Congressional Budget Office

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The Accuracy of CBO's Baseline Estimates for Fiscal Year 2018

After each fiscal year has ended, the Congressional Budget Office reviews its baseline estimates of federal spending, revenues, and deficits and compares that information with actual budgetary results for that year. By assessing the quality of its projections and identifying the factors that might have led to under- or overestimates of federal revenues and spending in particular categories, CBO seeks to improve the accuracy of its work.[1]

This report reviews CBO's June 2017 projections for fiscal year 2018 and compares them with actual outcomes. To make the comparison, CBO adjusted its projections to account for legislation that was enacted after the projections were completed. With those adjustments, the overall differences were as follows (see Table 1):

- **Outlays:** CBO projected that federal outlays in 2018 would total $4.19 trillion—$69 billion, or 1.7 percent, more than actual spending. That difference is smaller than the mean absolute error of 2.3 percent, on average, that was typical of projections made for 1993 to 2017.[2]
- **Revenues:** CBO's projection of $3.37 trillion for federal revenues in 2018 also was too high—by $40 billion, or 1.2 percent. The average mean absolute error for revenue projections made for 1983 to 2017 was larger—5.0 percent.
- **Deficit:** The outlay and revenue differences were partially offsetting. As a result, the projected federal budget deficit for 2018 was just $29 billion, or 3.7 percent, more than the actual amount: $817 billion compared with $789 billion.

How CBO Conducted This Analysis

CBO regularly publishes baseline projections of federal outlays, revenues, and deficits for the current fiscal year and the ensuing decade. Those projections reflect the assumption that current laws governing taxes and spending will generally remain unchanged over the period. This analysis focuses on projections for 2018 from CBO's June 2017 baseline, primarily because the budgetary effects of legislation that the Congress has considered over the past year typically were measured against that baseline.[3] It also compares estimates in CBO's adjusted April 2018 baseline with actual 2018 outcomes.[4]

Any comparison of CBO's projections with actual results is complicated by legislation that is enacted after the projections are completed. CBO does not attempt to predict future legislative changes or their effects on revenues and outlays when it prepares its baseline budget projections, but actual revenues and outlays invariably differ from CBO's estimates as a result of changes in federal law.

1. For a detailed discussion of the quality of CBO's outlay projections for 2017, see Congressional Budget Office, *The Accuracy of CBO's Outlay Projections for Fiscal Year 2017* (June 2018), www.cbo.gov/publication/53923.

2. The mean absolute error is the arithmetic average of the projection errors without regard to whether they are positive or negative, so errors in different directions do not offset one another. CBO calculated projection errors by subtracting the actual amounts of outlays or revenues from the projections and dividing that difference by the actual outlay or revenue amounts.

3. See Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2017 to 2027* (June 2017), www.cbo.gov/publication/52801.

4. See Congressional Budget Office, *An Analysis of the President's 2019 Budget* (May 2018), www.cbo.gov/publication/53884, and *The Budget and Economic Outlook: 2018 to 2028* (April 2018), www.cbo.gov/publication/53651.

Note: All years referred to are federal fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end. Numbers may not sum to totals because of rounding.

Table 1.

CBO's Budget Projections for 2018, Compared With Actual Outcomes

Billions of Dollars

	June 2017 Projections, Adjusted for Enacted Legislation	2018 Actual	Difference	Percentage Difference[a]	Mean Absolute Error of Past Budget-Year Projections[b]
Revenues					
Individual income taxes	1,658	1,684	-25	-1.5	7.2
Payroll taxes	1,194	1,171	24	2.0	2.5
Corporate income taxes	230	205	25	12.3	17.4
Other	286	270	16	6.0	5.6
Total	**3,369**	**3,329**	**40**	**1.2**	**5.0**
Outlays					
Mandatory					
Social Security	988	982	6	0.6	0.8
Medicare[c]	586	582	4	0.7	3.2
Medicaid	412	389	23	5.9	4.1
Other	593	576	17	2.9	8.4
Subtotal	2,579	2,529	50	2.0	2.8
Discretionary					
Defense	635	622	13	2.1	1.4
Nondefense	663	642	21	3.3	2.4
Subtotal	1,297	1,263	34	2.7	1.4
Net interest[d]	310	325	-15	-4.7	8.1
Total	**4,186**	**4,117**	**69**	**1.7**	**2.3**
Deficit	**-817**	**-789**	**-29**	**3.7**	**n.a.[e]**

Sources: Congressional Budget Office; Department of the Treasury.

