Congressional Budget Office
Nonpartisan Analysis for the U.S. Congress

The Accuracy of CBO's Budget Projections for Fiscal Year 2022

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After each fiscal year has ended, the Congressional Budget Office reviews its projections of federal revenues and outlays and the government's budget deficit and compares them with actual budgetary outcomes for that year.[1] By assessing the quality of its projections and identifying the factors that might have led to under- or overestimates of particular categories of federal revenues and outlays, CBO seeks to improve the accuracy of its work.

To review its projections for fiscal year 2022, CBO focused on its July 2021 budget projections and updated them to include the estimated effects of subsequently enacted legislation. Together, those adjustments—which reflect the estimated budgetary effects reported in cost estimates that CBO and the staff of the Joint Committee on Taxation (JCT) prepared when the legislation was enacted—reduced CBO's projections of revenues by $9 billion (or 0.2 percent) and increased its projections of outlays by $57 billion (or 1 percent).[2]

Because of the unusual size and nature of the Administration's student loan forgiveness, which was announced in August 2022 and recorded in the budget in September 2022, CBO excluded the estimated budgetary effects of that action from this analysis (see Box 1). CBO also removed outlays for Fannie Mae and Freddie Mac from its projections and from estimates of actual outcomes because CBO and the Administration account for the transactions of those entities differently.[3] Taking those adjustments into account, the overall differences were as follows (see Table 1):

- **Revenues.** CBO's projection of $4.40 trillion for federal revenues in 2022 was too low—by $497 billion, or 10 percent. That difference was twice the average absolute error of about 5 percent in CBO's revenue projections for 1983 through 2021.[4] The largest error in projections of revenues, accounting for about 60 percent of the total error in revenue projections, was an underestimate of individual income taxes.
- **Outlays.** CBO's projection of $5.60 trillion for federal outlays in 2022 was also too low—by $303 billion, or 5 percent. That difference was larger than the average absolute error of 2 percent in outlay projections for 1993 through 2021. An underestimate of net outlays for interest, due almost entirely to higher-than-anticipated inflation and interest rates, accounted for slightly more than half of that difference.

1. For last year's edition of this report, see Congressional Budget Office, *The Accuracy of CBO's Budget Projections for Fiscal Year 2021* (January 2022), www.cbo.gov/publication/57614.

2. The estimated effects of legislation on outlays for 2022 may be revised when CBO updates its evaluation of outlay projections. For an earlier report, see Congressional Budget Office, *An Evaluation of CBO's Past Outlay Projections* (November 2017), www.cbo.gov/publication/53328.

3. For more information about the differences, see Congressional Budget Office, *Accounting for Fannie Mae and Freddie Mac in the Federal Budget* (September 2018), www.cbo.gov/publication/54475.

4. The average absolute error is an average of projection errors without regard to whether they are positive or negative. For outlay and revenue projections, CBO calculated projection errors by subtracting the actual amount from the projected amount and dividing that difference by the actual amount. For deficit projections, average absolute errors are expressed as a percentage of gross domestic product rather than as a percentage calculated from dollar values because otherwise, in years with small deficits or surpluses, relatively small projection errors (in dollar terms) would result in large percentage errors.

Notes: Unless this report indicates otherwise, 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 in the text, tables, and figures may not add up to totals because of rounding.

Box 1.

The Budgetary Effects of Student Loan Forgiveness

In August 2022, the Administration announced a plan to cancel up to $10,000 of outstanding student loan debt for borrowers with income below specified limits and an additional $10,000 for those who also received at least one Pell grant. The Administration recorded the present-value costs of that plan, which it estimated as a $379 billion increase in outlays, in September 2022, thereby boosting the 2022 budget deficit by that amount.[1] Because of the unusual size and nature of the debt forgiveness, those estimated budgetary effects were not included in this analysis.

The Supreme Court recently announced it would hear a legal challenge to the Administration's plan, and no student loan debt has been discharged as of this writing. If the plan was invalidated by the court or was revised in response to the Court's ruling, the budgetary effects of any such actions (as estimated by the Administration) would be recorded in the year the change was made as an updated estimate of the subsidy costs of those loans.

1. Under the Federal Credit Reform Act of 1990, the present values of expected reductions of cash inflows to the Treasury are calculated by discounting those flows. A present value is a single number that expresses a flow of current and future income (or payments) in terms of an equivalent lump sum received (or paid) at a specific time. The present value depends on the rate of interest (the discount rate) that is used to translate future cash flows into current dollars.

- **Deficit.** The differences in revenue and outlay projections resulted in a deficit projection for 2022 that was $194 billion more than the actual amount: $1.20 trillion rather than $1.00 trillion.[5] That difference was equal to 0.8 percent of gross domestic product (GDP). By comparison, the average absolute error in deficit projections reported for 1985 through 2021 equaled 1.1 percent of GDP.

5. Removing the budgetary effects of student loan forgiveness decreased actual outlays by $379 billion, and removing those effects for Fannie Mae and Freddie Mac decreased projected outlays by $2.6 billion and increased actual outlays by $5.8 billion. Without those adjustments, the 2022 deficit, as reported by the Treasury, totaled $1.38 trillion.

How CBO Conducted This Analysis

CBO regularly publishes baseline projections of federal revenues, outlays, 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. This analysis focuses on CBO's July 2021 baseline projections for 2022 because CBO mostly used the technical assessments (of, for example, how quickly appropriations would be spent) and economic projections underlying that baseline to produce cost estimates for legislation affecting the budget year and beyond.[6] (The budget year is the second year of the period covered by CBO's baseline projections; it usually begins several months after updates to the baseline projections are released in the spring.)

Any comparison of CBO's projections with actual outcomes is complicated by the effects of legislation enacted after the projections were 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 budget outcomes invariably differ from CBO's estimates as a result of such changes.

