



February 4, 2019

## **Transparency at CBO**

11th Annual Meeting of the OECD Network of Parliamentary  
Budget Officials and Independent Financial Institutions

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# CBO's Goals in Being Transparent

- Promote a thorough understanding of its analyses
- Help people gauge how its estimates might change if policies or circumstances were different
- Enhance the credibility of its work

# **How CBO Fosters Transparency**

# Ten Ways CBO Is Transparent

- Testifying and publishing answers to questions from Members of Congress
- Explaining its analytical methods
- Releasing data
- Analyzing the accuracy of its estimates
- Comparing its current estimates with its previous ones
- Comparing its estimates with those of others
- Estimating the effects of policy alternatives
- Describing how much uncertainty surrounds its estimates
- Creating data visualizations
- Conducting outreach

# Testifying and Answering Questions

CBO's staff members often testify at Congressional hearings about the agency's work.

CBO also provides public answers to questions from Members of Congress—about the agency's work in general and about specific analyses or projections.

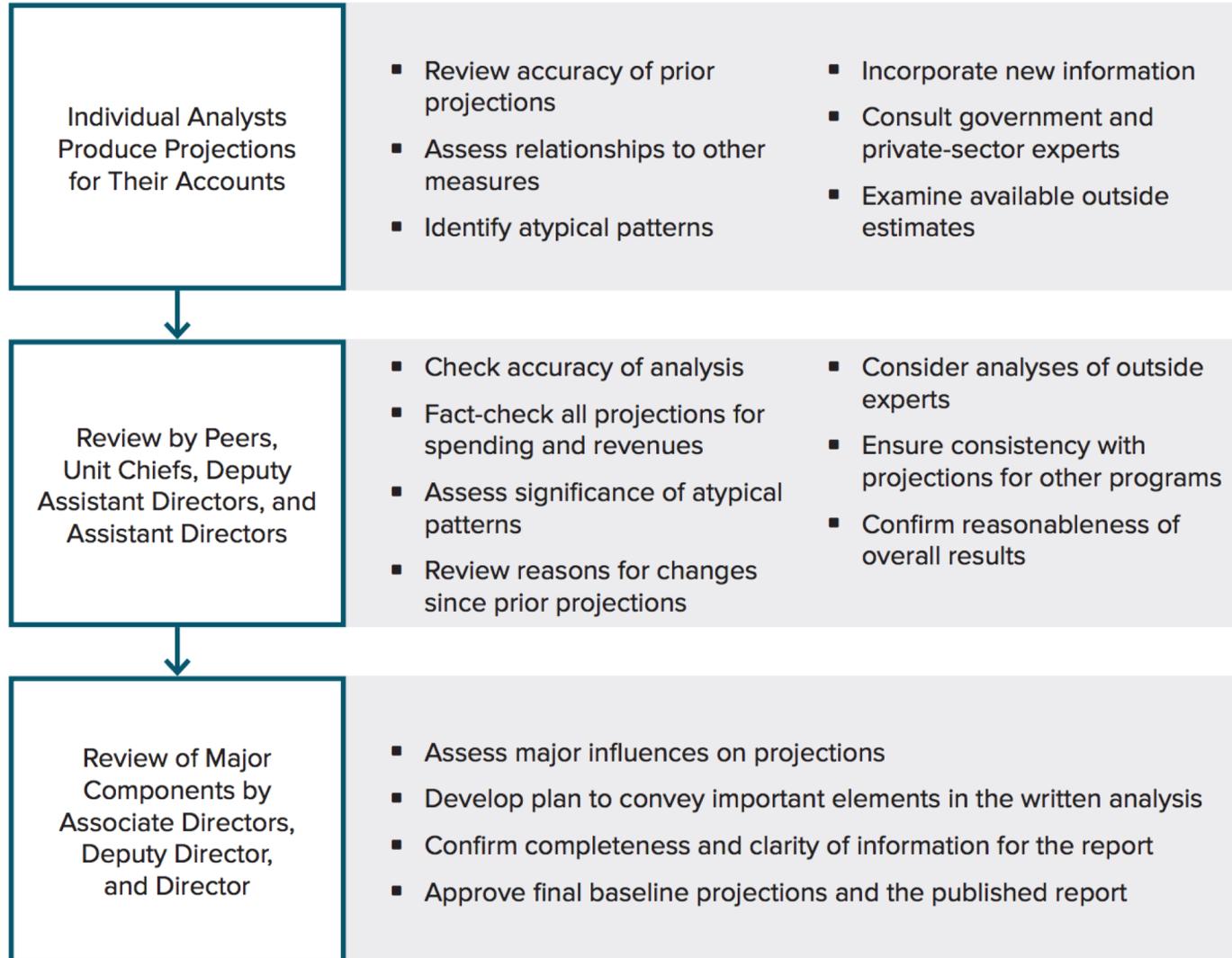
# Explaining Analytical Methods: Providing General Information