CBO adjusted projections for 2018 in its June 2017 baseline to account for the estimated budgetary effects of legislation enacted after those projections were completed. For discretionary spending, the amounts reflect estimated outlays stemming from full-year appropriations provided for 2018. Those projections are generally consistent with CBO's technical assumptions (for example, about how quickly appropriations will be spent) and the economic projections that underlie CBO's June 2017 baseline. Outlays related to the activities of Fannie Mae and Freddie Mac (which are classified as mandatory) are excluded from this table; the budget recorded $9.5 billion in offsetting receipts (that is, negative outlays) for those activities.

n.a. = not available.

a. The percentage difference is the projected amount minus the actual amount divided by the actual amount.

b. The mean absolute error is the arithmetic average of the projection errors without regard to whether they are positive or negative, so errors in different directions do not offset one another. CBO calculated projection errors by subtracting the actual outlay amount from the projection and dividing that difference by the actual outlay amount. The budget year is the second year of the baseline projection period, which usually begins several months after a baseline is released. Measures for revenue categories are based on budget-year projections for 1983 to 2017. The mean absolute errors for defense and nondefense discretionary spending are based on budget-year projections for 1999 to 2017. Measures for all other spending categories are based on budget-year projections for 1993 to 2017. The data necessary to calculate the projection errors in earlier years are not available. For more information, see Congressional Budget Office, *An Evaluation of CBO's Past Outlay Projections* (November 2017), www.cbo.gov/publication/53328, and *CBO's Revenue Forecasting Record* (November 2015), www.cbo.gov/publication/50831.

c. Includes the effects of Medicare premiums and other offsetting receipts.

d. Includes the estimated effects on debt service of enacted legislation.

e. CBO is currently preparing an evaluation of its past deficit projections; the results of that analysis are not yet complete.

To account for those changes in this retrospective analysis, CBO adjusted its projections to incorporate the estimated effects of subsequent legislation. When major tax legislation (Public Law 115-97) was enacted in December 2017, for example, the staff of the Joint Committee on Taxation (JCT) estimated that it would reduce 2018 revenues—largely from receipts of individual and corporate income taxes—by about $144 billion. For this evaluation, CBO reduced its June 2017 baseline revenue projections by that amount to account for that legislation. (The actual timing of the revenue effects of the legislation, however, is still highly uncertain.)

In total, CBO reduced the revenue projections for 2018 that were made in the June 2017 baseline by $163 billion and increased its outlay projections by $93 billion to incorporate the estimated effects of legislation enacted after the baseline was completed. Those legislative effects reflect the cost estimates that the agency prepared when the legislation was enacted—rather than actual amounts, which cannot be identified in most cases. As a result, any errors in the initial estimates are included in the differences discussed in this analysis. The legislative effects also include the estimated increase in outlays for interest on the federal debt that resulted from enacted legislation, although those effects were not included in the initial cost estimates.

Because CBO and the Administration account differently for transactions of the housing entities Fannie Mae and Freddie Mac, CBO also removed outlays for those entities from its projections and from the actual amounts reported by the Department of the Treasury.[5] That adjustment reduced projected outlays by $1.6 billion and increased actual outlays by $9.5 billion.

5. Since 2008, when the federal government placed Fannie Mae and Freddie Mac into conservatorship, CBO and the House and Senate Budget Committees have considered those institutions' activities as governmental. Thus, in CBO's view, cash transactions between Fannie Mae or Freddie Mac and the Treasury should be considered intragovernmental. The Administration, by contrast, considers Fannie Mae and Freddie Mac to be outside the federal government for budgetary purposes, and it records their transactions with the Treasury as increases or decreases in federal outlays. Because the accounting for those two concepts is entirely different, comparing CBO's estimates with the actual amounts reported by the Administration would not contribute to a meaningful assessment of the quality of CBO's projections.

How CBO's Adjusted June 2017 Projections Compare With Actual Outcomes

In its June 2017 baseline, CBO overestimated the federal deficit for 2018 (after adjustments for subsequent legislation and excluding activities of Fannie Mae and Freddie Mac)—the result of overestimates of revenues and outlays that partially offset one another.

Outlays

In its baseline projections, CBO divides federal outlays into three broad categories—mandatory, discretionary, and net interest.[6] Because the Treasury does not report totals for those categories, CBO has estimated how the Office of Management and Budget ultimately will categorize outlays for 2018. Relative to its adjusted June 2017 estimates, CBO has observed the following:

- The projection of mandatory outlays in 2018 was $50 billion (or 2.0 percent) more than the actual amount. The agency overestimated outlays for most major categories of mandatory spending; Medicaid accounted for nearly half of the overall difference.

- The projection of discretionary outlays was $34 billion (or 2.7 percent) more than the actual amount for 2018. CBO overestimated defense spending by $13 billion and nondefense spending by $21 billion.

- The estimate of net interest outlays was $15 billion (or 4.7 percent) less than the actual amount.

Mandatory Outlays. In its June 2017 projections, CBO estimated that mandatory outlays (after the adjustment for subsequent legislation and excluding spending for Fannie Mae and Freddie Mac) would total $2,579 billion in 2018; actual outlays totaled $2,529 billion (see Table 2). The most significant differences are discussed below.

6. Mandatory spending consists of outlays for some federal benefit programs, such as Social Security, Medicare, and Medicaid, and certain other payments. It is governed by statutory criteria and is not normally controlled by the annual appropriation process. Discretionary spending is controlled by annual appropriation acts that specify the amounts that are to be provided for a broad array of government activities, including, for example, defense, law enforcement, and transportation. Net interest outlays consist of the government's interest payments on debt held by the public minus interest income that the government receives.

Table 2.

