How CBO Prepares Cost Estimates

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The Congressional Budget Act of 1974, often called the Budget Act, established the House and Senate Committees on the Budget to set federal spending policy and identify priorities for allocating budgetary resources. To support those committees in carrying out their responsibilities, it also established the Congressional Budget Office and required CBO to prepare cost estimates for legislation at certain points in the legislative process. Various provisions in that act—primarily sections 202, 402, and 424—govern CBO’s preparation of cost estimates. Provisions in other budget laws—for example, section 257 of the Balanced Budget and Emergency Deficit Control Act of 1985—also contain instructions for preparing cost estimates.

CBO’s cost estimates provide information that the Congress can use as it implements rules and procedures in considering legislation that would affect the federal budget. However, cost estimates are advisory only. They can—but need not—be used to enforce budgetary rules or targets. Moreover, CBO does not enforce budgetary rules; the budget committees do.

Cost estimates recognize the fundamental distinctions between the budget’s three primary components:

- Discretionary spending, which is controlled by annual appropriation acts;
- Mandatory (or direct) spending, which is governed by statutory criteria and usually not constrained by the annual appropriation process; and
- Revenues, including taxes, fees, and fines collected by the Treasury or other agencies.

In keeping with its mandate to provide objective, impartial analyses, CBO never makes recommendations in its cost estimates or other products.

This document provides answers to questions that CBO is frequently asked about how it prepares cost estimates.

What Is the Purpose of a Cost Estimate?
Each estimate tells a concise story about a legislative proposal’s likely effects on federal outlays or revenues, compared with what would occur under current law (that is, if the proposal was not enacted). The estimates identify whether enacting the bill would result in long-term budgetary consequences and whether it would impose mandates on state, local, or tribal governments or private-sector entities. For bills that would authorize discretionary activities or programs, cost estimates typically provide budgetary information for a 5-year period, as specified in the Budget Act. Provisions in other laws set the period at 10 years for bills that would affect direct spending or revenues.

When Does CBO Produce a Cost Estimate?
The Budget Act requires CBO to prepare cost estimates after a committee orders authorization legislation to be reported for consideration by the full House or Senate. For appropriation bills, CBO provides information in a different form (see below, “What Information Does CBO Provide for Appropriation Bills?”).

Most formal cost estimates are prepared for reported bills and all are available on CBO’s website. Almost 90 percent of the roughly 650 formal estimates CBO typically produces in a year are for reported bills; the rest are prepared for bills at other stages of the legislative process.

The time it takes to produce a cost estimate can vary depending on the complexity of a proposal, the availability of data, or Congressional priorities. On average, it takes about two weeks for CBO to produce a formal estimate, although sometimes estimates are produced the same day they are requested and occasionally the period extends to several weeks.

CBO also provides technical assistance and, sometimes, preliminary estimates at other stages of the legislative process, such as when legislation is being developed or when amendments to legislation are being considered (see Figure 1).
How Does CBO Ensure That Estimates Are Thorough and Objective?

Every formal cost estimate is subjected to extensive internal review to ensure that the analysis is objective, insightful, thorough, consistent, and clearly presented and explained. Analysts, who are experts in their subject areas, must justify their methods and results, and they make their supporting documentation available to managers to review. Analysts frequently call upon outside experts to provide information and sometimes to share their own analyses, when they are available, for comparison. Once a formal estimate is signed by CBO’s Director, it is considered CBO’s official analysis. All formal estimates are posted on CBO’s website.

Can Any Member of Congress Request a Formal Cost Estimate?

Individual Members can ask for formal estimates, but the Budget Act directs CBO to give priority to committees—particularly the House and Senate Budget Committees. Statutory requirements for producing formal estimates were designed to ensure that CBO places the highest priority on preparing estimates for the legislation that is most likely to receive active consideration by the Congress.

Given CBO’s staffing, it generally is not possible to satisfy requests for formal estimates that do not come from the budget committees, the committees of jurisdiction, or the leadership, but CBO’s analysts work on requests from individual Members as time permits.

How Does CBO Develop Cost Estimates?

