1	10	-14	5	0.1	-1.2
1986	769	-19	2	-18	-3	-2.5	-2.7
1987	854	10	20	-36	26	1.2	-1.2
1988	909	9	11	0	-2	1.0	-0.3
1989	991	38	-1	37	2	3.9	3.9
1990	1,032	-36	0	7	-43	-3.5	-3.5
1991	1,055	-82	18	-50	-50	-7.8	-9.5
1992	1,091	-79	-12	-46	-20	-7.2	-6.0
1993	1,154	-19	5	-28	4	-1.6	-2.1
1994	1,259	43	26	12	5	3.4	1.4
1995	1,352	14	1	16	-3	1.0	0.9
1996	1,453	35	-0	24	11	2.4	2.4
1997	1,579	96	3	46	46	6.1	5.9
1998	1,721	154	-8	48	115	9.0	9.5
Mean[b]		12	5	0	7	0.4	-0.2
Mean Absolute[b,c]		45	8	27	24	3.6	3.6

SOURCE: Congressional Budget Office.

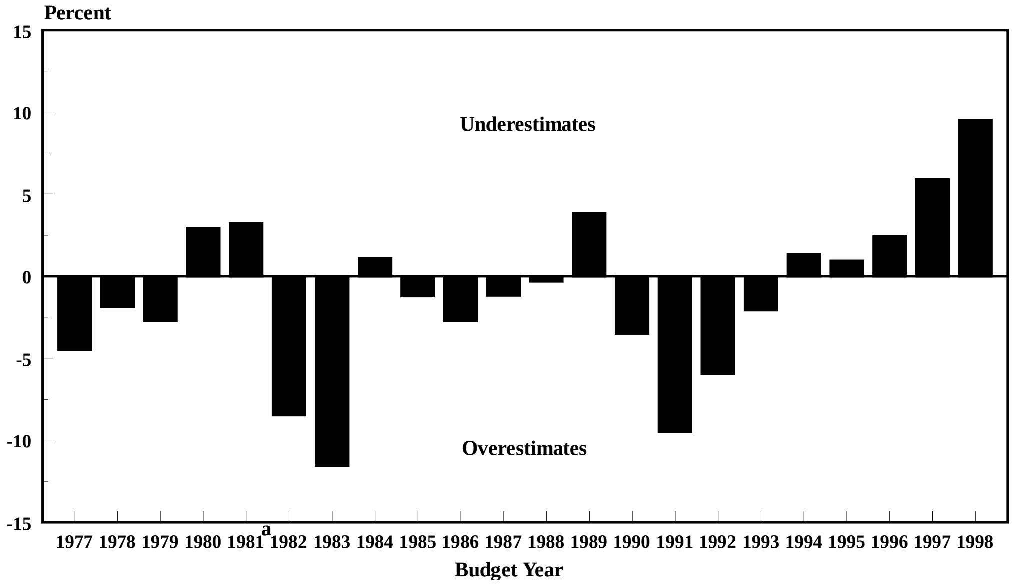
NOTE: n.a. = not available. CBO did not separate the economic and technical differences at that time.

a. The budget year is the fiscal year following the year in which the estimate was made.

b. The mean and mean absolute are for fiscal years 1985 to 1998.

c. The mean absolute disregards whether the differences are positive or negative.

FIGURE 1. DIFFERENCES BETWEEN ACTUAL REVENUE TOTALS AND CBO'S JANUARY PROJECTION FOR THE BUDGET YEAR, NET OF POLICY EFFECTS



SOURCE: Congressional Budget Office.

NOTES: The differences reflect actual revenues minus the January estimates as a percentage of actual revenues.

The budget year is the fiscal year following the year in which the estimate was made.

a. The 1981 estimate is from July.

The pattern of combined technical and economic differences since 1977 suggests that the differences are primarily related to the unanticipated fluctuations of the business cycle rather than to the unanticipated effects of changes in legislation. That is not surprising, since forecasting turning points in the economy is one of the most difficult challenges facing economic forecasters. Missing those turning points causes economic differences. In addition, to the extent that technical differences are related to the economic differences, the two types combine to cause relatively large forecast errors during economic recessions and booms. The two types of differences can be related because certain factors that are important for forecasting revenues but that are not captured in CBO's economic forecast (incomes from stock market activity, for example) are often related to economic performance.

The influence of the business cycle on CBO's combined economic and technical revisions is unmistakable. The recessions of 1981-1982 and 1990-1991 correspond to the forecasts that had the largest shortfalls in revenues for economic and technical reasons. Similarly, the recent period in which the economy has grown above its long-term potential level of output has corresponded to revenues that are unexpectedly far above projected levels. Only in those unusual periods has the average error in CBO's winter forecast (not attributable to legislative changes) for the budget year exceeded 5 percent in either direction. The winter 1996 and 1997 forecasts for fiscal years 1997 and 1998, respectively, are the only forecasts in which the error exceeded a positive 5 percent. The other four forecasts with errors of that magnitude in a negative direction were produced during the recession years of 1981-1982 and 1990-1991.

ESTIMATES OF REVENUES GENERATED BY CHANGES IN FEDERAL TAX LAWS

Since 1977, the Congress has enacted nine major pieces of tax legislation—the Revenue Act of 1978 , the Economic Recovery Tax Act of 1981 (ERTA-81), the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA-82), the Deficit Reduction Act of 1984 (DEFRA-84), the Tax Reform Act of 1986 (TRA-86), the Omnibus Budget Reconciliation Acts of 1987, 1990, and 1993, and most recently, the Taxpayer Relief Act of 1997 (TRA-97).[3] Five of those nine pieces of legislation were estimated to increase tax revenues; the Revenue Act of 1978, ERTA-81, and TRA-97 lowered taxes; and TRA-86 was estimated to be roughly revenue neutral. The history of forecast errors does not suggest a pattern regarding enactment of new tax legislation. In particular, there is no evidence that CBO has underpredicted revenues following tax cuts or overpredicted revenues following tax increases.

3. This list does not include less comprehensive legislation, such as the Crude Oil Windfall Profit Tax Act of 1980, the Surface Transportation Assistance Act of 1982, and the Social Security Amendments of 1983.

The following sections describe those changes in tax laws, document the revenue effect that CBO expected at the time, and assess the subsequent overall forecast error, including that arising from subsequent legislation.

REVENUE ACT OF 1978

Enacted on November 6, the Revenue Act of 1978 provided tax reductions to individuals and, to a lesser extent, businesses and other taxpayers.

For individuals, the act increased the personal exemption and the zero bracket amount; replaced the tax rate schedule, which had 25 tax brackets, with a new schedule with 15 wider brackets; and expanded the earned income tax credit. The act also increased from 50 percent to 60 percent the exclusion from gross income for individuals' long-term capital gains. That provision reduced the top effective marginal tax rate on capital gains from 35 percent to 28 percent (excluding the effects of the minimum tax).

Furthermore, the scheduled introduction of carryover of basis at death was deferred until 1980 (and later repealed). The new law also reduced the alternative corporate capital gains tax rate from 30 percent to 28 percent.

At the time, CBO and the Joint Committee on Taxation estimated that the increased exclusion for capital gains would reduce revenues by about $8 billion from 1979 through 1983 (see Table 2). About $2 billion of that amount, or about 25 percent, would be offset by estimated increases in revenues from induced capital gains realizations, leaving a net revenue loss of about $6 billion over the 1979-1983 period.