CBO's Projections of Mandatory Outlays for 2018, Compared With Actual Outlays

Billions of Dollars

	June 2017 Projections, Adjusted for Enacted Legislation	2018 Actual	Difference	Percentage Difference[a]
Social Security	988	982	6	0.6
Major Health Care Programs				
Medicare[b]	586	582	4	0.7
Medicaid	412	389	23	5.9
Health insurance subsidies and related spending	60	49	11	22.0
Children's Health Insurance Program	16	17	-2	-9.2
Subtotal	1,073	1,037	36	3.5
Income Security Programs	283	285	-2	-0.8
Federal Civilian and Military Retirement	160	163	-3	-1.8
Veterans' Programs[c]	105	103	2	1.8
National Flood Insurance	11	7	4	64.8
Other	-42	-49	6	-13.3
Subtotal	517	509	7	1.4
Total Mandatory Outlays	**2,579**	**2,529**	**50**	**2.0**

Sources: Congressional Budget Office; Department of the Treasury.

CBO adjusted projections for 2018 in its June 2017 baseline to account for the estimated budgetary effects of legislation enacted after those projections were completed. Outlays related to the activities of Fannie Mae and Freddie Mac (which are classified as mandatory) are excluded from this table.

a. The percentage difference is the projected amount minus the actual amount divided by the actual amount.

b. Includes the effects of Medicare premiums and other offsetting receipts.

c. Excludes the effects of updated estimates by the Department of Veterans Affairs of the subsidy costs of certain federal loans and loan guarantees made in previous years. Those effects are reflected in the "Other" line.

Social Security. CBO's June 2017 estimate of outlays for Social Security in 2018 was $6 billion (or 0.6 percent) greater than actual outlays for the year, mainly because the December 2017 cost-of-living adjustment was smaller than projected (2.0 percent rather than 2.4 percent) and because fewer people received disability benefits under Social Security than CBO had anticipated. In recent years, the number of people receiving disability benefits has declined more than many analysts expected, for reasons that are not well understood.

Major Health Care Programs. In June 2017, the agency overestimated federal spending for the major health care programs by $36 billion, or 3.5 percent. (Those programs are Medicare; Medicaid; the subsidies offered through the marketplaces established under the Affordable Care Act, or ACA; and the Children's Health Insurance Program, or CHIP.)

The estimate of Medicaid spending, which was $23 billion (or 5.9 percent) above the actual amount, accounted for the largest difference. Outlays for the program in 2017 and early 2018 grew at a historically low rate, something CBO had not anticipated given the strong growth through the first quarter of 2017 in the number of enrollees made eligible by the ACA. That growth unexpectedly slowed in the second half of 2017.

Similarly, CBO overestimated 2018 outlays for subsidies for health insurance purchased through the marketplaces and related spending by $11 billion (or 22.0 percent). That difference occurred in part because in June 2017, CBO and JCT overestimated enrollment in subsidized coverage through the marketplaces as well as the premiums for that coverage, leading to an $8 billion overestimate of coverage subsidies. In addition, CBO's projection of risk adjustment outlays (amounts paid to plans that attract less healthy enrollees) was $2 billion more than the actual amount—a result of an action taken by the Department of Health and Human Services in July 2018 in response to a federal court decision that temporarily halted payments. Typically, risk adjustment outlays occur in September; most of those delayed payments were made in the first quarter of fiscal year 2019.

CBO's projection of Medicare outlays in 2018 (net of premiums and other offsetting receipts) was just $4 billion (or 0.7 percent) above the actual amount.

In contrast to CBO's estimates for the other major health care programs, its estimate for CHIP was $2 billion (or 9.2 percent) below the actual amount. That difference occurred primarily because CBO lowered its estimate of outlays in 2018 to account for accelerated spending at the end of 2017. The higher spending in 2017 appeared to be driven by the expectation that the program's funding would expire as scheduled at the end of that year. (CHIP funding was subsequently reauthorized through 2027.) However, contrary to CBO's expectation, spending for CHIP continued to grow in 2018.

Income Security Programs. CBO's June 2017 estimate of outlays in 2018 for income security programs (which make payments to certain people and government entities to assist the poor, the unemployed, and others in need) was lower, on net, than the actual amount by $2 billion (or 0.8 percent). Estimates of refundable tax credits, which affect revenues and outlays, were too low by $7 billion.[7] That difference may reflect an allocation of the credits between outlays and revenues that differed from CBO's projection, rather than a difference in their overall amounts. (Those changes will be better understood after detailed 2017 tax return data become available next year.) The error was partly offset by a $3 billion overestimate of outlays for unemployment compensation, a difference that occurred largely because CBO's June 2017 projection of the unemployment rate was too high.

National Flood Insurance Program. In its June 2017 projections (as adjusted for subsequent legislation), CBO estimated that outlays for the National Flood Insurance Program would total $11 billion in 2018, about $4 billion more than actual outlays in that year. CBO had estimated that outlays in 2018 would be greater because of flooding near the end of 2017, mostly related to Hurricane Harvey. In addition, because spending in the five years before 2018 had been markedly higher, on average, than in the preceding decade, CBO anticipated that the trend would continue in 2018. Instead, losses—and spending—in 2018 were well below the anticipated amounts.