When it prepares estimates, CBO relies on section 257 of the Deficit Control Act and on a set of guidelines that were adopted formally as part of the Balanced Budget Act of 1997. Their purpose is to ensure consistent treatment of spending authority and outlays across programs and over time. In addition, section 424 of the Unfunded Mandates Reform Act of 1995, or UMRA, requires every cost estimate for a reported bill to include a statement concerning intergovernmental or private-sector mandates. Those statements are based on a set of principles that have evolved over the past two decades.

CBO’s analysts generally follow a four-step process in preparing each cost estimate (see Figure 2):

1. Fully understand the legislation’s provisions.
2. Conduct research on the potential effects of enacting the legislation.
3. Analyze and quantify those effects.
4. Communicate the results.

Step One: Understand the Legislative Language

In the first step, analysts carefully study the proposed legislation and assess the way it would change current law, often in consultation with the bill’s sponsors or authors to resolve ambiguities. Analysts also consult technical experts at federal agencies to understand how an
agency might implement a bill and to determine whether the implications of the language are clear. The analysts focus on what is written, and not just on intent, because the text of a law will govern how agencies implement it (although the perspectives of sponsors and other interested parties are helpful). Then they identify which specific provisions might have a budgetary effect compared with current law.

**Step Two: Research Potential Effects**
The second step starts with analysts’ soliciting information about a bill’s potential budgetary effects from a variety of outside experts:

- Congressional staff, including committee staff members and staff in the office of the bill’s sponsors;
- Staff members at affected federal agencies;
- Interested stakeholders, including people who work in state government, for interest groups, or in affected industries; and
- Other experts—at think tanks or in academia, for instance—who can provide knowledge on topics relevant to the proposal.

The analysts also review academic research and historical data, depending on need and subject matter and on whether such information is available in time to complete the estimate. In some cases, they consult publicly available government data and information. In others, they use data provided specifically at CBO’s request. Some data sets are purchased from companies in the private sector.

Although CBO seeks input from a variety of outside experts who represent a range of views, in the end, the agency relies on its own expertise to determine the final methodology and estimates of the various factors necessary to complete an estimate. CBO does not release the names of the people it consults; some, in fact, provide input only on condition of anonymity.

**Step Three: Analyze and Quantify Effects**
The third step is often the most complex and time-consuming. After research and data gathering are complete, CBO’s analysts may use a variety of analytical tools, including spreadsheets and other computer programs and models, to synthesize the information and produce point estimates (that is, specific dollar amounts). Analysts also may perform sensitivity analyses to generate ranges of possible outcomes; CBO’s estimates often reflect a midpoint in such a range so that they are just as likely to be too high as too low. Sometimes, however, models cannot completely reflect the factors that would be affected by a particular proposal. Therefore, in order to produce estimates that are as close as possible to the actual outcomes, analysts may make adjustments to the modeling on the basis of what they have learned from experts and from the available research. No single approach works for all cases, and the best methodology will depend on the question being addressed, the data available, and the time available to produce the cost estimate.
Analysts account for a variety of factors when estimating the effects of legislation:

- The most likely dates for possible enactment and implementation and the period in which the bill’s provisions would be in effect, including whether schedules proposed for implementation are reasonable or feasible and whether some time might be required for the bill’s requirements to be fully phased in;

- How formulas for calculating benefit amounts and eligibility criteria would change;

- Differences in the ways states or affected industries would react to a bill’s directives and respond to new incentives;

- Differences in the ways individuals would react to the bill’s directives;

- Whether the authority to implement a proposal is complete or sufficient and if directives or restrictions would work as intended;

- Whether the legislation would establish a statutory trigger for federal spending or receipts (for example, prices, fees, or interest rates that would be above or below a particular target) that would affect how costs are estimated; and

- Whether there might be unintended effects of the legislation that could affect federal spending or receipts.

Part of the analysis involves identifying the bill’s most likely consequences for discretionary and mandatory spending and for revenues. Sometimes the budgetary nature of a provision is clear and straightforward (for example, if it would authorize the appropriation of funds for a program or activity, change an entitlement formula, or impose a fee). In other cases, a provision would have less obvious effects on federal spending or revenues (for example, if it would convey income-producing property, authorize the leasing of facilities, change loan terms, or control the financing of federally mandated activities).