The Revenue Act of 1978 also lowered corporate income tax rates. The top statutory tax rate on corporations was reduced from 48 percent to 46 percent, and the lower statutory tax rates were reduced to a similar extent. The act also made permanent the 10 percent investment tax credit for purchases of certain business property.

JCT estimated that the act would reduce taxes by $38 billion in 1980, rising to $58 billion by 1983, and CBO incorporated those amounts into its January 1979 baseline. Following enactment, actual receipts were first higher and then lower than CBO had projected (see Table 3). Actual revenues exceeded the level projected for each of the first three years of the projection period. The forecast error (economic,

TABLE 2. REVENUE ACT OF 1978: PROJECTED REVENUE EFFECTS INCORPORATED INTO CBO'S JANUARY 1979 BASELINE (By fiscal year, in billions of dollars)

	1979	1980	1981	1982	1983
Individual Income Taxes	-7.9	-14.3	-16.3	-19.0	-22.2
Tax Shelters and Partnerships	a	a	a	a	a
Corporate Income Taxes	-2.0	-4.3	-5.5	-6.1	-6.3
Capital Gains and Minimum Tax					
Capital gains exclusion	-0.1	-1.8	-1.9	-2.0	-2.2
Effect from induced capital gains realizations	0.1	0.6	0.5	0.4	0.3
Minimum tax	-0.2	-1.1	-1.2	-1.3	-1.4
Miscellaneous Provisions	-0.1	-0.2	-0.3	-0.4	-0.4
Extending or Making Permanent Certain Provisions	-8.9	-16.5	-19.5	-23.8	-25.9
Total Revenue Effect	-19.3	-37.5	-44.2	-52.1	-58.0

SOURCES: Congressional Budget Office; Joint Committee on Taxation.

a. Less than $50 million.

TABLE 3. FORECAST ACCURACY OF CBO'S BASELINE RELEASED AFTER THE REVENUE ACT OF 1978 (By fiscal year, in billions of dollars)

	1979	1980	1981	1982	1983	1984
Overall						
CBO's January 1979 Baseline	453	502	574	661	749	849
Actual Receipts	463	517	599	618	601	666
Difference (Actual minus baseline)	10	15	25	-43	-148	-183
Percentage Difference (Actual minus baseline)	2.2	2.9	4.2	-7.0	-24.7	-27.4
By Type of Tax						
CBO's January 1979 Baseline						
Individual income taxes	203	226	264	310	361	415
Corporate income taxes	68	73	80	89	100	112
Social insurance taxes	143	161	187	215	238	268
Excise and other taxes	40	42	45	47	49	53
Actual Receipts						
Individual income taxes	218	244	286	298	289	298
Corporate income taxes	66	65	61	49	37	57
Social insurance taxes	139	158	183	202	209	239
Excise and other taxes	41	51	70	69	66	72
Difference (Actual minus baseline)						
Individual income taxes	15	18	22	-12	-72	-117
Corporate income taxes	-2	-8	-19	-40	-63	-55
Social insurance taxes	-4	-3	-4	-14	-29	-29
Excise and other taxes	1	9	25	22	17	19
Percentage Difference (Actual minus baseline)						
Individual income taxes	6.9	7.4	7.7	-4.1	-25.0	-39.1
Corporate income taxes	-3.0	-13.0	-30.9	-80.9	-170.3	-96.8
Social insurance taxes	-2.7	-2.0	-2.4	-6.7	-13.9	-11.9
Excise and other taxes	1.5	17.0	35.3	32.3	25.4	26.3

SOURCE: Congressional Budget Office.

technical, and policy differences) for 1981 was $25 billion, or 4.2 percent. For the final three years of the projection period, however, actual revenues fell significantly short of the projected amount. The recession of 1981-1982 and the tax reductions enacted in the Economic Recovery Tax Act of 1981 largely explain the shortfall in projected revenues over the 1982-1984 period.

One method CBO uses suggests that about 60 percent of the shortfall in receipts in 1984 was caused by subsequent legislation—the tax cuts enacted in 1981, as partially offset by legislation enacted in 1982 and 1984—and 40 percent by other factors such as the recession. That method assumes that the total revenue effect of the three pieces of legislation for 1984 equals the sum of the effects estimated at the time of enactment (shown separately in the following sections). However, the economic and other assumptions underlying those estimates of legislation are never revised, as described earlier. For example, the estimates of legislation reflect projected rather than actual levels of economic activity. Thus, the method may only approximately measure the causes of the shortfall.

ECONOMIC RECOVERY TAX ACT OF 1981

The Economic Recovery Tax Act of 1981 was enacted into law on August 13. It significantly reduced taxes for both individuals and corporations. The most important provisions affecting individuals were across-the-board reductions and the subsequent indexing of the bracket structure, the tax deduction for two-earner married couples, and a number of incentives to save. The act reduced individual income tax rates over a four-year period. Cutting the top marginal rate from 70 percent to 50 percent reduced the maximum rate on long-term capital gains to 20 percent. The act also provided for automatic annual adjustments in the individual income tax brackets, the zero bracket amount, and personal exemptions, beginning in calendar year 1985. Other, smaller tax reductions were instituted for certain excise taxes and estate and gift taxes.

ERTA-81 also expanded individual retirement accounts, in which people could invest their retirement savings. The act allowed participants in employer-sponsored pension plans to contribute to IRAs. It also increased the maximum amount of deductible contributions.

For businesses, ERTA-81 substantially reduced the tax burden on income from capital investments by significantly accelerating depreciation deductions for new property. The new depreciation system was called the accelerated cost recovery system (ACRS). The act also permitted companies that did not have sufficient taxable income to take advantage of ACRS through safe-harbor leasing. That leasing arrangement allowed the user of newly purchased equipment to transfer the tax benefits to a corporate investor.

JCT estimated that the revenue losses from the act would climb to $294 billion by 1987 (see Table 4). About half of that amount came from the cuts in individual income tax rates, including the reduction in the rate for long-term capital gains. (As explained earlier, separate estimates of the changes in revenues from a reduction in the capital gains rate are not available for the 1981 act.) Indexing and the ACRS each accounted for about 20 percent. The remaining 10 percent came from reducing certain excise taxes, estate and gift taxes, and other income taxes.

Actual receipts were lower than CBO had anticipated in its February 1982 projection (see Table 5). By 1984, actual receipts fell short of CBO's projection by $35 billion, or 5.2 percent. The 1981-1982 recession contributed significantly to the shortfall in revenues. The subsequent enactment of the Tax Equity and Fiscal Responsibility Act of 1982 mitigated that shortfall. According to estimates of the effects of the 1982 legislation, the overall shortfall would have been twice as large had the legislation not been enacted.

TAX EQUITY AND FISCAL RESPONSIBILITY ACT OF 1982

The Tax Equity and Fiscal Responsibility Act was enacted into law on September 3. It partly offset the tax cuts enacted in the Economic Recovery Tax Act of 1981, many of which had not fully taken effect.

Many of the provisions of TEFRA-82 affected businesses. The act repealed the acceleration of depreciation that had been scheduled for 1985 and 1986. It also scaled back several corporate tax preferences by 15 percent, including the bad-debt reserves of financial institutions and the percentage depletion for coal and iron ore. TEFRA-82 repealed the safe-harbor leasing that had been enacted in the previous year. The act also reduced the value of the investment tax credit by requiring the basis of assets to be adjusted for depreciation purposes by one-half of the amount of the investment credit.