Other Mandatory Programs. CBO's June 2017 estimate of outlays for federal civilian and military retirement in 2018 was too low by $3 billion (or 1.8 percent), and its estimate for veterans' programs was too high by $2 billion (or 1.8 percent).[8] For all other mandatory programs, estimates exceeded actual amounts by $6 billion (or 13.3 percent).

Discretionary Outlays. To evaluate its discretionary projections, CBO updated the funding amounts in its June 2017 baseline to reflect the full-year appropriations provided for 2018, which were enacted into law in March 2018. To update its projection of discretionary outlays, CBO generally applied the technical assessments (such as how quickly appropriations will be spent) and economic projections that underlie the June 2017 baseline to the updated amounts of funding. On that basis, CBO overestimated discretionary outlays for 2018 by $34 billion (or 2.7 percent).

The late enactment of the full-year appropriations, which occurred about six months after the start of the fiscal year, probably contributed to that overestimate because federal agencies had significantly less time to obligate and spend the funding provided. Estimating errors vary by agency, but most were within $3 billion of actual amounts (see Table 3). The largest differences were the following:

- The estimate of spending for military programs of the Department of Defense was $11 billion (or 1.9 percent) greater than the actual amount, mostly because CBO overestimated spending for operation

7. A refundable tax credit reduces a filer's income tax liability overall; if the credit exceeds the rest of the filer's income tax liability, the government pays all or some portion of that excess to the taxpayer.

8. That comparison does not include the effects of updated estimates by the Department of Veterans Affairs of the subsidy costs of certain federal loans and loan guarantees made in previous years. Those effects—along with the updated estimates reported by all other federal agencies—reduced outlays by nearly $2 billion in 2018, on net, and are reflected on the "Other" line in Table 2 on page 4. The updated estimates were not available when CBO completed its June 2017 baseline projections, and CBO had no basis for predicting what revisions, if any, would be made in 2018 or in future years. Therefore, CBO did not include any such revisions in its June 2017 projections.

Table 3.

CBO's Projections of Discretionary Outlays for 2018, Compared With Actual Outlays

Billions of Dollars

	June 2017 Projections, Adjusted for Enacted Legislation	2018 Actual	Difference	Percentage Difference[a]
Department of Defense—Military	606	594	11	1.9
Department of Health and Human Services	93	88	5	6.2
Department of Agriculture	28	25	3	11.5
Department of Energy	32	30	3	9.6
Department of State	28	25	2	8.7
Corps of Engineers	8	6	2	38.6
Department of Commerce	11	9	2	22.6
Department of Justice	29	28	1	4.8
Department of Transportation	80	79	1	1.6
International Assistance Programs	23	22	1	5.4
Department of Education	68	68	1	1.0
Social Security Administration	10	10	1	6.8
Small Business Administration	2	2	1	35.3
National Aeronautics and Space Administration	20	20	1	2.9
Environmental Protection Agency	9	8	1	7.2
Department of Housing and Urban Development	44	43	1	1.3
Department of Veterans Affairs	78	78	*	0.6
Department of the Treasury	13	12	*	3.1
Department of Labor	12	12	*	1.8
Department of the Interior	14	14	*	-0.1
Department of Homeland Security	60	64	-4	-5.8
Other Agencies	29	28	1	1.8
Total	**1,297**	**1,263**	**34**	**2.7**

Sources: Congressional Budget Office; Department of the Treasury.

CBO adjusted projections for 2018 in its June 2017 baseline to account for the estimated budgetary effects of legislation enacted after those projections were completed. The amounts reflect estimated outlays stemming from full-year appropriations provided for 2018. Those projections are generally consistent with CBO's technical assumptions (for example, about how quickly appropriations will be spent) and the economic projections that underlie CBO's June 2017 baseline.

* = between -$500 million and $500 million.

a. The percentage difference is the projected amount minus the actual amount divided by the actual amount.

and maintenance by $6 billion and spending for research and development by $3 billion.

- The estimate of spending by the Department of Health and Human Services in 2018 exceeded the actual amount by about $5 billion (or 6.2 percent) because of differences for a variety of programs—none larger than $1 billion.

- The estimate of spending by the Department of Homeland Security was $4 billion (or 5.8 percent) lower than the actual amount. The largest difference was a $6 billion underestimate of outlays for disaster relief, arising from faster-than-anticipated spending of supplemental appropriations, partially offset by a $2 billion overestimate of the costs of the Federal Emergency Management Agency's direct loan program.

Net Interest. Net outlays for interest consist of the government's interest payments on debt held by the public minus interest income that the government receives. In its June 2017 projections, CBO estimated that those outlays (after the adjustment for subsequent legislation) would total $310 billion in 2018, $15 billion (or 4.7 percent) less than the actual amount (see Table 1 on page 2). Most of the difference is attributable to economic factors. In particular, inflation was higher than CBO had expected in its June 2017 forecast, resulting in larger adjustments to the principal of inflation-protected securities issued by the Treasury. In addition, CBO underestimated interest rates for 2018. For example, in its June 2017 economic forecast, CBO projected that between the end of fiscal year 2016 and the end of fiscal year 2018, interest rates on 3-month Treasury bills would increase from 0.3 percent to 1.6 percent. Those rates rose, but the increase was larger than anticipated; at the end of 2018, the rate on 3-month Treasury bills was 2.0 percent.