Finally, in this step, analysts identify any provisions that would have no effect on federal spending or revenues (for example, because they would codify existing practices or address policies that do not affect the operation of federal agencies or programs).

**Step Four: Communicate Results**

Analysts prepare the estimate in one of three forms:

- A long form, which follows the structure detailed below;

- A short form, which contains the same basic elements in a simpler format; or

- When time is short, a table or set of tables.

CBO strives to be transparent, providing clear, concise explanations and detailing the key components of the basis of each estimate. The overarching goal is to make information accessible by providing context, explaining technical terms, and effectively using tables and occasionally figures. CBO strives constantly to find more effective ways to be transparent about its cost estimates.

**How Are Cost Estimates Organized?**

A formal estimate summarizes the bill, describes its budgetary effects, lists mandates, and indicates any significant long-term consequences. The names of the analysts who prepared the estimate and of the managers who approved it also are listed. Long-form cost estimates consist of the following labeled sections:

- A **Summary** lists the bill’s major provisions, describes changes from current law, and summarizes the various elements and findings in the cost estimate.

- The section called **Estimated Cost to the Federal Government** describes CBO’s estimate of the bill’s budgetary effects and can include a table that lists, as appropriate, changes to direct and discretionary spending, revenues, and the federal deficit.

- The **Basis of Estimate** section highlights the probable timing of implementation, data sources, key elements of the analysis, and significant sources of uncertainty.

- **Pay-As-You-Go Considerations** are described as required by the Statutory Pay-As-You-Go Act of 2010 and accompanied, where appropriate, by a table that shows the estimated net change in the deficit arising from changes in on-budget direct spending or revenues.
- A **Mandates** section, as required by UMRA, describes any costs above a threshold that the bill would impose on state, local, or tribal governments or the private sector.

- A section titled **Increase in Long-Term Direct Spending and Deficits** identifies long-term effects (typically for any of the four consecutive 10-year periods beginning with the 11th year after enactment), as required by the Concurrent Resolution on the Budget for Fiscal Year 2017.

- When appropriate, a **Previous Estimate** section compares the current cost estimate with similar estimates provided during the same Congress, and when they are available (which is rare), an **Estimate Comparison** section compares CBO’s estimate with any estimates from the Administration or other sources.

Short-form estimates, often no more than a page or two, contain information on the same topics in the same order with the amount of detail necessary.

Occasionally, when time is short, cost estimates may consist only of tables that list the projected effects on direct spending, revenues, and the deficit. With respect to amendments for floor consideration, given the often-short deadlines, CBO may be able only to indicate whether the amendment would increase or decrease direct spending and revenues but not to quantify the amounts.

**What Budgetary Effects Do Estimates Identify?**

For discretionary spending (that is, for spending subject to appropriation), the cost estimate identifies the amount of appropriated funds required to perform the activity or implement the program and the outlays that would result if those appropriations were subsequently provided.

For direct spending, the estimate identifies the budget authority and outlays for the mandatory program that would result from (or be changed by) enacting the bill, measured relative to CBO’s baseline projection for the program. (Budget authority is the authority to incur financial obligations that result in federal outlays.) For revenues, the estimate identifies the amount of the increase or decrease that would occur, relative to CBO’s baseline projection.

For legislation that would affect both direct spending and revenues, the estimate identifies the net result of those two effects on the deficit (in addition to the bill’s spending and revenue effects). Subsequent legislation would not be required to implement such provisions. Any effects on discretionary spending are considered separately because they would require subsequent appropriation action and are not used in budget enforcement procedures.4

**How Does CBO Estimate the Budgetary Effects of Proposed Legislation?**

At least twice each year, CBO provides the Congress with a budgetary baseline—a neutral benchmark that can be used to determine whether proposed legislation is subject to various budget enforcement procedures. CBO’s baseline consists of its projections of spending, revenues, and deficits, consistent with CBO’s forecast for the nation’s economy, that would occur in the current year and over the ensuing decade if laws that govern spending or taxes remained generally unchanged.

Estimates for provisions that would affect mandatory spending or revenues are measured relative to that baseline. In most cases, estimates throughout a year are measured relative to the baseline that was used to develop the budget resolution, in order to be consistent with that resolution.