For individuals, the act repealed the add-on minimum tax, added several new tax preferences to the alternative minimum tax, restructured the treatment of itemized deductions in the minimum tax, established a flat rate of 20 percent for the minimum tax, and increased the minimum tax exemption. The act also increased the floor under the itemized deductions for medical expenses from 3 percent of adjusted gross income to 5 percent. It also repealed the separate deduction for a portion of health insurance premiums.

TABLE 4. ECONOMIC RECOVERY TAX ACT OF 1981: PROJECTED REVENUE EFFECTS INCORPORATED INTO CBO'S FEBRUARY 1982 BASELINE (By fiscal year, in billions of dollars)

	1982	1983	1984	1985	1986	1987
Individual Income Taxes						
Rate cuts	-25	-65	-102	-116	-130	-147
Indexing	0	0	0	-12	-30	-51
ACRS	-2	-3	-4	-6	-8	-10
Other	-1	-6	-11	-13	-18	-22
Corporate Income Taxes						
ACRS	-10	-16	-23	-33	-44	-50
Other	-1	-1	-2	-3	-4	-4
Excise Taxes	-2	-1	-1	-2	-3	-3
Estate and Gift Taxes	a	-2	-4	-5	-6	-7
Total Revenue Effect	-39	-95	-148	-189	-244	-294

SOURCES: Congressional Budget Office; Joint Committee on Taxation.

NOTE: ACRS = accelerated cost recovery system.

a. Less than $500 million.

TABLE 5. FORECAST ACCURACY OF CBO'S BASELINE RELEASED AFTER THE ECONOMIC RECOVERY TAX ACT OF 1981
(By fiscal year, in billions of dollars)

	1982	1983	1984	1985	1986	1987
Overall						
CBO's February 1982 Baseline	631	652	701	763	818	882
Actual Receipts	618	601	666	734	769	854
Difference (Actual minus baseline)	-13	-51	-35	-29	-49	-28
Percentage Difference (Actual minus baseline)	-2.1	-8.6	-5.2	-3.9	-6.3	-3.2
By Type of Tax						
CBO's February 1982 Baseline						
Individual income taxes	300	303	316	344	367	396
Corporate income taxes	50	51	62	63	64	73
Social insurance taxes	209	227	250	282	313	339
Excise and other taxes	72	71	73	74	74	72
Actual Receipts						
Individual income taxes	298	289	298	335	349	393
Corporate income taxes	49	37	57	61	63	84
Social insurance taxes	202	209	239	265	284	303
Excise and other taxes	69	66	72	73	73	75
Difference (Actual minus baseline)						
Individual income taxes	-2	-14	-18	-10	-18	-3
Corporate income taxes	-1	-14	-5	-2	-1	11
Social insurance taxes	-8	-18	-11	-17	-29	-36
Excise and other taxes	-3	-5	-1	-1	-1	3
Percentage Difference (Actual minus baseline)						
Individual income taxes	-0.8	-4.9	-5.9	-2.8	-5.2	-0.9
Corporate income taxes	-1.6	-37.8	-9.0	-2.8	-1.4	13.0
Social insurance taxes	-3.7	-8.6	-4.4	-6.3	-10.3	-11.8
Excise and other taxes	-3.7	-8.1	-1.5	-1.2	-1.1	3.5

SOURCE: Congressional Budget Office.

TEFRA-82 also affected excise taxes. The act doubled the cigarette excise tax from 8 cents to 16 cents per pack through fiscal year 1985. It also increased the excise tax on telephone services through 1985, after which the tax would terminate. Other excise taxes were affected less significantly.

In all, JCT estimated that TEFRA-82 would raise revenues by amounts increasing to over $50 billion by 1987 (see Table 6). JCT estimated that the tax increases offset about two-thirds of the reductions in corporate taxes in the Economic Recovery Tax Act of 1981. Over half of the revenue increase in TEFRA-82 was estimated to have come from corporations, and individual income taxes accounted for most of the rest.

Subsequent legislation caused actual receipts to be higher than CBO projected in February 1983 (see Table 7). In 1985, actual revenues were $19 billion (2.6 percent) above CBO's projections. Most of that forecast error, however, appeared to be caused by the enactment of the Deficit Reduction Act of 1984 and other legislation. The economic and technical reestimates of the CBO baseline were both very small cumulatively over that period.

DEFICIT REDUCTION ACT OF 1984

The Deficit Reduction Act of 1984 was enacted into law on July 18. It raised revenues in a number of ways. First, the act postponed or repealed several tax reductions scheduled to take effect after 1984. Those reductions included the net interest exclusion, the increased ability to transfer tax benefits through leasing arrangements, the increased eligibility for expensed property, and lower rates for estate and gift taxes and telephone excise taxes.

In addition, the act limited the use of tax-exempt leasing. Certain property used by tax-exempt entities was required to be depreciated using less advantageous rules. The act also restricted the investment tax credit for such property.

The legislation included several other provisions that raised revenues from corporate and individual taxpayers. The rules for accounting for deferred payment transactions and the premature accrual of deductible business expenses were tightened. The act also increased the threshold for taxpayers averaging their income and allowed only the three preceding years' income to be included. In addition, it reduced the long-term holding period from more than one year to more than six months for capital gains and losses on property acquired after June 22, 1984 (and

TABLE 6. TAX EQUITY AND FISCAL RESPONSIBILITY ACT OF 1982: PROJECTED REVENUE EFFECTS INCORPORATED INTO CBO'S FEBRUARY 1983 BASELINE (By fiscal year, in billions of dollars)

	1983	1984	1985	1986	1987	1988
Individual Income Taxes	5	13	12	15	18	20
Corporate Income Taxes	7	16	19	26	32	31
Social Insurance Taxes	2	3	4	3	3	2
Excise Taxes						
Windfall profit taxes	a	a	a	a	a	a
Other	4	5	6	2	2	2
Estate and Gift Taxes	0	a	a	a	a	a
Total Revenue Effect	18	38	42	47	54	56

SOURCES: Congressional Budget Office; Joint Committee on Taxation.

a. Less than $500 million.

TABLE 7. FORECAST ACCURACY OF CBO'S BASELINE RELEASED AFTER THE TAX EQUITY AND FISCAL RESPONSIBILITY ACT OF 1982
(By fiscal year, in billions of dollars)

	1983	1984	1985	1986	1987	1988
Overall						
CBO's February 1983 Baseline	606	653	715	768	822	878
Actual Receipts	601	666	734	769	854	909
Difference (Actual minus baseline)	-5	13	19	1	32	31
Percentage Difference (Actual minus baseline)	-0.9	2.0	2.6	0.2	3.8	3.4
By Type of Tax						
CBO's February 1983 Baseline						
Individual income taxes	286	295	321	346	372	400
Corporate income taxes	40	56	65	74	83	88
Social insurance taxes	212	232	258	283	303	326
Excise and other taxes	67	70	72	64	64	64
Actual Receipts						
Individual income taxes	289	298	335	349	393	401
Corporate income taxes	37	57	61	63	84	95
Social insurance taxes	209	239	265	284	303	334
Excise and other taxes	66	72	73	73	75	79
Difference (Actual minus baseline)						
Individual income taxes	3	3	14	3	21	1
Corporate income taxes	-3	1	-4	-11	1	7
Social insurance taxes	-3	7	7	1	0	8
Excise and other taxes	-1	2	1	9	11	15
Percentage Difference (Actual minus baseline)						
Individual income taxes	1.0	1.1	4.0	0.9	5.2	0.3
Corporate income taxes	-8.1	1.6	-6.0	-17.3	1.1	6.9
Social insurance taxes	-1.4	3.1	2.7	0.3	0.1	2.5
Excise and other taxes	-2.0	2.6	1.5	12.6	14.2	19.3

SOURCE: Congressional Budget Office.

before January 1, 1988). The act also increased the tax rate on distilled spirits by $2 per proof gallon, lengthened from 15 years to 18 years the time over which real property could be depreciated, and completely restructured the taxation of life insurance companies.