Revenues

CBO's June 2017 estimate of revenues in 2018 (after the adjustment for subsequent legislation) was $3,369 billion, about $40 billion (or 1.2 percent) more than the actual amount in 2018 (see Table 4). CBO underestimated individual income tax receipts, but it overestimated receipts from corporate income, payroll, and other taxes, on net. The underlying causes of the lower-than-anticipated receipts will be better understood after detailed tax return data become available over the next two years.

Individual Income Taxes. CBO's June 2017 estimate, adjusted for subsequent legislation, for receipts of individual income taxes in 2018 was $1,658 billion, about $25 billion (or 1.5 percent) less than the actual amount of $1,684 billion. That difference largely reflects three offsetting factors.

First, payments of individual income taxes received in April, mainly for 2017 taxes, were larger than CBO expected, perhaps because of strength in nonwage income in calendar year 2017.

Second, the Treasury recategorized about $22 billion in collections from payroll taxes to individual income taxes during 2018. The Treasury does not observe a difference between amounts withheld for payroll and income taxes as they are collected, instead initially allocating withheld taxes to one source or the other on the basis of estimates. As detailed tax return information becomes available, reallocations are made between payroll and income taxes. Although those revisions amend allocations made in prior years, the reallocations are made in the current fiscal year.

Third, and partially offsetting the first two factors, the reductions in revenues that resulted from the individual income tax provisions in P.L. 115-97 occurred more quickly than expected at the time of enactment.[9]

Payroll Taxes. In June 2017, CBO estimated that receipts of payroll (social insurance) taxes for 2018 would total $1,194 billion, about $24 billion (or 2.0 percent) more than the actual amount of $1,171 billion. That difference was largely the result of the $22 billion in reallocations made between payroll and individual income taxes during the year.

Corporate Income Taxes. Adjusted for subsequent legislation that was estimated to reduce corporate tax revenues by $94 billion in 2018, CBO's estimate of receipts of corporate income taxes in 2018 was $230 billion, about $25 billion (or 12.3 percent) more than the actual amount of $205 billion. That difference reflects smaller-than-expected payments for both the 2017 and the 2018 tax years. The extent to which that weakness reflects the effects of P.L. 115-97 or other factors is not yet clear. Corporate tax collections for the past several years have been smaller than can be explained by currently available data on business activity, and the timing of the effects of the numerous changes made to the corporate tax system by P.L. 115-97 is highly uncertain. The sources of the weakness will be better understood as more detailed tax return information becomes available over the next two years.

Other Receipts. CBO estimated that receipts from all other sources would total $286 billion in 2018, about $16 billion more than the actual amount. CBO's overestimate reflects differences in several areas:

- Miscellaneous receipts estimated by CBO were about $15 billion greater than the actual amounts

9. The adjustments CBO made in this report to reflect legislative actions after June 2017 incorporate the estimates of the effects of P.L. 115-97 that were made when it was enacted. Subsequently, in April 2018, CBO reduced its projections of individual income tax receipts for 2018 to reflect revised expectations for the timing of effects of that law, but those revisions are not included in the adjustments for subsequent legislation used in this report. The most significant new information incorporated was from the new withholding tables that the Internal Revenue Service issued in January 2018. All employers were required to begin using the new tables by February 15, 2018. See Congressional Budget Office, *The Budget and Economic Outlook: 2018 to 2028* (April 2018), www.cbo.gov/publication/53651.

Table 4.

CBO's Projections of Revenues for 2018, Compared With Actual Revenues

Billions of Dollars

	June 2017 Projections, Adjusted for Enacted Legislation	2018 Actual	Difference	Percentage Difference[a]
Individual Income Taxes	1,658	1,684	-25	-1.5
Payroll Taxes	1,194	1,171	24	2.0
Corporate Income Taxes	230	205	25	12.3
Other Receipts				
Excise taxes	100	95	5	5.8
Estate and gift taxes	24	23	1	3.1
Customs duties	37	41	-5	-11.4
Miscellaneous receipts	125	111	15	13.3
Subtotal	286	270	16	6.0
Total	**3,369**	**3,329**	**40**	**1.2**

Sources: Congressional Budget Office; Department of the Treasury.

CBO adjusted projections for 2018 in its June 2017 baseline to account for the estimated budgetary effects of legislation enacted after those projections were completed. The largest adjustments reflected enactment of major tax legislation (Public Law 115-97) in December 2017.

a. The percentage difference is the projected amount minus the actual amount divided by the actual amount.

collected in 2018, probably in part because of smaller collections of penalties paid by some large employers that do not offer health insurance coverage that meets certain standards under the ACA.

- Excise tax collections in 2018 were overestimated by about $5 billion. A tax on health insurance providers was due on September 30, 2018, the last day of fiscal year 2018. Because that deadline fell on a Sunday, however, many of those payments were not received by the Treasury until the next business day, October 1—the first day of fiscal year 2019.

- Customs duties were underestimated by about $5 billion, largely because of new tariffs implemented by the Administration that did not require the enactment of new legislation. Those included tariffs on imports of solar panels and certain appliances, which took effect on February 7, 2018; on steel and aluminum imports from most countries, which took effect on March 23, 2018; and on a range of products imported from China, the first of which took effect on July 6, 2018.