CBO works hard to explain its analytical methods. Sometimes, the explanations are for a general audience. For instance, nearly every formal cost estimate includes a section describing the basis of the estimate.

Recent examples of other publications providing general information include the following:

- A report on how CBO prepares baseline budget projections
- A slide deck about CBO's health insurance simulation model
- A report on the model that CBO uses to make long-term projections
- An appendix about the effects of the 2017 tax act on the economy and budget
- A primer about how CBO estimates the costs of federal credit programs

# Explaining Analytical Methods: Baseline Budget Projections



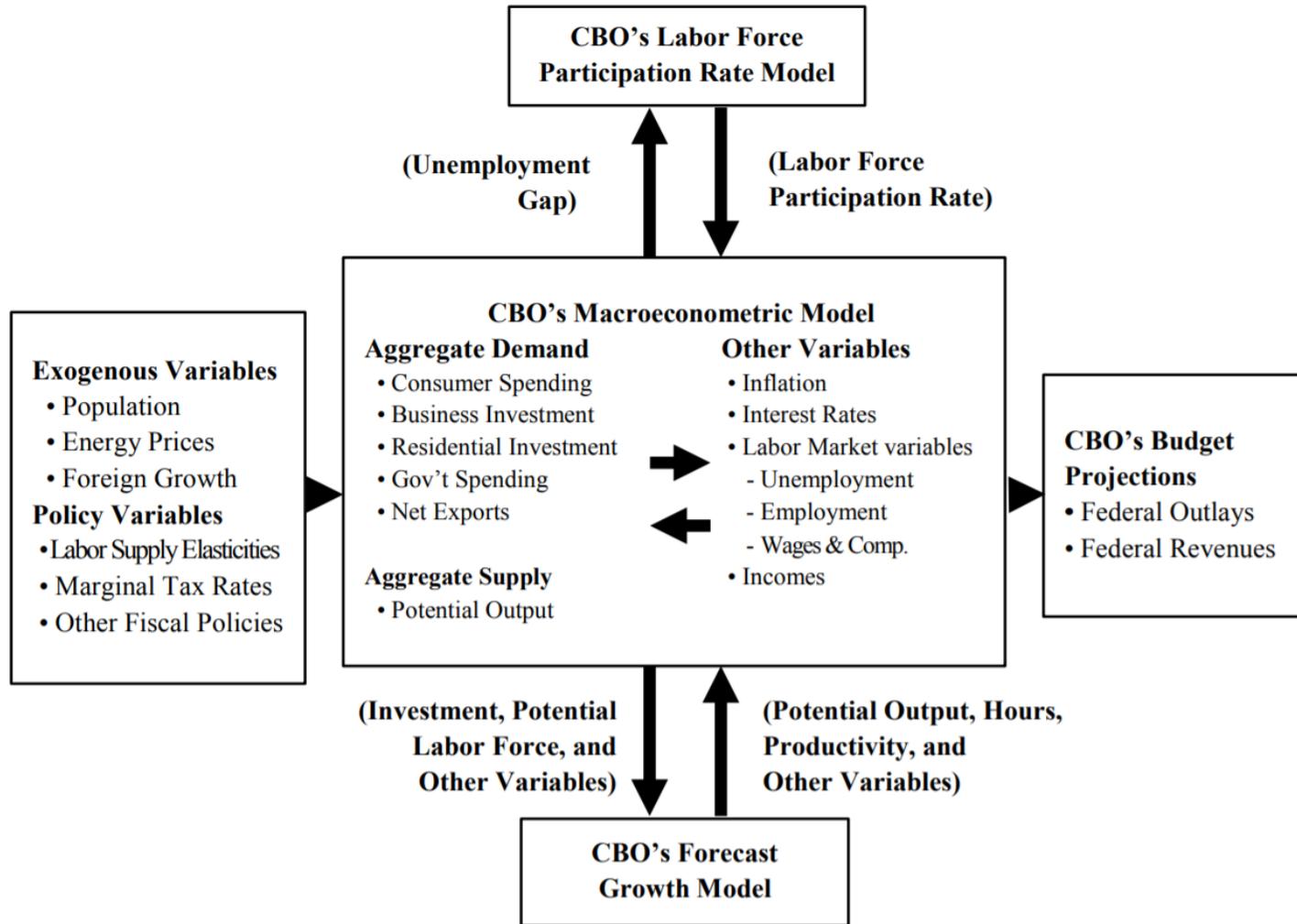
That report on how CBO prepares its baseline budget projections laid out the steps for developing and reviewing the work.