To account for those changes, CBO updated its projections to incorporate the estimated effects of subsequent legislation: the budgetary effects that CBO and JCT estimated when the legislation was enacted as well as the estimated increase in spending for interest on the federal debt that resulted from enacted legislation. (Those effects on interest are not included in CBO's cost estimates.) Thus, any errors in the initial cost estimates are included in the differences discussed in this report.

Adjusting projections to reflect the cost estimates for enacted legislation that CBO provided to the Congress allows the agency to evaluate the quality of information provided to lawmakers for budget enforcement purposes. The Congress generally uses adjusted baseline projections when enforcing budgetary rules throughout the year as legislation is enacted. As a result, this report examines the accuracy of not only CBO's initial baseline projections but also information about legislation and the 2022 budget that CBO provided to the Congress from July 2021 through the end of fiscal year 2022.

6. For a more detailed discussion of CBO's July 2021 projections, see Congressional Budget Office, *Additional Information About the Updated Budget and Economic Outlook: 2021 to 2031* (July 2021), www.cbo.gov/publication/57263.

Table 1.

CBO's Budget Projections for 2022, Compared With Actual Outcomes

Billions of Dollars

	July 2021 Baseline Projection	Adjustment for Enacted Legislation	July 2021 Projection, Updated for Enacted Legislation	2022 Actual Amount	Difference	Percentage Difference[a]	Average Absolute Error of Past Budget-Year Projections (Percent)[b]
Revenues							
Individual income taxes	2,328	8	2,336	2,632	-297	-11	8
Payroll taxes	1,391	*	1,391	1,484	-92	-6	2
Corporate income taxes	317	*	317	425	-108	-25	18
Other	355	1	356	356	*	**	6
Total	**4,390**	**9**	**4,399**	**4,896**	**-497**	**-10**	**5**
Outlays							
Mandatory							
Social Security	1,203	*	1,203	1,213	-10	-1	1
Medicare[c]	742	7	749	747	1	**	3
Medicaid	545	*	546	592	-46	-8	4
Other[d]	1,094	-6	1,088	1,209	-122	-10	8
Subtotal	3,583	2	3,585	3,761	-176	-5	3
Discretionary							
Defense	751	14	764	751	13	2	1
Nondefense	899	41	940	910	30	3	3
Subtotal	1,649	55	1,704	1,662	42	3	2
Net interest[e]	306	*	306	475	-169	-36	9
Total[d]	**5,538**	**57**	**5,595**	**5,898**	**-303**	**-5**	**2**
Deficit[d]	**-1,148**	**-48**	**-1,196**	**-1,002**	**-194**	**19**	**n.a.[f]**
Memorandum:							
Outlays Excluded From This Analysis							
Student loan forgiveness	0	0	0	379	-379	n.a.	n.a.
Fannie Mae and Freddie Mac	6	-3	3	-6	8	n.a.	n.a.
Subtotal	6	-3	3	373	-371	n.a.	n.a.
Total Unadjusted Deficit	**-1,153**	**-45**	**-1,199**	**-1,375**	**177**	**-13**	**n.a.**

Data sources: Congressional Budget Office; Department of the Treasury. See www.cbo.gov/publication/58603#data.

The budget projections presented here are based on projections published in Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2021 to 2031* (July 2021), www.cbo.gov/publication/57218. For this analysis, CBO updated those projections to account for the budgetary effects of subsequent legislation as estimated at the time of its enactment. For discretionary spending, the amounts reflect estimated outlays stemming from full-year appropriations provided for 2022. Those projections are generally consistent with the technical assessments (of, for example, how quickly appropriations will be spent) and economic projections underlying the July 2021 baseline projections. In addition, the projected discretionary spending amounts include outlays estimated for 2022 from supplemental appropriations made in 2021 and 2022. Many of those estimates incorporated updated technical assessments.

* = between -$500 million and $500 million; ** = between -0.5 percent and 0.5 percent; n.a. = not applicable.

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

b. The average absolute error is an average of projection errors without regard to whether they are positive or negative. CBO calculated projection errors by subtracting the actual amount of outlays or revenues from the projection and dividing that difference by the actual outlay or revenue amount. The budget year is the second year of the period covered by CBO's baseline projections; it usually begins several months after a spring baseline is released. The average absolute errors for revenues are based on budget-year projections for 1983 through 2021; those for defense and nondefense discretionary spending are based on budget-year projections for 1999 through 2021; and those for all other spending categories are based on budget-year projections for 1993 through 2021. The data necessary to calculate the projection errors in earlier years are not available.

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

d. Excludes outlays related to student loan forgiveness (announced by the Administration in August 2022 and recorded in the budget in September 2022) and to the activities of Fannie Mae and Freddie Mac. All of those outlays are classified as mandatory.

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

f. CBO expresses the average absolute deficit error as a percentage of gross domestic product (GDP) rather than as a percentage calculated from dollar values in order to account for years in which the actual deficit or surplus was small, causing relatively small projection errors (in dollar terms) to result in large percentage errors. In CBO's estimation, the average absolute error in budget-year deficit projections made between 1985 and 2021 was equal to 1.1 percent of GDP. By comparison, the deficit error in 2022 equaled 0.8 percent of GDP.

Table 2.

CBO's Projections of Revenues for 2022, Compared With Actual Revenues

Billions of Dollars

	July 2021 Projection, Updated for Enacted Legislation	2022 Actual Amount	Difference	Percentage Difference[a]
Individual Income Taxes	2,336	2,632	-297	-11
Payroll Taxes	1,391	1,484	-92	-6
Corporate Income Taxes	317	425	-108	-25
Other Receipts				
Excise taxes	87	88	-1	-1
Estate and gift taxes	29	33	-4	-11
Customs duties	88	100	-12	-12
Federal Reserve remittances	119	107	12	11
Miscellaneous receipts	34	29	5	17
Subtotal	356	356	*	**
Total	**4,399**	**4,896**	**-497**	**-10**

Data sources: Congressional Budget Office; Department of the Treasury. See www.cbo.gov/publication/58603#data.