How the Quality of CBO's Adjusted June 2017 Projections Compares With Its Past Revenue and Outlay Projections

In budget-year projections that CBO made for 1993 to 2017, the agency more often overestimated total outlays than it underestimated them.[10] For revenues for 1983 to 2017, CBO overestimated total amounts about as often as it underestimated them. In June 2017, the agency overestimated both total outlays and total revenues for the budget year.[11] CBO's estimate of total outlays for 2018, adjusted to account for the effects of subsequent legislation, exceeded the actual amount by 1.7 percent—a difference that is smaller than the mean absolute error of 2.3 percent for budget-year projections made for the years 1993 through 2017 (see Figure 1).[12] For

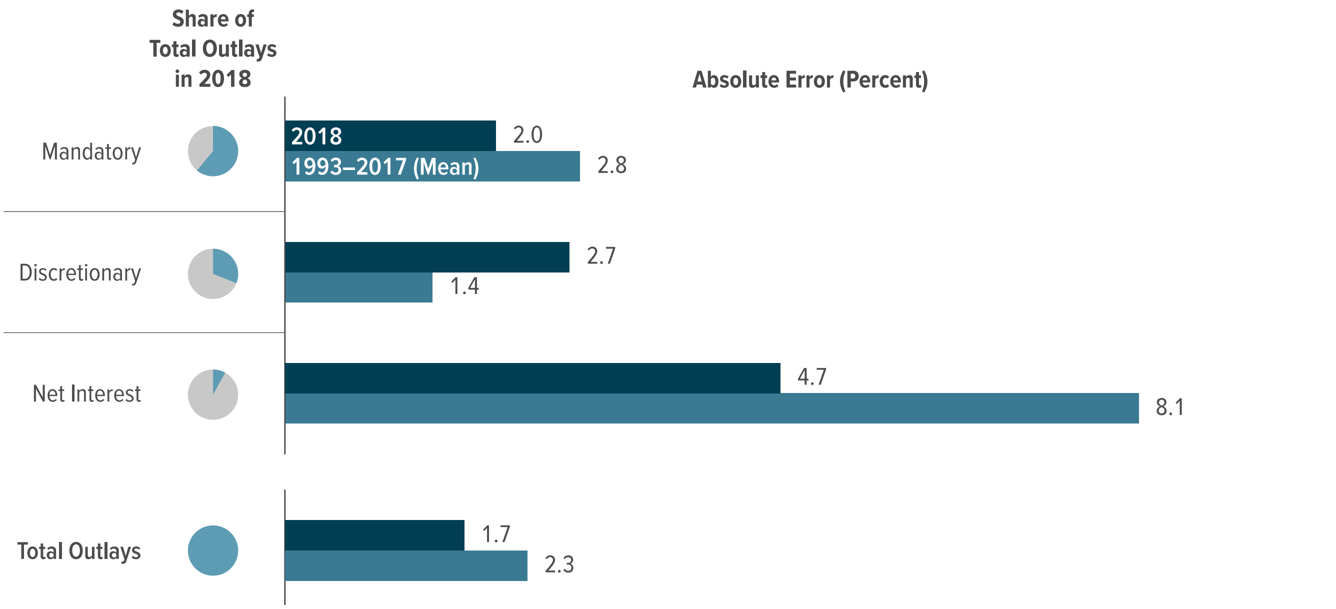
10. The budget year is the second year of the baseline, which usually begins several months after a baseline is released.

11. For a more detailed discussion of the quality of CBO's past revenue and outlay projections, see Congressional Budget Office, *An Evaluation of CBO's Past Outlay Projections* (November 2017), www.cbo.gov/publication/53328, and *CBO's Revenue Forecasting Record* (November 2015), www.cbo.gov/publication/50831. CBO is preparing an evaluation of its past deficit projections.

12. The estimated effects of legislation on outlays for 2018 may be revised in the future when CBO updates its evaluation of the quality of its outlay projections over time.

Figure 1.

Projection Errors for Outlays



Source: Congressional Budget Office.

The mean absolute error is the arithmetic average of the projection errors without regard to whether they are positive or negative, so errors in different directions do not offset one another. CBO calculated projection errors by subtracting the actual outlay amount from the projection and dividing that difference by the actual outlay amount.

The mean absolute errors are based on budget-year projections for 1993 to 2017. The 2018 projection was in the June 2017 baseline (and has been adjusted for subsequent legislation). The budget year is the second year of the baseline projection period, which usually begins several months after a baseline is released.

The estimated budgetary effects of legislation enacted after the projections were produced and outlays related to the activities of Fannie Mae and Freddie Mac (which are classified as mandatory) are excluded from the errors.

total revenues, the agency's estimate for 2018 exceeded the actual amount by 1.2 percent—a difference that is notably smaller than the mean absolute error of 5.0 percent for budget-year projections made for the years 1983 through 2017 (see Figure 2).