JCT estimated that DEFRA-84 would raise $103 billion over the 1984-1989 period (see Table 8). Looking at the effects by type of provision, JCT estimated that postponing or repealing tax reductions scheduled in the future would raise an estimated $28 billion; the limits on tax-exempt leasing, $17 billion; the changes in accounting rules, $8 billion; and the modification of income averaging, $11 billion. The effect of the change in the holding period for capital gains was not separately identified.

Actual revenues fell short of the projections CBO made in August 1984 (see Table 9). CBO's revenue forecast for 1986 was $42 billion (5.4 percent) higher than the amount of revenues actually recorded for that year. Most of the error was attributed to economic factors. The forecast errors after 1986, also mostly attributed to economic factors, remained at about the same level. The combined revenue effects of the tax legislation enacted in 1986 and 1987 were estimated to be small.

TAX REFORM ACT OF 1986

The Tax Reform Act of 1986 was enacted into law on October 22. It has been the only complete revision of the Internal Revenue Code since 1954. Overall, it significantly reduced personal income tax liabilities and increased corporate liabilities.

The act made major cuts in personal income tax rates. The tax rate structure for ordinary income was streamlined to two rates—15 percent and 28 percent—replacing the previous schedule that assessed a top rate of 50 percent.

For capital gains, however, TRA-86 raised the effective tax rate. It eliminated the previous 60 percent exclusion of net long-term capital gains from income, which had effectively reduced the top rate on capital gains to 20 percent. As a result, the top rate on capital gains increased to 28 percent, the same rate as for ordinary income.

Among other changes to the individual income tax, TRA-86 broadened the tax base. For example, the act eliminated the itemized deductions for state sales taxes paid. It also expanded the alternative minimum tax.

TABLE 8. DEFICIT REDUCTION ACT OF 1984: PROJECTED REVENUE EFFECTS INCORPORATED INTO CBO'S AUGUST 1984 BASELINE
(By fiscal year, in billions of dollars)

	1984	1985	1986	1987	1988	1989
Postponing or Repealing Scheduled Tax Reductions	a	3	6	8	7	4
Limits on Tax-Exempt Financing	a	1	2	3	5	7
Changes in Accounting Rules	a	1	2	2	2	2
Modification of Income Averaging	a	2	2	2	2	2
Restrictions on Real Estate Depreciation	a	a	1	1	2	3
Increases in Alcohol Taxes	a	a	a	1	1	1
Other	a	4	4	6	7	8
Total Revenue Effect	1	11	17	22	25	27

SOURCES: Congressional Budget Office; Joint Committee on Taxation.

a. Less than $500 million.

TABLE 9. FORECAST ACCURACY OF CBO'S BASELINE RELEASED AFTER THE DEFICIT REDUCTION ACT OF 1984 (By fiscal year, in billions of dollars)

	1984	1985	1986	1987	1988	1989
Overall						
CBO's August 1984 Baseline	673	751	811	881	965	1,042
Actual Receipts	666	734	769	854	909	991
Difference (Actual minus baseline)	-7	-17	-42	-27	-56	-51
Percentage Difference (Actual minus baseline)	-1.0	-2.3	-5.4	-3.1	-6.1	-5.1
By Type of Tax						
CBO's August 1984 Baseline						
Individual income taxes	302	342	375	411	454	498
Corporate income taxes	60	66	73	86	91	96
Social insurance taxes	239	268	290	311	345	372
Excise and other taxes	71	76	73	74	75	75
Actual Receipts						
Individual income taxes	298	335	349	393	401	446
Corporate income taxes	57	61	63	84	95	103
Social insurance taxes	239	265	284	303	334	359
Excise and other taxes	72	73	73	75	79	83
Difference (Actual minus baseline)						
Individual income taxes	-4	-8	-26	-18	-53	-52
Corporate income taxes	-3	-5	-10	-2	4	7
Social insurance taxes	0	-3	-6	-8	-11	-13
Excise and other taxes	1	-3	0	1	4	8
Percentage Difference (Actual minus baseline)						
Individual income taxes	-1.2	-2.2	-7.4	-4.7	-13.2	-11.7
Corporate income taxes	-5.4	-7.7	-15.7	-2.5	3.7	7.1
Social insurance taxes	0.2	-1.1	-2.1	-2.5	-3.2	-3.5
Excise and other taxes	1.3	-4.0	0.3	0.8	5.4	9.3

SOURCE: Congressional Budget Office.

TRA-86 also increased corporate income taxes significantly. The act repealed the 10 percent investment tax credit for purchases of producers' durable equipment. It also lengthened investment lifetimes for depreciation purposes, thereby raising revenues. In addition, it broadened the corporate tax base by restricting several preferential methods of accounting. Finally, TRA-86 instituted a new alternative minimum tax for corporations. Corporations, like individuals, saw their marginal tax rates reduced. Their top tax rate fell to 34 percent from the previous level of 46 percent.

JCT estimated that the provisions of TRA-86 would be roughly revenue neutral over the six-year projection period (see Table 10). A revenue gain of almost $12 billion was expected in 1987. JCT estimated that the act would lower individual income tax revenues in 1987, despite additional revenues from the sale of appreciated stocks and significant realizations of capital gains at the end of calendar year 1986. Taxpayers took those actions in anticipation of the rate increase on capital gains that was set to go into effect on January 1, 1987. However, neither JCT nor CBO issued separate projections for the magnitude of the capital gains effect. Over the projection period, the estimated overall revenue effect moved up and down because certain provisions were phased out and newer ones were phased in.

In 1989, more than two years beyond the January 1987 baseline, actual receipts were $29 billion (2.9 percent) higher than anticipated (see Table 11). More than half of the forecast error stemmed from the subsequent enactment on December 22 of the Omnibus Budget Reconciliation Act of 1987. Both a stronger-than-expected economy and other, technical factors contributed roughly equally to the remainder of the forecast error. In the long term, however, actual receipts were substantially lower than projected, by amounts reaching $129 billion by 1992. Legislation enacted in 1987 and 1990 raised revenues that were, of course, not expected in the projection released in January 1987. The shortfall in overall receipts, therefore, would have been larger had the legislation not been enacted, perhaps by as much as $35 billion in 1992. That shortfall was clearly related to the 1990-1991 recession.