The budget projections presented here are based on projections published in Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2021 to 2031* (July 2021), www.cbo.gov/publication/57218. For this analysis, CBO updated those projections to account for the budgetary effects of subsequent legislation as estimated at the time of its enactment.

* = between -$500 million and zero; ** = between -0.5 percent and zero.

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

How CBO's Projections for 2022 Compare With Actual Outcomes

In its updated July 2021 baseline projections, which include the estimated budgetary effects reported in cost estimates for subsequent legislation, CBO underestimated both revenues and outlays for 2022 and overestimated the federal deficit.

Revenues

CBO's projection of revenues in 2022 was $4,399 billion, $497 billion less than the actual amount (see Table 2). That 10 percent difference stemmed from underestimates of individual income, payroll, and corporate income tax receipts. Under- and overestimates for other sources of revenue were smaller and offset one another.

Tax revenues are sensitive to economic conditions: Typically, as economic activity or prices increase, so do revenues. Differences between actual economic activity in 2022 and CBO's projections for that year were a significant source of error, as the combined effects of the economic disruption in 2020 and legislation enacted in response continued to affect the economy. The factors influencing those underestimates of revenues will be better understood as more detailed tax data become available over the next two years.

Individual Income Taxes. CBO's projection of receipts from individual income taxes in 2022 was $2,336 billion, $297 billion (or 11 percent) less than the actual amount of $2,632 billion. That underestimate is partly the result of higher-than-expected nominal income (that is, income measured in current dollars) subject to the individual income tax, reflecting higher inflation than CBO anticipated when it published its projections. In late September 2022, the Bureau of Economic Analysis (BEA) revised its estimates of nominal income, which rises with inflation, for calendar years 2021 and 2022. BEA's revised estimate of income was 2 percent higher for calendar year 2021 and 5 percent higher for the first half of 2022 than CBO originally anticipated.

Other factors not yet identifiable in the available data may have contributed to the projection error, including the following:

- A larger portion of earnings may have accrued to workers at the top of the distribution than CBO projected, so that earnings were taxed at a higher rate, on average, than expected.

- Realizations of capital gains, particularly in calendar year 2021, may have been larger than CBO estimated, or a larger share of those realizations may have come from sales of assets held for less than a year, which are subject to higher tax rates.
- Temporary tax provisions aimed at reducing people's tax burdens during the coronavirus pandemic may have been less widely used than CBO anticipated.

Payroll Taxes. CBO's projection of receipts from payroll taxes in 2022 was $1,391 billion, about $92 billion (or 6 percent) less than the actual amount of $1,484 billion. Most of that underestimate may be explained by data on income recently published by BEA, including the revisions made in late September 2022. In those data, estimates of nominal wages and salaries, the largest component of the tax base for payroll taxes, are about 5 percent higher than CBO projected for 2022, reflecting higher inflation than the agency expected when it published its projections.

CBO's underestimate of payroll tax receipts may also be explained in part by the Treasury's reallocations of income and payroll taxes. When the Treasury receives payments of withheld taxes, it cannot distinguish payroll taxes from individual income taxes. Instead, it first allocates withheld taxes to one category or the other on the basis of estimates made in advance of actual collections. As additional information becomes available, including detailed tax return information, the Treasury periodically revises those allocations. In 2022, the Treasury reclassified $17 billion of past individual income tax receipts as payroll taxes, boosting the amount of payroll taxes recorded for that year

Corporate Income Taxes. CBO's projection of receipts from corporate income taxes in 2022 was $317 billion, about $108 billion (or 25 percent) less than the actual amount of $425 billion. Part of the unexpectedly higher corporate income tax receipts may be explained by the recently available data published by BEA. Corporate income tax payments reflect economic activity in the current and prior year, and BEA's estimates of nominal domestic corporate profits were 4 percent higher for calendar year 2021, and 3 percent higher for the first half of 2022, than CBO expected when it published its projections.

Other factors not yet identifiable in the available data may have contributed to the underestimate. One possible explanation is that a greater share of profits accrued to firms with taxable income than CBO previously estimated. Also, the temporary tax provisions enacted in response to the pandemic may not have been as widely used as anticipated.

Other Sources. CBO's projection of receipts from all other sources in 2022 was $356 billion, about equal to the actual amount. That similarity, however, obscures some offsetting differences in various categories.

Customs duties were underestimated by $12 billion (or 12 percent), in part because the actual value of imports outstripped CBO's expectations as supply chain pressures eased and businesses imported products to rebuild depleted inventories. The prices of imported goods also rose more than CBO anticipated, which further contributed to CBO's underestimate.

Estate and gift taxes were underestimated by $4 billion (or 11 percent) because of an increase in taxable gifts in calendar year 2021. People typically give more and larger gifts when they expect higher estate taxes in the future.

Excise taxes were underestimated by $1 billion (or 1 percent), largely because greater economic activity boosted collections from several categories of excise taxes, including those related to air travel.

Those underestimates were partly offset by a $12 billion (or 11 percent) overestimate of remittances from the Federal Reserve. That overestimate is attributable to higher short-term interest rates than CBO anticipated, which increased the interest expenses of the central bank and, in turn, reduced its remittances to the Treasury. CBO also overestimated other miscellaneous receipts by $5 billion (or 17 percent).