Outlays

In its June 2017 projections, as adjusted for subsequent legislation, CBO overestimated mandatory outlays for 2018 by 2.0 percent. Between 1993 and 2017, the mean absolute error for mandatory spending was larger—2.8 percent. The errors for Social Security and Medicare for 2018 were smaller than the mean absolute error for those programs for 1993 to 2017, but the error for Medicaid was larger. For all other mandatory spending, the error was considerably smaller than the mean absolute error for 1993 to 2017. Errors for those four categories of mandatory spending in 2018 were overestimates.

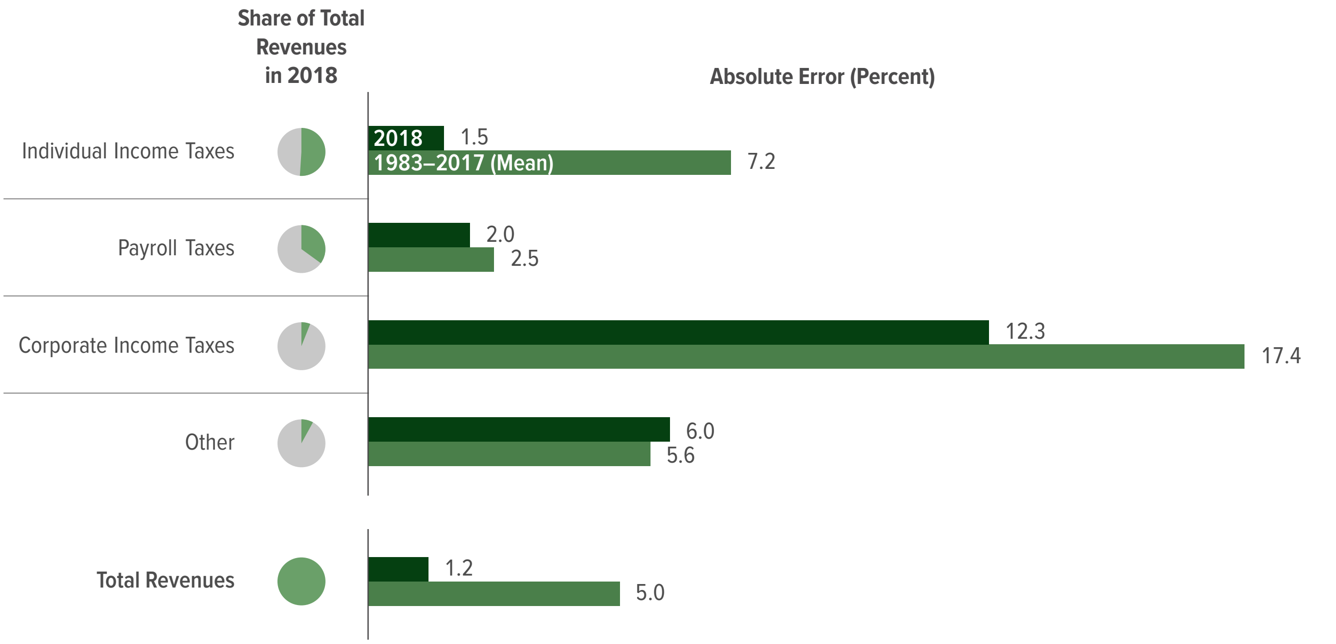
The agency overestimated discretionary spending for 2018 by 2.7 percent; the mean absolute error recorded over the 1993–2017 period was 1.4 percent. Although CBO often has overestimated outlays for net interest, in its June 2017 projections for 2018, it underestimated such outlays by 4.7 percent. By comparison, the mean absolute error for CBO's projections of net interest costs between 1993 and 2017 was 8.1 percent.

Revenues

For most revenue sources, the error for 2018 was smaller than the mean absolute error recorded for those sources from 1983 to 2017. The agency underestimated individual income tax revenues for 2018 by 1.5 percent, less than the mean absolute error of 7.2 percent recorded

Figure 2.

Projection Errors for Revenues



Source: Congressional Budget Office.

The mean absolute error is the arithmetic average of the projection errors without regard to whether they are positive or negative, so errors in different directions do not offset one another. CBO calculated projection errors by subtracting the actual revenue amount from the projection and dividing that difference by the actual revenue amount.

The mean absolute errors are based on budget-year projections for 1983 to 2017. The 2018 projection was in the June 2017 baseline (and has been adjusted for subsequent legislation). The budget year is the second year of the baseline projection period, which usually begins several months after a baseline is released.

The estimated budgetary effects of legislation enacted after the projections were produced are excluded from the errors.

over the 1983–2017 period. CBO's projection of payroll tax revenues for 2018 exceeded actual collections by 2.0 percent, slightly less than the mean absolute error of 2.5 percent recorded for past projections of that source.

Corporate income taxes often are the most difficult major source of revenues to project, and that was the case again in 2018. The agency overestimated corporate income tax revenues for 2018 by 12.3 percent, less than the mean absolute error of 17.4 percent recorded for past projections. The agency's estimate for revenues from all other sources, on net, was about 6.0 percent greater than the actual amounts, slightly above the mean absolute error of 5.6 percent recorded over the 1983–2017 period.