# Explaining Analytical Methods: Providing Technical Information

At other times, CBO explains its methods by providing technical information. Recent examples include the following:

- A working paper on how CBO projects labor force participation rates
- An appendix describing how CBO analyzes the distribution of household income
- A slide deck about modeling the subsidy rate for federal single-family mortgage insurance
- An appendix describing how CBO estimates the operating costs of Air Force aircraft
- A working paper on how CBO produces its 10-year economic forecast

# Explaining Analytical Methods: CBO's Forecasting Models



That working paper on CBO's economic forecast showed researchers how the agency's various models interact.

## Explaining Analytical Methods: Computer Code

To let researchers replicate its results, CBO posts the computer code and documentation for some analyses. For example:

- Code for CBO's estimates of maximum sustainable output allows researchers to replicate those estimates for 1949 through 2016
- Code for CBO's imputations of survey underreporting allows researchers to replicate those imputations for 1979 through 2016 for three large programs

## Releasing Data

CBO provides many files of data underlying the analysis in its major reports and other studies. For example, along with its April 2018 and January 2019 reports on the budget and economic outlook, the agency posted files containing the following information:

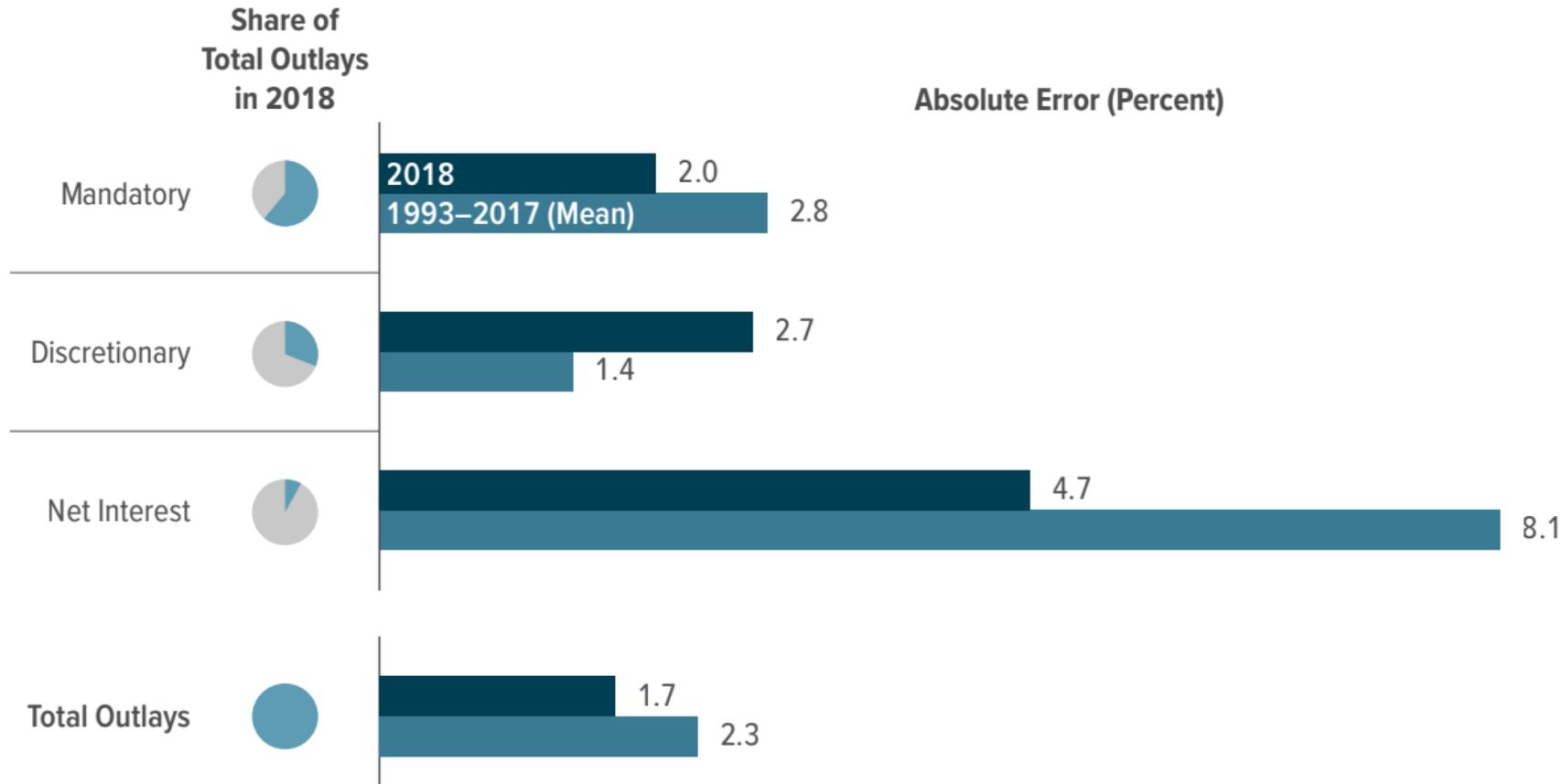
- Historical data
- Spending projections by budget account
- Revenue projections by category, along with tax parameters and effective marginal tax rates
- 10-year projections of economic output, prices, labor market measures, interest rates, income, and other economic factors
- Details of projections and underlying parameters for Social Security, Medicare, student loans, agriculture programs, and many other programs