Outlays

Including the estimated effects of enacted legislation, CBO's projection of outlays in 2022 was $5,595 billion, $303 billion (or 5 percent) less than the actual amount. In its baseline projections, CBO divides federal outlays into three broad categories—mandatory, discretionary, and net interest.[7] CBO underestimated mandatory and net interest outlays and overestimated discretionary outlays.[8]

Mandatory Outlays. CBO's projection of mandatory outlays in 2022 was $3,585 billion, $176 billion (or 5 percent) less than the actual amount of $3,761 billion (see Table 3). Large underestimates of spending for some programs, particularly income security and higher education programs, were partially offset by smaller overestimates for other programs. In many cases, large differences were related to the effects of the pandemic.

Income Security. CBO's projection of outlays in 2022 for income security programs—which make payments to certain people and government entities to assist people who have low income, are unemployed, or are otherwise in need—was lower, overall, than the actual amount by $108 billion (or 19 percent). The largest differences were in CBO's projection of outlays associated with refundable tax credits and the Supplemental Nutrition Assistance Program (SNAP).

Estimates of the portion of refundable tax credits recorded as outlays were too low by $74 billion.[9] The child tax credit accounted for $34 billion of that amount. It is not clear how much of that underestimate reflects a difference in the allocation of the credit between outlays and revenues and how much reflects a difference in the total amount of the credit. (Those factors will be better understood after detailed 2021 tax return data become available next year.) Outlays for the U.S. Coronavirus Refundable Credits (a group of credits for employers to cover sick and family leave, employee retention, and continuation of health insurance for certain workers) accounted for another $29 billion of the underestimate because the effect of those credits was classified as a reduction in revenues in CBO's projections.

In addition, outlays for SNAP in 2022 exceeded CBO's projection by $43 billion, for two reasons. First, spending for benefits provided to children through the Pandemic Electronic Benefit Transfer was greater than the agency anticipated. Second, CBO underestimated the effect that the Department of Agriculture's reevaluation of the Thrifty Food Plan (a basket of foods identified by the department as providing a nutritious diet to a household of a particular size) would have in boosting benefit levels for 2022.

Higher Education. CBO's projection of spending for higher education in 2022 was $81 billion less than the actual amount. (That projection excluded the effects of student loan forgiveness and changes to the estimated costs of student loans made in previous years, known as credit subsidy reestimates.) That difference was mostly the result of modifications made by the Department of Education to the terms of outstanding student loans. Those modifications included an extended pause in loan repayments and interest accrual and changes that allow borrowers to receive forgiveness sooner in the income-driven repayment plan and the Public Service Loan Forgiveness program.

Major Health Care Programs. CBO's projection of outlays for the major health care programs—Medicare, Medicaid, the Children's Health Insurance Program (CHIP), and subsidies for health insurance purchased through the marketplaces established under the Affordable Care Act (ACA) and related spending—was $54 billion (or 4 percent) less than the actual amounts.

CBO's estimates for Medicare and CHIP were each within $1 billion of actual amounts—0.2 percent more and 4 percent less, respectively.

CBO underestimated Medicaid outlays in 2022 by $46 billion (or 8 percent). Most of that difference resulted from CBO's projection of when the public health emergency triggered by the coronavirus pandemic would end. The Families First Coronavirus Response Act, enacted in March 2020, increased the federal matching rate for Medicaid for the duration of the

7. Mandatory spending includes outlays for some federal benefit programs, such as Social Security, Medicare, and Medicaid, and certain other payments to people, businesses, nonprofit institutions, and state and local governments. It is governed by statutory criteria and is not normally controlled by the annual appropriation process. Discretionary spending is controlled by appropriation acts that specify the amounts, purposes, and period of availability for funding for a broad array of government activities, including, for example, defense, law enforcement, and transportation. Net outlays for interest consist of the government's interest payments on debt held by the public minus interest income that the government receives.

8. Because the Treasury does not report discretionary and mandatory totals for accounts that include both types of outlays, CBO has estimated how the Office of Management and Budget will ultimately categorize outlays for those accounts for 2022.

9. Refundable tax credits reduce a filer's income tax liability, and if the credit exceeds the filer's income tax liability, the government pays all or some portion of that excess to the taxpayer; that payment is recorded as an outlay.

Table 3.

CBO's Projections of Mandatory Outlays for 2022, Compared With Actual Outlays

Billions of Dollars

	July 2021 Projection, Updated for Enacted Legislation	2022 Actual Amount	Difference	Percentage Difference[a]
Income Security Programs	473	581	-108	-19
Higher Education[b,c]	7	88	-81	-92
Major Health Care Programs				
Medicare[d]	749	747	1	*
Medicaid	546	592	-46	-8
Health insurance subsidies and related spending	78	86	-8	-10
Children's Health Insurance Program	16	17	-1	-4
Subtotal	1,388	1,442	-54	-4
Certain Offsetting Receipts[e,f]	-238	-271	33	-12
Coronavirus State and Local Fiscal Recovery Funds	77	106	-29	-27
Federal Civilian and Military Retirement	227	199	28	14
Strategic Petroleum Reserve	**	-11	11	-100
Public Health and Social Services Emergency Fund	40	30	10	33
Social Security	1,203	1,213	-10	-1
Credit Subsidy Reestimates	0	-9	9	n.a.
Veterans' Programs[c]	166	160	6	4
Other[b,c,f]	241	234	7	3
Total[b,f]	**3,585**	**3,761**	**-176**	**-5**
Memorandum:				
Outlays Excluded From This Analysis				
Student loan forgiveness	0	379	-379	n.a.
Fannie Mae and Freddie Mac	3	-6	8	n.a.
Subtotal	3	373	-371	n.a.
Total Unadjusted Mandatory Outlays	3,588	4,135	-547	-13

Data sources: Congressional Budget Office; Department of the Treasury. See www.cbo.gov/publication/58603#data.