CBO's Updated April 2018 Baseline Projections, Compared With Actual Outlays and Revenues

CBO revised its projections for fiscal year 2018 again in April 2018. Those projections are described in *The Budget and Economic Outlook: 2018 to 2028.* The next month, CBO made additional, relatively small, changes to its baseline budget projections. A comparison of those updated estimates with actual outcomes shows that CBO's updated April deficit estimate of $798 billion (excluding net spending for Fannie Mae and Freddie Mac) was $10 billion, or 1.2 percent, more than the actual amount (see Table 5). As might be expected because of the shorter time horizon, CBO's estimates in the updated April baseline—not only for the deficit, total revenues, and total outlays, but also for most components of those categories—were significantly closer to

Table 5.

Budget Projections for 2018 in CBO's Updated April 2018 Baseline, Compared With Actual Budget Outcomes

Billions of Dollars

	Updated April 2018 Baseline[a]	2018 Actual	Difference	Percentage Difference[b]
Revenues				
Individual income taxes	1,640	1,684	-44	-2.6
Payroll taxes	1,178	1,171	7	0.6
Corporate income taxes	243	205	38	18.6
Other	279	270	9	3.3
Total	**3,339**	**3,329**	**10**	**0.3**
Outlays				
Mandatory				
Social Security	984	982	2	0.2
Medicare[c]	583	582	1	0.3
Medicaid	383	389	-6	-1.5
Other	597	576	21	3.6
Subtotal	2,548	2,529	19	0.7
Discretionary				
Defense	618	622	-4	-0.6
Nondefense	656	642	14	2.2
Subtotal	1,274	1,263	10	0.8
Net interest	315	325	-9	-2.8
Total	**4,137**	**4,117**	**20**	**0.5**
Deficit	**-798**	**-789**	**-10**	**1.2**

Sources: Congressional Budget Office; Department of the Treasury.

Outlays related to the activities of Fannie Mae and Freddie Mac (which are classified as mandatory) are excluded from this table.

a. The numbers presented here differ slightly from the baseline budget projections described in Congressional Budget Office, *The Budget and Economic Outlook: 2018 to 2028* (April 2018), www.cbo.gov/publication/53651, because CBO subsequently made several relatively small changes to its projections. Those changes were described in *An Analysis of the President's 2019 Budget* (May 2018), www.cbo.gov/publication/53884.

b. The percentage difference is the projected amount minus the actual amount divided by the actual amount.

c. Includes the effects of Medicare premiums and other offsetting receipts.

actual outcomes than were its adjusted estimates from June 2017.

Outlays

CBO's updated April estimate of total federal outlays was $20 billion, or 0.5 percent, greater than the $4,117 billion reported by the Treasury. CBO's estimate of mandatory spending for 2018 exceeded the actual amount by $19 billion (or 0.7 percent). An overestimate of outlays for the National Flood Insurance Program accounted for $6 billion of that difference. In recent years, outlays for that program have been high by historical standards—a trend that CBO anticipated would continue in 2018. Instead, spending for that program dropped sharply.

CBO's estimates of refundable tax credits and subsidies for health insurance purchased through the marketplaces and related spending also were too high, by $5 billion and $4 billion, respectively (included in "Other" in Table 5). Those differences were partially offset by an underestimate of Medicaid spending, which was $6 billion greater than CBO anticipated, primarily because the agency lowered its estimate of outlays in response to the historically low rate of growth recorded in 2017 and early 2018. CBO has since learned that much of that slowdown was temporary, and Medicaid spending increased in the second half of 2018 by more than the agency had estimated.

All told, CBO's estimate of discretionary outlays was $10 billion (or 0.8 percent) greater than the actual amount reported for 2018. CBO underestimated defense spending by $4 billion but overestimated nondefense spending by $14 billion. That overestimate of nondefense spending resulted from small errors in estimates for a variety of agencies, the largest of which were around $2 billion.

Finally, the agency's estimate of net outlays for interest was $9 billion (or 2.8 percent) less than the actual amount, mostly because of a higher rate of inflation than the agency had expected. As a result, larger adjustments were made to the principal of inflation-protected securities issued by the Treasury.

Revenues

CBO's updated April estimate of total revenues for 2018 was $10 billion (or 0.3 percent) greater than the actual amount collected. That relatively small miss reflects offsetting errors among revenue sources. Projected receipts of individual income taxes were $44 billion lower than the actual amount, but estimated corporate income tax receipts were about $38 billion higher. Estimated receipts from payroll taxes and other sources also were higher than the amounts reported by the Treasury.

In response to requests from the House and Senate Committees on the Budget, the Congressional Budget Office periodically reports on the accuracy of its baseline spending and revenue projections by comparing them with actual outcomes. Such evaluations help guide CBO's efforts to improve the quality of its projections, and they are offered as background information to assist Members of Congress in their use of the agency's estimates. An earlier edition of this report is available at https://go.usa.gov/xEcj2. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

Barry Blom prepared the report, with contributions from many members of CBO's Budget Analysis and Tax Analysis Divisions and with guidance from Christina Hawley Anthony, Theresa Gullo, John McClelland, and Joshua Shakin. Jeffrey Kling and Robert Sunshine reviewed the report, Kate Kelly edited it, and Casey Labrack prepared it for publication. An electronic version is available on CBO's website (www.cbo.gov/publication/54872). CBO seeks feedback to make its work as useful as possible. Please send comments to communications@cbo.gov.

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