That baseline, however, is generally not applicable to estimates for legislation that would affect discretionary spending. The baseline projections for individual discretionary programs in future years do not reflect current law. Instead, those projections incorporate the assumption that appropriations for individual accounts will equal current-year appropriations, adjusted for inflation. (Discretionary spending totals, however, are adjusted to comply with the statutory caps that have been placed on such funding.) Rather, current law for most discretionary programs consists of enacted appropriations for the current year and any amounts appropriated or authorized

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Cost estimates for discretionary programs generally include five-year tables that show increases in spending subject to appropriation; that is, the specified or estimated amount of funds authorized to implement the bill and the estimated outlays that would occur if those funds are provided in subsequent legislation. The text of the estimate usually compares those figures with amounts already authorized (if any) for the affected programs. In addition, for existing programs, such cost estimates usually compare the authorized funding with the most recent appropriation.

Because most discretionary programs are funded only for one year at a time, usually no current-law funding is available for future years. The cost estimate’s projection of the requirement for future funding is unaffected by past appropriations.

How Are Estimated Changes in Discretionary Spending Shown?

Discretionary spending largely results from funding provided through annual appropriation actions. A bill considered by an authorizing committee may allow for future discretionary funding for agencies but usually does not actually provide (that is, appropriate) that money. Such bills may authorize spending in amounts that are specified, unspecified, or implied, typically as indicated by standard language:

- For a specified authorization, “… there is authorized to be appropriated $10 million for …”
- For an unspecified authorization, “… there are authorized to be appropriated such sums as are necessary …” and
- For implied authorizations (for example when legislation changes an agency’s workload for activities funded by appropriation even if the bill does not specify a funding amount), “… the Department of the Interior shall conduct a review of the …”

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How Are Changes in Mandatory Spending Shown?

With some exceptions, mandatory, or direct, spending is controlled by laws other than appropriation acts. That is, it generally is governed by statutory criteria rather than according to amounts that are set in an annual appropriation law. Direct spending includes expenditures for entitlement programs—notably Social Security, Medicare, and Medicaid—and for certain other payments to people, businesses, and state and local governments.

A 10-year table is included in cost estimates for mandatory programs to show increases or decreases in direct spending in terms of estimated budget authority and resulting outlays.

How Are Outlays Estimated?

To estimate outlays, analysts consider the nature of an activity and consult a variety of sources to estimate the rates at which authorized or appropriated funds would be obligated and spent. The rates at which funding is spent can vary considerably, depending on the purpose for which the money is provided:

- Funds provided to accounts that cover mainly salaries and expenses typically are spent fairly quickly. For example, 85 percent of the budget authority provided for a given account may be spent in the year it is provided, 10 percent in the second year, and the remaining 5 percent in the third year.
- Funds provided to accounts that contain funding for other programs and activities, such as construction accounts, typically are spent more slowly. For example, funding for a given account could be spent at a rate of 25 percent in the year the funds are provided, 40 percent in the second year, 25 percent in the third year, and the remaining amounts over the fifth through tenth years.

Estimates of direct spending outlays depend on projections of the program’s parameters, including the extent to which eligible people will take up a given benefit under a mandatory program and the benefits available to different categories of people. For those programs, the changes in budget authority often equal the changes in outlays.

Does CBO Show All Budgetary Effects Using the Same Accounting Measures?

The two types of accounting measures that are used in the budget and that CBO uses when it prepares cost
estimates—cash accounting and accrual accounting—differ primarily regarding the time at which the commitment of budgetary resources is recognized. Cash accounting reports costs when the cash transactions resulting from federal commitments occur; accrual accounting reports costs as a single number when commitments are made.

Currently, most federal activities are recorded in the budget on a cash basis, and therefore cost estimates related to those activities are shown on that basis. The major exception is federal credit programs, which, as required by the Federal Credit Reform Act of 1990, are recorded on an accrual basis. Federal retirement programs are reported using a mix of cash and accrual measures.5

What About Revenues?
Estimates of a legislative proposal’s revenue effects arising from taxes or other miscellaneous receipts are prepared either by the staff of the Joint Committee on Taxation (JCT) or by CBO. Section 201(f) of the Budget Act stipulates that JCT’s revenue estimates are the official estimates for most tax legislation considered by the Congress. Therefore, CBO incorporates JCT’s estimates into its estimates of the effects of legislation. CBO analyzes proposals that would affect unemployment insurance taxes, customs duties, miscellaneous fees, and earnings of the Federal Reserve System. CBO and JCT collaborate closely to avoid duplication, and CBO often relies on JCT’s expertise, incorporating that work into cost estimates.