# Analyzing the Accuracy of Estimates

CBO analyzes the accuracy of its estimates and publishes the results in reports. These are some examples:

- A report on CBO's economic forecasting record since 1976
- A report on CBO's revenue forecasting record since 1982
- A report on how CBO's projections of subsidies under the Affordable Care Act compared with actual outcomes
- Reports on how CBO's projections of outlays for 2017 and 2018 compared with actual outcomes
- A look back at CBO's estimate of the effects of the 2009 Recovery Act on the Supplemental Nutrition Assistance Program

# Analyzing the Accuracy of Estimates: Projection Errors for Outlays



CBO quantified how accurate its projections of various kinds of spending were for 2018.

# Comparing Current Estimates With Previous Ones

CBO routinely compares its current estimates with its previous ones. For example:

- Reports on the budget and economic outlook explain the differences between current and previous revenue and spending projections
- Those reports also explain changes to CBO's economic forecast
- Reports on federal subsidies for health insurance explain how and why current estimates of insurance coverage and subsidies differ from the previous year's estimates
- Reports on the distribution of household income explain any methodological changes and other reasons why estimates differ from those in previous reports
- Other reports describe changes in CBO's long-term projections for Social Security

## Comparing CBO's Estimates With Others'

CBO compares its estimates with those of other organizations and the Administration. For example:

- CBO compares its economic forecast with those of the Federal Reserve and the *Blue Chip* survey of 50 private-sector forecasters
- CBO compared its estimates of subsidies provided under the Affordable Care Act with those of government actuaries, the RAND Corporation, and the Lewin Group
- CBO compares its long-term projections for Social Security with estimates by the trustees of the program
- CBO compared its estimates of the economic effects of the 2017 tax act with those of several other organizations