The budget projections presented here are based on projections published in Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2021 to 2031* (July 2021), www.cbo.gov/publication/57218. For this analysis, CBO updated those projections to account for the budgetary effects of subsequent legislation as estimated at the time of its enactment.

* = between zero and 0.5 percent; ** = between zero and $500 million; n.a. = not applicable.

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

b. Excludes estimated outlays for student loan forgiveness announced by the Administration in August 2022 and recorded in the budget in September 2022 (which are classified as mandatory).

c. Excludes the effects of updated estimates by federal agencies of the subsidy costs of certain federal loans and loan guarantees made in previous years. Those effects are reflected in the "Credit Subsidy Reestimates" line.

d. Includes the effects of Medicare premiums and other offsetting receipts related to Medicare.

e. Excludes the effects of offsetting receipts related to Medicare.

f. Excludes outlays related to the activities of Fannie Mae and Freddie Mac (which are classified as mandatory).

emergency (retroactive to January 2020); to qualify for that higher rate, states must provide continuous coverage for all Medicaid recipients over the same period. Both the higher federal matching rate and the continuous-coverage requirement have increased outlays significantly. In July 2021, CBO projected that the public health emergency would end in July 2022, but it remained in effect. (In May 2022, CBO updated that projection, anticipating that the public health emergency would end in July 2023.) Medicaid enrollment also grew faster under the continuous-coverage policy than CBO had anticipated, which further increased the program's outlays.

CBO's projection of outlays for subsidies for health insurance purchased through the marketplaces established by the ACA and related spending was $8 billion (or 10 percent) less than actual amounts in 2022. That underestimate mostly resulted from higher enrollment, partly offset by lower premiums than the agency had anticipated.

Certain Offsetting Receipts. Excluding Medicare beneficiaries' premiums and payments from Fannie Mae and Freddie Mac to the Treasury, offsetting receipts in 2022 exceeded CBO's projections by $33 billion.[10] The agency's estimate of receipts from the Federal Communications Commission's auctions of licenses for commercial use of the electromagnetic spectrum (which are recorded in the budget as reductions in mandatory outlays) accounted for the largest difference. On the basis of past auctions, CBO anticipated that most of the receipts from an auction held in January 2022 would be recorded in fiscal year 2023. Instead, the Administration recorded the entire amount at the end of fiscal year 2022, resulting in an underestimate of $15 billion for that year.

CBO also underestimated receipts from leases of natural resources on federal lands by $13 billion. Most of that difference resulted from higher royalties paid to the federal government for oil and gas production and higher bonus payments for new leases to develop offshore wind resources.

Coronavirus State and Local Fiscal Recovery Funds. CBO's projection of outlays in 2022 for direct assistance to state, local, tribal, and territorial governments in response to the pandemic was lower than the actual amount by $29 billion (or 27 percent). CBO had expected most of that spending to occur in 2021, but the process of applying for such assistance took more time to complete than CBO anticipated, particularly for tribal governments. As a result, some of that spending occurred in 2022.

Federal Civilian and Military Retirement. The agency overestimated outlays for federal civilian and military retirement in 2022 by $28 billion (or 14 percent). Outlays in that category include benefit payments for federal civilian and military retirement programs and other federal support for retirees through programs such as the railroad retirement fund and the Pension Benefit Guaranty Corporation (PBGC). The largest difference stemmed from CBO's projection of when spending from the PBGC's special financial assistance program for financially troubled multiemployer pension plans would occur. CBO projected that $37 billion (of $86 billion in estimated total assistance) would be paid in 2022, but only $8 billion was paid.

Credit Subsidy Reestimates. Updated estimates by federal agencies of the subsidy costs of certain federal loans and loan guarantees made in previous years decreased recorded outlays, on net, by $9 billion in 2022.[11] The Department of Education recorded a $23 billion increase in the estimated costs of past student loans, but that increase was more than offset by a number of downward revisions, the largest being a $22 billion reduction in the costs of mortgage guarantees made by the Department of Housing and Urban Development in previous years. Those updated estimates were not available when CBO completed its July 2021 baseline projections, and CBO had no basis for determining what revisions, if any, would be made in 2022 or in future years. Therefore, the agency did not include any such revisions in its July 2021 projections.

Other Mandatory Programs. CBO's projections for a variety of other programs deviated from outlays recorded

10. Offsetting receipts are funds collected by federal agencies from other government accounts or from the public in businesslike or market-oriented transactions that are recorded as negative budget authority and outlays (that is, as reductions in mandatory spending).

11. Under the Federal Credit Reform Act of 1990, a program's subsidy costs are calculated by subtracting the present value of the government's projected receipts from the present value of its projected payments. The estimated subsidy costs can be increased or decreased in subsequent years to reflect updated assessments of the payments and receipts associated with the program. (A present value is a single number that expresses a flow of current and future income or payments in terms of an equivalent lump sum received or paid at a specific time. The present value depends on the rate of interest—the discount rate—that is used to translate future cash flows into current dollars.)

for the year by smaller amounts. The largest differences were the following:

- Projected proceeds (recorded as negative outlays) from sales of crude oil from the Strategic Petroleum Reserve were $11 billion less than actual amounts.
- Projected outlays for the Public Health and Social Services Emergency Fund exceeded actual outlays by $10 billion (or 33 percent).
- Projected outlays for Social Security were $10 billion (or 1 percent) less than actual amounts.
- Projected outlays for veterans' programs were $6 billion (or 4 percent) more than actual amounts.

The agency's projection of all other mandatory spending exceeded actual amounts by $7 billion (or 3 percent).