What Information Does CBO Provide for Appropriation Bills?
CBO does not produce the same kind of written cost estimates for appropriation bills that it is required to produce (under section 402 of the Budget Act) for bills that authorize programs and activities that are funded by appropriation. However, section 308 of the Budget Act requires, in part, that CBO assist the House and Senate Budget and Appropriations Committees in carrying out their responsibilities. As part of that assistance, CBO provides the appropriations committees with data and other information as they consider legislation and distributes detailed reports to interested parties in the Congress that display account-level detail of the budgetary effects of proposed appropriation legislation.

For annual appropriation bills, CBO provides detailed reports showing estimates of the discretionary budget authority provided and the outlays that would occur in that year, including the estimated budgetary effects of provisions that make changes in mandatory programs (CHIMPs). Separately, CBO provides a tabulation of budgetary effects in each of the next 10 years for those CHIMPs. In addition, for appropriation bills that are ordered to be reported out of committee, CBO provides an estimate of the outlays resulting over the next 5 years from the budget authority provided in such bills.

For supplemental appropriation bills, CBO provides detailed reports to interested parties in the Congress and routinely publishes tables on its website showing estimated budget authority and outlays over the next 10 years resulting from such legislation. CBO also regularly updates historical information about funding provided in supplemental appropriation bills, also available on its website.6

Furthermore, to help the Congress track the effects of appropriation legislation as it moves through the process, CBO frequently presents details of budgetary effects in what the agency calls current status reports (on the “Status of Appropriations” page of the website), which reflect the latest stage of action for each appropriations subcommittee. Those reports are first provided when an appropriation bill is reported in the House or Senate and updated as the bill progresses through the process.

CBO is currently developing a plan to make more of the account-level analysis of appropriation bills publicly available in an accessible format.

Does CBO Provide Technical Assistance Concerning Legislative Proposals?
At various points in the legislative process, Members or Congressional staff may ask CBO to review and informally estimate the cost of a piece of legislation. Unlike formal estimates, which typically accompany an authorizing committee’s report, informal, technical assistance can be provided before a legislative proposal

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5. For more information, see Congressional Budget Office, Cash and Accrual Measures in Federal Budgeting (January 2018), https://www.cbo.gov/publication/53461.

is introduced or as amendments are considered (see Figure 1 on page 2). CBO provides such assistance for several thousand proposals each year—mostly to committee staff. The information provided in those cases sometimes becomes a formal estimate.

CBO’s technical assistance is intended to aid the Congress as it develops and considers legislation. Any information provided informally is preliminary, conveyed primarily through staff-to-staff communications, subject to revision, and considered confidential only as long as a proposal is confidential. CBO does not provide confidential estimates for public proposals. Although the information is subjected to CBO’s review process, it is not signed by the Director, it is not to be considered official, and it generally is not posted to CBO’s website.

**Does CBO Use Dynamic Scoring?**
CBO always tries to incorporate into its estimates the effects that legislation would have on people’s behavior—but effects on the economy as a whole are taken into account only in limited circumstances.

Although some major legislation can have significant macroeconomic consequences—for example, because it affects the labor supply or private investment—most does not. When the gross budgetary effects of a bill would equal or exceed 0.25 percent of gross domestic product (the economy’s total output) in any year, the Congress has directed CBO, if practicable, to incorporate the estimated budgetary feedback from macroeconomic effects into its cost estimates. Such a “dynamic score” also may be requested by the House or Senate Budget Committee for any bill and is prepared if it is practicable for CBO to do so.\(^7\) Such estimates are complicated and often time-consuming, so they are difficult to prepare if legislation is moving quickly.

Even though most estimates do not reflect the macroeconomic effects of a particular bill, where germane, CBO’s cost estimates incorporate the effects that changes in policy might have on people’s behavior that would in turn generate budgetary effects. For example, an estimate might account for the likelihood that people would take up a particular government benefit under a new law, the possibility that farmers would change what and how much they grow in response to a particular subsidy.