OMNIBUS BUDGET RECONCILIATION ACT OF 1987

About half of the revenue increase from the Omnibus Budget Reconciliation Act of 1987 (OBRA-87) was attributable to higher corporate income taxes, resulting primarily from changes in the accounting techniques that corporations use to measure their taxable income. The legislation repealed the installment-sales method of accounting and the use of a vacation-pay reserve. In addition, the legislation restricted both the use of the completed-contract method of accounting and the deductions for dividends received from affiliated companies.

TABLE 10. TAX REFORM ACT OF 1986: PROJECTED REVENUE EFFECTS INCORPORATED INTO CBO'S JANUARY 1987 BASELINE
(By fiscal year, in billions of dollars)

	1987	1988	1989	1990	1991	1992
Individual Income Taxes	-15.0	-26.6	-29.6	-22.3	-18.8	n.a.
Corporate Income Taxes	27.0	25.1	20.9	22.6	24.8	n.a.
Social Insurance Taxes	-0.1	a	a	a	a	n.a.
Excise and Other Taxes	-0.4	-0.2	-0.9	-1.6	-2.3	n.a.
Total Revenue Effect	11.6	-1.7	-9.6	-1.3	3.7	4.6

SOURCES: Congressional Budget Office; Joint Committee on Taxation.

NOTE: n.a. = not available.

a. Less than $50 million.

TABLE 11. FORECAST ACCURACY OF CBO'S BASELINE RELEASED AFTER THE TAX REFORM ACT OF 1986 (By fiscal year, in billions of dollars)

	1987	1988	1989	1990	1991	1992
Overall						
CBO's January 1987 Baseline	834	900	962	1,050	1,138	1,220
Actual Receipts	854	909	991	1,032	1,055	1,091
Difference (Actual minus baseline)	20	9	29	-18	-83	-129
Percentage Difference (Actual minus baseline)	2.4	1.0	2.9	-1.7	-7.9	-11.8
By Type of Tax						
CBO's January 1987 Baseline						
Individual income taxes	361	381	412	458	502	546
Corporate income taxes	101	119	126	138	151	162
Social insurance taxes	301	329	353	383	411	436
Excise and other taxes	71	71	70	71	74	75
Actual Receipts						
Individual income taxes	393	401	446	467	468	476
Corporate income taxes	84	95	103	94	98	100
Social insurance taxes	303	334	359	380	396	414
Excise and other taxes	75	79	83	92	93	101
Difference (Actual minus baseline)						
Individual income taxes	32	20	34	9	-34	-70
Corporate income taxes	-17	-25	-23	-45	-53	-62
Social insurance taxes	2	5	6	-3	-15	-22
Excise and other taxes	4	8	13	21	19	26
Percentage Difference (Actual minus baseline)						
Individual income taxes	8.0	5.0	7.6	1.9	-7.3	-14.7
Corporate income taxes	-20.4	-25.9	-22.0	-47.6	-53.9	-61.5
Social insurance taxes	0.8	1.6	1.8	-0.8	-3.8	-5.4
Excise and other taxes	4.8	10.5	15.4	22.4	20.4	26.0

SOURCE: Congressional Budget Office.

About a quarter of the total revenue increase in the first three years came from excise taxes, mainly from extending the telephone excise tax through 1990. A variety of personal tax provisions accounted for the rest of the law's revenue increase.

The provisions of OBRA-87 were estimated to raise about $15 billion in each fiscal year from 1989 through 1991, decreasing to $8 billion by 1993 (see Table 12). The forecast error for fiscal year 1990, more than two years after the February 1988 baseline, was very small (see Table 13). Actual receipts were $4 billion (0.4 percent) below the projected amount in 1990. Beyond 1990, however, the forecast error increased as a result of the unexpected downturn in economic activity.

OMNIBUS BUDGET RECONCILIATION ACT OF 1990

Enacted into law on November 5, the Omnibus Budget Reconciliation Act of 1990 raised revenue largely from excise and social insurance taxes. Higher excise taxes accounted for over half of the additional tax dollars, including an increase of 5 cents per gallon in taxes on motor fuels, a doubling of the tax on automobiles that were not fuel efficient, increases in taxes on alcoholic beverages, a 50 percent increase in taxes on tobacco products, increases in aviation taxes, additions to the list of ozone-depleting chemicals subject to tax, and permanent extension of the telephone tax. In addition, a new 10 percent luxury tax was imposed on the portion of the sales price of automobiles, boats, aircraft, jewelry, and furs that exceeded certain limits.

The maximum taxable wage subject to the 1.45 percent tax for Medicare (Part A) was increased from $53,400 to $125,000, with the maximum continuing to be indexed for wage increases. In addition, Social Security coverage became mandatory for all employees of state and local governments unless the employees belonged to their employers' retirement plan.

Income taxes were increased for upper-income taxpayers by three provisions: a higher top tax rate, a revised phaseout of personal exemptions, and a limit on itemized deductions. Most important, the reconciliation act imposed a new statutory rate of 31 percent on certain income of high-income taxpayers. It replaced a set of provisions enacted in TRA-86 that had created an implicit 33 percent statutory tax rate over a limited range but that had resulted in a top marginal rate of 28 percent for the highest-income taxpayers.

OBRA-90 also substantially expanded the earned income tax credit for lower-income families with children. In addition to increasing the amount of the existing credit, the act further increased the credit for families with children under the age of 1 and provided a new credit for expenditures on health insurance premiums for children. Those credits were made refundable. Most of the effect was recorded as an outlay in the budget through use of the refundable credits.

TABLE 12. OMNIBUS BUDGET RECONCILIATION ACT OF 1987: PROJECTED REVENUE EFFECTS INCORPORATED INTO CBO'S FEBRUARY 1988 BASELINE (By fiscal year, in billions of dollars)

	1988	1989	1990	1991	1992	1993
Total Revenue Effect	9	14	15	14	11	8

SOURCES: Congressional Budget Office; Joint Committee on Taxation.

TABLE 13. FORECAST ACCURACY OF CBO'S BASELINE RELEASED AFTER THE OMNIBUS BUDGET RECONCILIATION ACT OF 1987
(By fiscal year, in billions of dollars)

	1988	1989	1990	1991	1992	1993
Overall						
CBO's February 1988 Baseline	897	953	1,036	1,112	1,181	1,262
Actual Receipts	909	991	1,032	1,055	1,091	1,154
Difference (Actual minus baseline)	12	38	-4	-57	-90	-108
Percentage Difference (Actual minus baseline)	1.4	3.9	-0.4	-5.4	-8.2	-9.3
By Type of Tax						
CBO's February 1988 Baseline						
Individual income taxes	390	415	454	494	533	574
Corporate income taxes	99	107	119	126	130	134
Social insurance taxes	330	352	380	407	433	464
Excise and other taxes	78	80	83	84	86	89
Actual Receipts						
Individual income taxes	401	446	467	468	476	510
Corporate income taxes	95	103	94	98	100	118
Social insurance taxes	334	359	380	396	414	428
Excise and other taxes	79	83	92	93	101	99
Difference (Actual minus baseline)						
Individual income taxes	11	31	13	-26	-57	-64
Corporate income taxes	-5	-4	-26	-28	-30	-17
Social insurance taxes	4	7	0	-11	-19	-36
Excise and other taxes	1	3	9	9	15	10
Percentage Difference (Actual minus baseline)						
Individual income taxes	2.8	6.9	2.8	-5.6	-12.0	-12.6
Corporate income taxes	-4.8	-3.6	-27.3	-28.4	-29.6	-14.0
Social insurance taxes	1.3	2.1	0	-2.8	-4.7	-8.3
Excise and other taxes	1.6	3.3	9.3	9.7	15.2	10.1

SOURCE: Congressional Budget Office.