Discretionary Outlays. To evaluate its projections of discretionary outlays, CBO updated the funding amounts in its July 2021 baseline projections to reflect the regular full-year appropriations provided for 2022 in appropriation bills, which were enacted in March 2022. CBO generally applied the technical assessments (of, for example, how quickly appropriations would be spent) and economic projections underlying its July 2021 baseline to those updated amounts of funding. For supplemental appropriations, CBO applied technical assessments that reflected the agency's views at the time of enactment. With those adjustments, CBO's projection of discretionary outlays in 2022 was $1,704 billion, $42 billion (or 3 percent) more than the actual amount of $1,662 billion. CBO overestimated defense outlays by $13 billion (or 2 percent) and nondefense outlays by $30 billion (or 3 percent).

CBO's projections of discretionary outlays for many agencies were close to actual amounts in 2022 (see Table 4). However, projections for a few agencies contained significantly larger errors. Many of those differences were related to CBO's assessments of how quickly funding provided in previous years in response to the pandemic would be spent. The largest overestimates were the following:

- The projection of spending by the Department of Health and Human Services was $23 billion (or 12 percent) more than the actual amount. Spending from the Public Health and Social Services Emergency Fund accounted for about half of that difference. That fund received large appropriations in 2020 and 2021 for COVID-19 testing, contact tracing, the purchase and manufacture of vaccines and therapeutics, and payments to health care providers. CBO had anticipated that the rate of spending from the fund in the latter part of 2022 would be similar to the rate of spending earlier in the year. Instead, such spending—particularly payments to health care providers—slowed significantly toward the end of the year, and some providers returned overpayments to the federal government. CBO also overestimated spending by the Centers for Disease Control and Prevention (by $3 billion) and payments to states for the Child Care and Development Block Grant (by $3 billion).
- The projection of spending by the Department of Defense was $10 billion (or 1 percent) more than the actual amount. Slower-than-anticipated spending on procurement ($5 billion less than projected) and research and development ($3 billion less than projected) accounted for most of that difference.
- The projection of spending by the Department of Homeland Security was $8 billion (or 13 percent) more than the actual amount. The largest difference was a $3 billion overestimate of spending from the Disaster Relief Fund.

For some other agencies, CBO's projections of discretionary outlays fell short of actual amounts. The largest underestimates were the following:

- The projection of spending by the Small Business Administration was $13 billion (or 77 percent) less than the actual amount. Faster-than-anticipated spending on disaster loans accounted for nearly all of that difference.
- The projection of spending by international assistance programs was $6 billion (or 17 percent) less than the actual amount. That error was mostly due to a $5 billion underestimate of spending from the Economic Support Fund, which primarily went toward aid to the Ukrainian government.

Net Interest. Net interest outlays are the government's interest payments on debt held by the public minus the government's income from interest. CBO's projection of those outlays for 2022 was $306 billion, $169 billion (or 36 percent) less than the actual amount of $475 billion (see Table 1 on page 3).

Table 4.

CBO's Projections of Discretionary Outlays for 2022, Compared With Actual Outlays

Billions of Dollars

	July 2021 Projection, Updated for Enacted Legislation	2022 Actual Amount	Difference	Percentage Difference[a]
Department of Health and Human Services	204	182	23	12
Department of Defense—Military	725	716	10	1
Department of Homeland Security	73	65	8	13
Department of Education	106	103	4	4
Department of Transportation	99	96	3	3
Department of Energy	43	40	3	7
Department of Veterans Affairs	115	113	3	2
Department of the Interior	16	14	2	14
Department of Commerce	11	10	1	8
Environmental Protection Agency	10	9	1	9
Department of Justice	34	33	1	2
Department of Agriculture	37	37	1	1
Department of State	33	32	1	2
Corps of Engineers	9	9	*	5
National Aeronautics and Space Administration	23	23	*	1
Social Security Administration	11	11	*	-2
Department of the Treasury	14	15	*	-3
Department of Housing and Urban Development	54	54	-1	-1
Department of Labor	13	14	-1	-5
International Assistance Programs	30	36	-6	-17
Small Business Administration	4	17	-13	-77
Other Agencies	39	34	4	13
Total	**1,704**	**1,662**	**42**	**3**

Data sources: Congressional Budget Office; Department of the Treasury. See www.cbo.gov/publication/58603#data.

The budget projections presented here are based on projections published in Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2021 to 2031* (July 2021), www.cbo.gov/publication/57218. For this analysis, CBO updated those projections to account for the budgetary effects of subsequent legislation as estimated at the time of its enactment. The amounts reflect estimated outlays stemming from full-year appropriations provided for 2022. Those projections are generally consistent with the technical assessments (of, for example, how quickly appropriations will be spent) and economic projections underlying the July 2021 baseline. In addition, the projected discretionary spending amounts include outlays estimated for 2022 from supplemental appropriations made in 2021 and 2022. Many of those estimates incorporated updated technical assessments.