**What Creates Uncertainty in an Estimate?**
Many factors can create uncertainty. For example, it is difficult to project the amount of funding that will be required for entitlement programs even under current law. For programs such as Medicare, spending depends on the size and composition of the eligible population, which in turn changes with fluctuations in fertility, mortality, and immigration, and on participants’ use of medical care. In another example, extreme weather events—flooding or drought, for instance—can be difficult to predict and can affect not only spending for disaster relief but also the cost of programs that support farm income. The effects of a new law can vary substantially depending on how it is implemented by an agency, which can cause uncertainty in the cost estimate. Additionally, it can be difficult to project how many people would qualify for or actually enroll in a new benefit program.

Estimating potential budgetary effects of new programs or major changes to existing programs is generally more uncertain than estimating the effects of modest changes to existing programs. In particular, the creation of a new program may have a wide range of foreseen and unforeseen outcomes, given uncertainties, for example, about the time it takes to implement a new program or whether people would be willing to take up a new benefit or comply with a new requirement.

**Considering How Uncertain Cost Estimating Is, Why Does CBO Provide Point Estimates?**
CBO develops point estimates of the budgetary effects of legislation because they are necessary for the enforcement of budget rules during Congressional deliberations. Those rules are found in the Budget Act itself, in annual budget resolutions, in the Statutory Pay-As-You-Go Act of 2010, and in a host of parliamentary rules. For example, budget resolutions provide committees with allocations of funds expressed as point values, and the budget committees track the estimated budgetary effects of approved legislation using point values. CBO tries to explain the sources of any uncertainty in an estimate.

**Does CBO Ever Revise Cost Estimates?**
In the event that CBO finds a computation error, it reissues the cost estimate, as it will if subsequent discussions indicate that CBO misinterpreted legislative

\(^7\) For more information, see Congressional Budget Office, “Dynamic Analysis,” www.cbo.gov/topics/dynamic-analysis.
language. Such estimates are posted as revisions, and the changes are listed with reference to the earlier version. Revisions to estimates because of errors are rare, however—typically fewer than five per year, or less than one percent of formal cost estimates.

**Why Might an Estimate Change Over Time?**
Occasionally, CBO’s estimates for legislative proposals change for other reasons. A new estimate might be issued if additional information from experts and stakeholders becomes available, if CBO improves its methodology or obtains more current or complete information, or if a new legislative proposal resembles but is not identical to an older one. Similarly, a proposal that looks the same at first glance or that has the same title as a previous one might vary enough that a new estimate is warranted. Sometimes a change in another law will have budgetary consequences for a new proposal, or an agency or state might change the way it responds to or enforces regulations. Administrative actions (such as regulations, program memoranda, or court decisions) also can change the content of or assumptions underlying an estimate. Where appropriate, a new estimate refers to prior work in the section concerning previous estimates.

Each year, CBO updates the baseline that underlies cost estimates, and the years spanned by estimates are changed at the same time. Therefore an estimate for a bill in one year may be different from a prior estimate because of the updated baseline and scoring window.
# List of Figures

1. CBO Provides Technical Assistance and Prepares Formal Estimates, Depending on the Stage of the Legislative Process  
   2
2. CBO’s Four-Step Process for Preparing Formal Cost Estimates  
   3
About This Document

This document, which is part of the Congressional Budget Office’s continuing effort to make its work transparent, explains CBO’s preparation of cost estimates for proposed legislation. In keeping with CBO’s mandate to provide objective, impartial analysis, the document makes no recommendations.

Theresa Gullo prepared the document with Sarah Puro and with contributions from Kim Cawley, Lori Housman, Sam Papenfuss, Lara Robillard, Emily Stern, and Ellen Werble.

Peter Fontaine, formerly of CBO, provided comments. The assistance of an external reviewer implies no responsibility for the final product, which rests solely with CBO.

Wendy Edelberg, Mark Hadley, Jeffrey Kling, and Robert Sunshine reviewed the document; Kate Kelly edited it; and Casey Labrack prepared it for publication. An electronic version is available on CBO’s website (www.cbo.gov/publication/53519).

Keith Hall
Director
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