JCT estimated that provisions would raise more than $30 billion per year in additional revenues (see Table 14). CBO incorporated that amount into its January 1991 baseline, which projected revenues that were higher than those that were actually recorded. The error for fiscal year 1993, which ended more than two years after the forecast, was nearly $100 billion, or 8.4 percent (see Table 15). The recession weakened incomes and revenues more than CBO's economic forecast had anticipated, accounting for about three-quarters of the total forecast error. The remainder stemmed from technical estimating factors.

The shortfall in revenues subsided to $43 billion by 1996. However, much of that effect was caused by the subsequent enactment of tax increases in OBRA-93. Based on the estimates of that legislation produced when it was enacted, without OBRA-93 the overall shortfall would have remained roughly stable (near $100 billion) through 1996.

OMNIBUS BUDGET RECONCILIATION ACT OF 1993

The Omnibus Budget Reconciliation Act of 1993 was enacted into law on August 10. Its major tax provisions raised revenues. Most important, OBRA-93 increased the statutory tax rate for high-income taxpayers, including new tax brackets of 36.0 percent and 39.6 percent. It also raised tax rates on high-income taxpayers by increasing the alternative minimum tax and permanently extending the limitation on itemized deductions and the phaseout of personal exemptions.

Other provisions also raised revenue. The legislation extended through 1999 a tax of 2.5 cents a gallon on gasoline and other motor fuels that was scheduled to expire at the end of 1995; imposed an additional tax of 4.3 cents a gallon on motor fuels; raised revenue from social insurance taxes by repealing the cap on earnings subject to the Medicare payroll tax; and increased the taxable portion of an individual's Social Security benefits from a maximum of 50 percent to 85 percent.

OBRA-93 also raised revenue from businesses. It increased the maximum corporate income tax rate from 34 percent to 35 percent and decreased the deductible portion of business meals and entertainment expenses from 80 percent to 50 percent.

Several tax reductions were included in OBRA-93. The act expanded the earned income tax credit to include more families, permanently extended the low-income housing credit, created incentives for investment in empowerment zones and enterprise communities, and repealed certain luxury excise taxes enacted in 1990.

TABLE 14. OMNIBUS BUDGET RECONCILIATION ACT OF 1990: PROJECTED REVENUE EFFECTS INCORPORATED INTO CBO'S JANUARY 1991 BASELINE (By fiscal year, in billions of dollars)

	1991	1992	1993	1994	1995	1996
Individual Income Taxes	-1	4	2	4	5	4
Corporate Income Taxes	2	1	1	1	1	1
Social Insurance Taxes	3	10	8	10	11	10
Excise Taxes	13	18	20	21	21	19
Estate and Gift Taxes	a	a	a	a	a	-1
Miscellaneous Receipts	a	a	1	1	1	0
Total Revenue Effect	18	33	31	36	38	33

SOURCES: Congressional Budget Office; Joint Committee on Taxation.

a. Less than $500 million.

TABLE 15. FORECAST ACCURACY OF CBO'S BASELINE RELEASED AFTER THE OMNIBUS BUDGET RECONCILIATION ACT OF 1990
(By fiscal year, in billions of dollars)

	1991	1992	1993	1994	1995	1996
Overall						
CBO's January 1991 Baseline	1,094	1,170	1,251	1,332	1,416	1,496
Actual Receipts	1,055	1,091	1,154	1,259	1,352	1,453
Difference (Actual minus baseline)	-39	-79	-97	-73	-64	-43
Percentage Difference (Actual minus baseline)	-3.7	-7.2	-8.4	-5.8	-4.7	-3.0
By Type of Tax						
CBO's January 1991 Baseline						
Individual income taxes	489	529	569	612	660	705
Corporate income taxes	99	103	107	109	109	111
Social insurance taxes	404	433	464	496	528	560
Excise and other taxes	101	105	112	115	119	120
Actual Receipts						
Individual income taxes	468	476	510	543	590	656
Corporate income taxes	98	100	118	140	157	172
Social insurance taxes	396	414	428	462	485	509
Excise and other taxes	93	101	99	114	120	115
Difference (Actual minus baseline)						
Individual income taxes	-21	-53	-59	-69	-70	-49
Corporate income taxes	-1	-3	11	31	48	61
Social insurance taxes	-8	-19	-36	-35	-44	-51
Excise and other taxes	-8	-4	-13	-1	1	-5
Percentage Difference (Actual minus baseline)						
Individual income taxes	-4.5	-11.1	-11.6	-12.7	-11.8	-7.4
Corporate income taxes	-0.9	-2.7	8.9	22.4	30.6	35.4
Social insurance taxes	-2.0	-4.7	-8.3	-7.5	-9.0	-9.9
Excise and other taxes	-8.6	-3.6	-13.1	-1.1	1.0	-4.0

SOURCE: Congressional Budget Office.

The provisions of OBRA-93 combined to increase revenues on net (see Table 16). JCT estimated that OBRA-93 would raise amounts increasing to about $60 billion per year by 1997. Although CBO included the estimated revenue effects from those tax increases in its September 1993 revenue baseline, actual revenues exceeded those expectations (see Table 17). In 1995, actual revenues were $20 billion (1.5 percent) above CBO's September 1993 baseline. The amount of the unexpected revenues continued to grow rapidly, reaching $174 billion by 1998. Much of that forecast error can be attributed to economic growth that was stronger than expected, but the sources will be largely unknown until data on tax returns for 1997 are released.

TAXPAYER RELIEF ACT OF 1997

The Taxpayer Relief Act of 1997 was enacted into law on August 5. The child credit represented the largest tax reduction from the legislation. For each child under the age of 17, the credit was set at $400 for 1998 and $500 for 1999 and beyond. The legislation phased out the credit for taxpayers above certain income thresholds.

The tax incentives for education resulted in the second largest tax reduction. Those provisions included the new HOPE and Lifetime Learning tax credits. The HOPE credit equals 100 percent of the first $1,000 and 50 percent of the next $1,000 of tuition and fees paid for the first two years of postsecondary education. Subsequent postsecondary education qualifies for the Lifetime Learning credit, which equals 20 percent of up to $5,000 in education costs ($10,000 after 2002).

Other, smaller reductions included an increase in the unified credit (an effective exclusion from tax) against the estate and gift tax and indexation of the credit for inflation. The legislation raised the credit in steps until 2006, when $1 million in estate transfers becomes effectively excluded from tax.

The legislation also reduced taxation of capital gains. The law lowered the tax rates on long-term capital gains to 10 percent for people otherwise in the 15 percent tax bracket and 20 percent for those in higher tax brackets. It also established lower rates (of 18 percent and 8 percent) that will eventually apply to assets held for more than five years. The legislation also allowed most homeowners to avoid paying taxes on their gains from home sales.

Other tax reductions included expansions of IRAs and tax relief for corporations and small businesses. TRA-97 established a new "Roth" IRA and expanded availability of the deductible IRAs. The law also repealed most of the corporate alternative minimum tax.