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

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

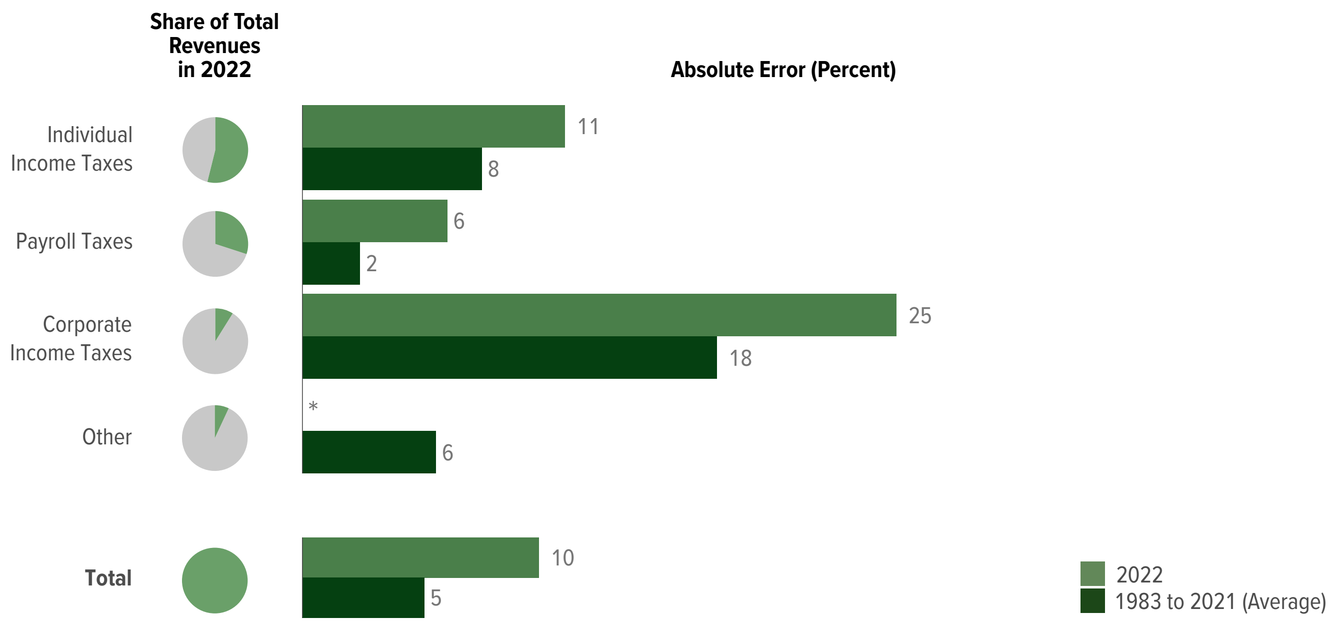
Most of the difference was attributable to economic factors. In particular, CBO underestimated inflation and interest rates for 2022. Both of those factors influenced outlays for interest on Treasury securities. For example, the principal value of Treasury inflation-protected securities is adjusted to rise with inflation as measured by the consumer price index for urban consumers (CPI-U). In 2022, the increase in the CPI-U exceeded CBO's forecast by more than 5 percentage points, which accounted for roughly 60 percent of the difference between projected and actual net outlays for interest. Similarly, CBO expected that the interest rate on 3-month Treasury bills would average 0.1 percent in 2022 and that the interest rate on 10-year Treasury notes would average 1.9 percent. Instead, those rates were much higher, averaging 1.0 percent and 2.4 percent, respectively.

How the Accuracy of CBO's Projections for 2022 Compares With the Accuracy of Its Past Budget Projections

The errors in CBO's projections of revenues and outlays in 2022 were larger than the average absolute errors in the agency's projections for previous years. Because the effects of those errors went in opposite directions, the

Figure 1.

Projection Errors for Revenues



Data source: Congressional Budget Office. See www.cbo.gov/publication/58603#data.

The average absolute error is an average of projection errors without regard to whether they are positive or negative. CBO calculated projection errors by subtracting the actual revenue amount from the projection and dividing that difference by the actual revenue amount.

The 2022 budget projections presented here are based on projections published in Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2021 to 2031* (July 2021), www.cbo.gov/publication/57218. The average absolute errors are based on budget-year projections for 1983 through 2021. (The budget year is the second year of the period covered by CBO's baseline projections; it usually begins several months after a spring baseline is released.) For this analysis, CBO adjusted all projections to include the estimated effects of subsequently enacted legislation.

* = between zero and 0.5 percent.

error in the projected deficit for 2022 was slightly smaller than the average absolute error in previous years.[12]

Deficit

In projections that CBO made for 1985 through 2021, the agency overestimated the deficit in the budget year roughly two-thirds of the time, and the average absolute error in the agency's deficit projections equaled 1.1 percent of GDP. In its updated July 2021 baseline projections, which include the estimated budgetary effects of subsequent legislation (and exclude outlays for Fannie Mae and Freddie Mac and for student loan forgiveness), CBO overestimated the deficit in the budget year (that is, 2022) by $194 billion, or 0.8 percent of GDP.

Revenues

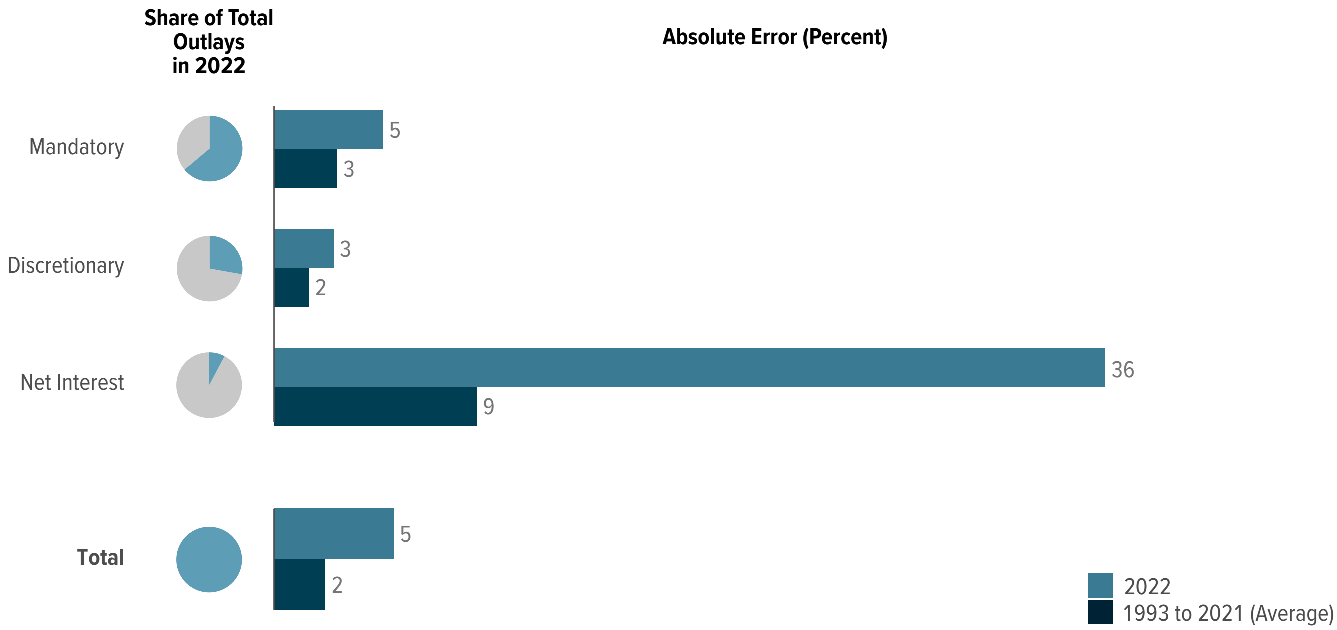
For the period between 1983 and 2021, CBO overestimated total revenues in the budget year about as often as it underestimated them, and the average absolute error in the revenue projections was 5 percent. CBO's projection of revenues for 2022 (that is, its July 2021 baseline projection adjusted to include the estimated effects of subsequent legislation) fell short of the actual amount by 10 percent (see Figure 1).

CBO underestimated individual income tax revenues in 2022 by 11 percent, more than the average absolute error of 8 percent in projections for 1983 through 2021. CBO's projection of payroll tax revenues in 2022 was 6 percent smaller than the actual amount, more

12. For more detailed discussions about the quality of CBO's projections, see Congressional Budget Office, *An Evaluation of CBO's Past Revenue Projections* (August 2020), www.cbo.gov/publication/56499, *An Evaluation of CBO's Past Deficit and Debt Projections* (September 2019), www.cbo.gov/publication/55234, and *An Evaluation of CBO's Past Outlay Projections* (November 2017), www.cbo.gov/publication/53328.

Figure 2.

Projection Errors for Outlays



Data source: Congressional Budget Office. See www.cbo.gov/publication/58603#data.

The average absolute error is an average of projection errors without regard to whether they are positive or negative. CBO calculated projection errors by subtracting the actual outlay amount from the projection and dividing that difference by the actual outlay amount.

The 2022 budget projections presented here are based on projections published in Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2021 to 2031* (July 2021), www.cbo.gov/publication/57218. The average absolute errors are based on budget-year projections for 1993 through 2021. (The budget year is the second year of the period covered by CBO's baseline projections; it usually begins several months after a spring baseline is released.) For this analysis, CBO adjusted all projections to include the estimated effects of subsequently enacted legislation and to exclude outlays related to student loan forgiveness (announced by the Administration in August 2022 and recorded in the budget in September 2022) and to the activities of Fannie Mae and Freddie Mac (which are classified as mandatory).

than the average absolute error of 2 percent for the 1983–2021 period.

CBO's projections of corporate income taxes—which, of all major sources of revenues, are often subject to the greatest uncertainty—had the largest average absolute error recorded for the 1983–2021 period: 18 percent. For 2022, CBO underestimated those revenues by 25 percent. The agency's estimate of revenues from all other sources was less than 1 percent lower than actual amounts in 2022—smaller than the average absolute error of 6 percent recorded for the 1983–2021 period.

Outlays

In projections for 1993 through 2021, CBO overestimated total outlays in the budget year more often than it underestimated them, and the average absolute error in outlay projections was 2 percent. In the agency's updated July 2021 baseline projections, the agency underestimated total outlays in the budget year by 5 percent (see Figure 2).

CBO also underestimated mandatory outlays in 2022 by 5 percent. For the period between 1993 and 2021, the average absolute error in projections of mandatory spending was smaller—3 percent. The 2022 Medicaid projection error significantly exceeded the average absolute error in projections for the program over that period; the 2022 error for Social Security equaled its historical average, and the 2022 Medicare error was smaller than the average absolute error for that program between 1993 and 2021. For all other mandatory outlays, the average absolute error for 2022 was larger than the historical error.

CBO overestimated discretionary spending in 2022 by 3 percent, exceeding the average absolute error of 2 percent in projections for 1993 through 2021.

Although CBO has often overestimated net outlays for interest, the agency underestimated such outlays for 2022, by 36 percent. By comparison, the average absolute error in CBO's projections of net outlays for interest over the 1993–2021 period was 9 percent.

How CBO's More Recent Projections Compare With Actual Outcomes in 2022

CBO's most recent projections for fiscal year 2022 were published in May 2022.[13] To compare those projections with actual outcomes, CBO updated them to account for the enactment of subsequent legislation and excluded outlays for Fannie Mae and Freddie Mac and for student loan forgiveness.

With those adjustments, CBO's May 2022 projections underestimated revenues by $60 billion (or 1 percent)—a much smaller error than the $497 billion underestimate in the agency's updated July 2021 projections. The agency's projection of outlays for 2022 was also much closer, falling below actual amounts by $19 billion (or 0.3 percent), compared with $303 billion in the updated July 2021 projections. As a result, the deficit projection was too high by $41 billion, or 0.2 percent of GDP, compared with an overestimate of 0.8 percent of GDP in CBO's updated July 2021 projections.

13. See Congressional Budget Office, *The Budget and Economic Outlook: 2022 to 2032* (May 2022), www.cbo.gov/publication/57950.

At the request of 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. Earlier editions of this report are available at www.cbo.gov/topics/budget/accuracy-projections. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

Barry Blom and Jennifer Shand 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. Christine Browne edited it, and R. L. Rebach created the graphics and prepared the text for publication. The report is available at www.cbo.gov/publication/58603.

CBO seeks feedback to make its work as useful as possible. Please send comments to communications@cbo.gov.

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