TABLE 16. OMNIBUS BUDGET RECONCILIATION ACT OF 1993: PROJECTED REVENUE EFFECTS INCORPORATED INTO CBO'S SEPTEMBER 1993 BASELINE (By fiscal year, in billions of dollars)

	1994	1995	1996	1997	1998
Increases in Individual Tax Rates	15	23	26	25	26
Increases in Motor Fuels Taxes	4	5	7	8	8
Repeal of Medicare Earnings Cap	3	6	6	7	7
Increased Taxation of Social Security Benefits	2	5	5	6	7
Increases in Corporate Tax Rates	4	3	3	3	3
Deductions for Business Meals and Entertainment	2	3	3	3	4
Expansion of Earned Income Tax Credit	a	a	a	-1	-1
Other	-4	a	1	10	5
Total Revenue Effect	26	44	52	61	59

SOURCES: Congressional Budget Office; Joint Committee on Taxation.

a. Less than $500 million.

TABLE 17. FORECAST ACCURACY OF CBO'S BASELINE RELEASED AFTER THE OMNIBUS BUDGET RECONCILIATION ACT OF 1993
(By fiscal year, in billions of dollars)

	1994	1995	1996	1997	1998
Overall					
CBO's September 1993 Baseline	1,244	1,332	1,403	1,472	1,547
Actual Receipts	1,259	1,352	1,453	1,579	1,721
Difference (Actual minus baseline)	15	20	50	107	174
Percentage Difference (Actual minus baseline)	1.2	1.5	3.4	6.8	10.1
By Type of Tax					
CBO's September 1993 Baseline					
Individual income taxes	545	593	628	661	699
Corporate income taxes	126	132	136	143	149
Social insurance taxes	465	495	521	547	573
Excise and other taxes	107	113	117	121	126
Actual Receipts					
Individual income taxes	543	590	656	738	829
Corporate income taxes	140	157	172	182	188
Social insurance taxes	462	485	509	539	572
Excise and other taxes	114	120	115	120	133
Difference (Actual minus baseline)					
Individual income taxes	-2	-3	28	77	130
Corporate income taxes	14	25	36	39	39
Social insurance taxes	-4	-11	-12	-8	-1
Excise and other taxes	7	7	-2	-1	7
Percentage Difference (Actual minus baseline)					
Individual income taxes	-0.3	-0.5	4.3	10.4	15.6
Corporate income taxes	10.3	15.9	20.8	21.6	20.6
Social insurance taxes	-0.8	-2.2	-2.3	-1.4	-0.2
Excise and other taxes	5.9	6.0	-1.4	-1.1	5.5

SOURCE: Congressional Budget Office.

The legislation enacted tax increases largely for excise taxes—in particular, the airport and airway taxes. In addition, increases in the cigarette tax (enacted in the companion Balanced Budget Act of 1997) will raise revenue starting in 2000.

The provisions of TRA-97 were estimated to reduce revenues on net. Those revenue losses were projected to climb from less than $10 billion in 1998 and 1999 to just over $20 billion per year, on average, from 2000 through 2002 (see Table 18). CBO can only partially assess the accuracy of the revenue baseline it released after the law was enacted. Most of the forecast period still remains in the future. The forecast CBO released in September 1997 showed virtually no error for fiscal year 1997, which is not surprising since the fiscal year ended shortly thereafter (see Table 19). However, actual revenues for fiscal year 1998 were substantially higher than CBO projected. Most of the unexpected $87 billion was recorded in individual income taxes. Some of that forecast error is attributed to stronger-than-expected economic growth. Most, however, is attributed to other, technical factors, which could include the effects of TRA-97. Again, until tax returns for tax year 1997 are available, little is known about the source of those technical factors.

SUMMARY OF CBO'S BASELINE PERFORMANCE FOLLOWING CHANGES IN TAX LAWS

The history of CBO's misestimates of baseline revenues following changes in tax laws can be examined overall to determine whether any patterns of bias exist. In particular, the examination could show whether revenue-raising legislation corresponds with subsequent shortfalls in revenues compared with CBO's baseline projection, or conversely, whether tax-cutting legislation corresponds with subsequent revenues that exceed expectations. That bias might occur, for example, if the baseline produced after the legislation systematically failed to incorporate properly the response of taxpayers to the change in tax rules or the resulting macroeconomic effects.

The history of CBO's misestimates shows no such pattern of bias. Of the nine significant tax laws enacted since 1977, three cut taxes, five increased taxes, and one was roughly revenue neutral. The first two pieces of legislation, the Revenue Act of 1978 and ERTA-81, cut taxes, but the baselines produced immediately thereafter registered shortfalls in revenue from the amount expected, even after accounting for the possible effects of subsequent legislation. The baseline following enactment of TEFRA-82 was roughly on target after adjusting for future legislation. Two tax increases did correspond to subsequent baseline shortfalls: DEFRA-84 and OBRA-90. One other tax increase, however, did not correspond with shortfalls at all: following enactment of OBRA-93, revenues have surged beyond expectations. The baseline performance following OBRA-87 was mixed, and the performance following TRA-97 has yet to be determined.

TABLE 18. TAXPAYER RELIEF ACT OF 1997: PROJECTED REVENUE EFFECTS INCORPORATED INTO CBO'S SEPTEMBER 1997 BASELINE
(By fiscal year, in billions of dollars)

	1997	1998	1999	2000	2001	2002
Provisions That Reduce Revenues						
Child Tax Credit	0	-3	-16	-19	-18	-18
Educational Incentives	0	-3	-8	-9	-10	-10
Reductions in Estate and Gift Taxes	0	a	-1	-1	-2	-2
Reductions in Capital Gains Rate	1	6	a	-3	-3	-2
IRA Expansions	0	a	a	a	a	-1
All Other	a	-3	-4	-4	-1	-8
Provisions That Increase Revenues						
Airport and Airway Taxes	0	6	6	6	7	8
Increase in Cigarette Tax[b]	0	0	0	1	2	2
Extension of FUTA Surtax	0	0	1	2	2	2
All Other	a	2	3	3	3	3
Provisions That Change Payment Dates						
Total Timing Changes	-1	-14	12	0	-3	7
All Revenue Changes						
Total Revenue Effect	a	-9	-7	-23	-24	-18

SOURCES: Congressional Budget Office; Joint Committee on Taxation.

NOTE: IRA = individual retirement account; FUTA = Federal Unemployment Tax Act.

a. Less than $500 million.

b. Revenue effect from the Balanced Budget Act of 1997.

TABLE 19. FORECAST ACCURACY OF CBO'S BASELINE RELEASED AFTER THE TAXPAYER RELIEF ACT OF 1997 (By fiscal year, in billions of dollars)

	1997	1998	1999	2000	2001	2002
Overall						
CBO's September 1997 Baseline	1,578	1,635	1,698	1,751	1,821	1,920
Actual Receipts	1,579	1,721	n.a.	n.a.	n.a.	n.a.
Difference (Actual minus baseline)	1	87	n.a.	n.a.	n.a.	n.a.
Percentage Difference (Actual minus baseline)	0.1	5.0	n.a.	n.a.	n.a.	n.a.
By Type of Tax						
CBO's September 1997 Baseline						
Individual income taxes	735	757	771	792	829	879
Corporate income taxes	185	187	190	193	194	197
Social insurance taxes	539	567	593	623	650	683
Excise and other taxes	119	124	143	143	148	161
Actual Receipts						
Individual income taxes	738	829	n.a	n.a	n.a	n.a
Corporate income taxes	182	188	n.a	n.a	n.a	n.a
Social insurance taxes	539	572	n.a	n.a	n.a	n.a
Excise and other taxes	120	133	n.a	n.a	n.a	n.a
Difference (Actual minus baseline)						
Individual income taxes	3	72	n.a	n.a	n.a	n.a
Corporate income taxes	-3	1	n.a	n.a	n.a	n.a
Social insurance taxes	0	5	n.a	n.a	n.a	n.a
Excise and other taxes	1	9	n.a	n.a	n.a	n.a
Percentage Difference (Actual minus baseline)						
Individual income taxes	0.3	8.6	n.a	n.a	n.a	n.a
Corporate income taxes	-1.5	0.4	n.a	n.a	n.a	n.a
Social insurance taxes	0.1	0.8	n.a	n.a	n.a	n.a
Excise and other taxes	0.6	7.0	n.a	n.a	n.a	n.a

SOURCE: Congressional Budget Office.

NOTE: n.a. = not available.

The most obvious pattern, rather, is the strong tendency for the accuracy of revenue forecasts to diminish during periods in which the economy enters a recession or rises above its long-term, sustainable level of output. As described earlier, economic forecasters—including CBO—tend to miss such movements in the business cycle (see Figure 1 on page 9).

IMPROVING THE ACCURACY OF REVENUE PROJECTIONS

Given the complexity of the federal tax system and the uncertainty of economic outcomes, errors in revenue projections can never be eliminated. CBO takes every step to improve the accuracy of its revenue projections.

CBO regularly compares its revenue projections with those of other forecasters. The most direct comparison CBO can make is with the revenue projections of the Administration (produced by the Department of the Treasury). The Administration is the only other known group that regularly produces federal revenue forecasts in the same level of detail as CBO. Thus, CBO can compare its assumptions for the separate revenue sources, such as individual and corporate income taxes, with those of the Administration.

Over a long period of time, CBO's forecast errors for revenues have been just about the same as the Administration's (see Table 20). For the past 22 years, the average (or mean) absolute error in CBO's and the Administration's revenue forecasts, which were produced each winter for the following budget year, has been about 4 percent. That measure excludes the error originating from subsequent policy changes.

CBO regularly consults with state agencies and private analysts charged with the task of estimating revenues. Those forecasters have been equally or more surprised by the rapid growth in individual income taxes in recent years. Budget estimators—including many state budget estimators, a host of private-sector analysts, and the Administration—were very surprised by the events in fiscal years 1997 and 1998, which resulted in atypically large forecast errors.

CBO constantly reviews and updates its procedures for estimating revenues, often making minor adjustments to its models before the next baseline projection. When major problems have appeared, CBO has conducted in-depth analyses of the reasons for errors in the forecasting methods and has made changes based on the findings of those studies. For example, when corporate income tax revenues fell short of what CBO and other forecasters expected following enactment of the Tax Reform Act of 1986, CBO reviewed its procedures for estimating those revenues to

TABLE 20. COMPARISON OF THE ACCURACY OF CBO AND ADMINISTRATION FORECASTS OF REVENUES FOR THE BUDGET YEAR
(By fiscal year, in billions of dollars)

	Forecast for Budget Year			Effects of Legislation Enacted		Difference (Adjusted actual minus forecast)			
						Billions of Dollars		Percent	
Budget Year[a]	Adminis-tration	CBO	Actual Revenues[b]	After Forecast[c]	Adjusted Actual Revenues[b]	Adminis-tration	CBO	Adminis-tration	CBO
1977	374	372	356	0	356	-18	-16	-5.2	-4.5
1978	416	407	400	0	400	-16	-7	-4.0	-1.9
1979	464	457	463	19	444	-20	-13	-4.4	-2.9
1980	505	502	520	0	520	16	18	3.0	3.5
1981	579	582	599	-2	601	22	19	3.7	3.2
1982	707	709	618	-39	657	-50	-52	-7.6	-7.9
1983	653	652	601	18	582	-71	-70	-12.1	-12.0
1984	649	654	666	5	662	13	8	1.9	1.1
1985	737	733	734	10	724	-13	-9	-1.8	-1.2
1986	794	788	769	2	767	-27	-21	-3.5	-2.8
1987	844	844	854	20	834	-10	-10	-1.2	-1.2
1988	910	900	909	11	898	-12	-2	-1.4	-0.3
1989	964	954	991	-1	992	28	37	2.8	3.8
1990	1,060	1,069	1,031	0	1,031	-29	-37	-2.8	-3.6
1991	1,156	1,137	1,054	18	1,036	-120	-101	-11.6	-9.7
1992	1,162	1,170	1,091	-12	1,103	-60	-67	-5.4	-6.1
1993	1,169	1,173	1,154	5	1,149	-21	-25	-1.8	-2.2
1994	1,215	1,214	1,258	26	1,232	17	17	1.3	1.4
1995	1,346	1,338	1,355	1	1,354	8	16	0.6	1.2
1996	1,419	1,418	1,453	0	1,453	34	35	2.3	2.4
1997	1,502	1,483	1,579	3	1,577	75	93	4.8	5.9
1998	1,574	1,567	1,721	-8	1,730	156	163	9.0	9.4
Mean	n.a.	n.a.	n.a.	n.a.	n.a.	-4	-1	-1.5	-1.1
Mean Absolute[d]	n.a.	n.a.	n.a.	n.a.	n.a.	38	38	4.2	4.0

SOURCES: Congressional Budget Office; Office of Management and Budget.

NOTE: n.a. = not applicable.

a. The budget year is the fiscal year following the year in which the estimate was made.

b. Actual revenues were recorded before certain definitional changes were made. Therefore, they may not exactly match revenues now cited for those years (and reported in Table 1). In the President's annual budget, the Administration calculates its differences from a measure of actual revenues adjusted in this manner.

c. CBO's estimates of the amount by which legislation enacted after the forecast will affect revenues in the budget year.

d. The mean absolute disregards whether the differences are positive or negative.

uncover the source of the shortfall.[4] Similarly, when capital gains realizations in 1989 and the early 1990s were well below what CBO had expected, it revised its model for forecasting those realizations.[5] Most recently, CBO has begun an analysis of the recent surge in individual income tax revenues, which have exceeded the expectations of CBO and other forecasters in the past three years.

CBO also consults with outside experts from academia, business, and elsewhere to assess its forecasting methodology. For example, in their assessment of CBO's most recent revenue projections, those experts concluded that the agency has not overlooked any information important for forecasting receipts and that much of the information needed to fully assess the causes of the current rapid growth in individual income taxes will not be available for many months.

Despite CBO's continuing efforts to improve the accuracy of its revenue projections, some amount of forecast error is inevitable. In the past, the largest errors have occurred when economic conditions or tax laws changed significantly. Still, despite the difficulties of forecasting revenues when both the path of the economy and tax laws are constantly in flux, in most years, CBO has been able to keep forecast errors for the budget year under 3 percent.

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4. See Congressional Budget Office, *The Shortfall in Corporate Tax Receipts Since the Tax Reform Act of 1986*, CBO Memorandum (May 1992).

5. See Congressional Budget Office, *Projecting Capital Gains Realizations*, CBO Memorandum (November 1995).