# Comparing CBO's Estimates With Others': Estimates of the Effects of the 2017 Tax Act on the Level of Real GDP

Percent

	First Five Years					Tenth Year	Average		
	2018	2019	2020	2021	2022	2027	2018– 2022	2023– 2027	2018– 2027
Moody's Analytics	0.4	0.6	0.2	0.1	0.0	0.4	0.3	0.3	0.3
Macroeconomic Advisers	0.1	0.3	0.5	0.6	0.6	0.2	0.4	0.5	0.5
Tax Policy Center <sup>a</sup>	0.8	0.7	0.5	0.5	0.5	*	0.6	0.3	0.5
International Monetary Fund	0.3	0.9	1.2	1.2	1.0	-0.1	0.9	0.3	0.6
Joint Committee on Taxation	–	–	–	–	–	0.1 to 0.2	0.9	0.6	0.7
<b>Congressional Budget Office</b>	<b>0.3</b>	<b>0.6</b>	<b>0.8</b>	<b>0.9</b>	<b>1.0</b>	<b>0.6</b>	<b>0.7</b>	<b>0.8</b>	<b>0.7</b>
Goldman Sachs	0.3	0.6	0.7	0.7	0.7	0.7	0.6	0.7	0.7
Tax Foundation	0.4	0.9	1.3	1.8	2.2	2.9	1.3	2.9	2.1
Penn Wharton Budget Model	–	–	–	–	–	0.6 to 1.1	–	–	–
Barclays	0.5	–	–	–	–	–	–	–	–

CBO published that last comparison in its April 2018 report about the budget and economic outlook.

# Estimating the Effects of Policy Alternatives

CBO's baseline budget projections incorporate the assumption that current laws generally remain the same. But CBO also estimates or enables others to estimate how different assumptions about future policies would affect budget projections. For example:

- A report on the long-term budget outlook showed how the federal budget would evolve under three scenarios with alternative policies
- Reports on the 10-year budget and economic outlook show the effects of providing different amounts of discretionary appropriations and of extending or repealing certain tax provisions
- An interactive tool allows users to create customized plans for the military's forces and see the projected costs
- Periodic reports present collections of options for reducing the deficit

# Estimating the Effects of Policy Alternatives: CBO's Interactive Force Structure Tool

## Change Force Structure

Army
Navy
Air Force
Defensewide

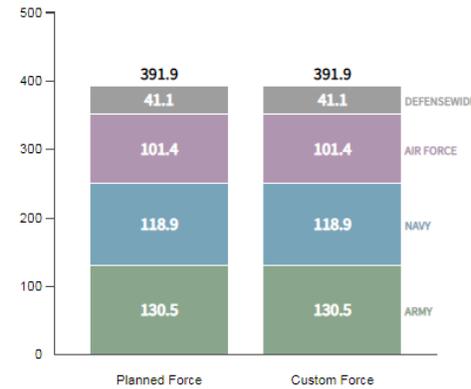
The Department of the Army includes the Army's active component; the two parts of its reserve component, the Army Reserve and the Army National Guard; and all federal civilians employed by the service. By number of military personnel, the Department of the Army is the biggest of the military departments. It also has the largest operation and support (O&S) budget. The Army does not have the largest total budget, however, because it receives significantly less funding to develop and acquire weapon systems than the other military departments do. The Army is responsible for providing the bulk of U.S. ground combat forces.

[Learn more about the force structure of the Army.](#)

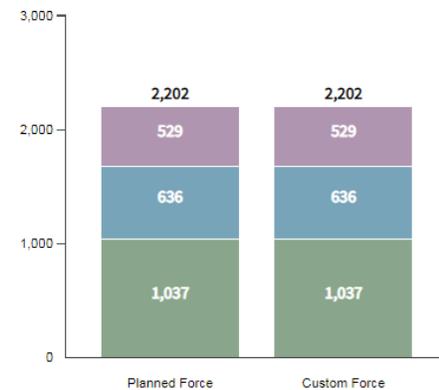
Unit Type	Force Size	+/- <a href="#">(undo all)</a>
Active Armored Brigade Combat Team <a href="#">?</a>	11	<input type="range"/>
National Guard Armored Brigade Combat Team <a href="#">?</a>	5	<input type="range"/>
Active Stryker Brigade Combat Team <a href="#">?</a>	7	<input type="range"/>
National Guard Stryker Brigade Combat Team <a href="#">?</a>	2	<input type="range"/>
Active Infantry Brigade Combat Team <a href="#">?</a>	13	<input type="range"/>
National Guard Infantry Brigade Combat Team <a href="#">?</a>	20	<input type="range"/>
Active Aviation Brigade <a href="#">?</a>	13	<input type="range"/>

## View Results

Operation and Support Costs  
Annual Average, in Billions of 2017 Dollars



Number of Military Personnel  
Annual Average, in Thousands



That interactive tool lets users add or subtract tanks, ships, aircraft, and other units.

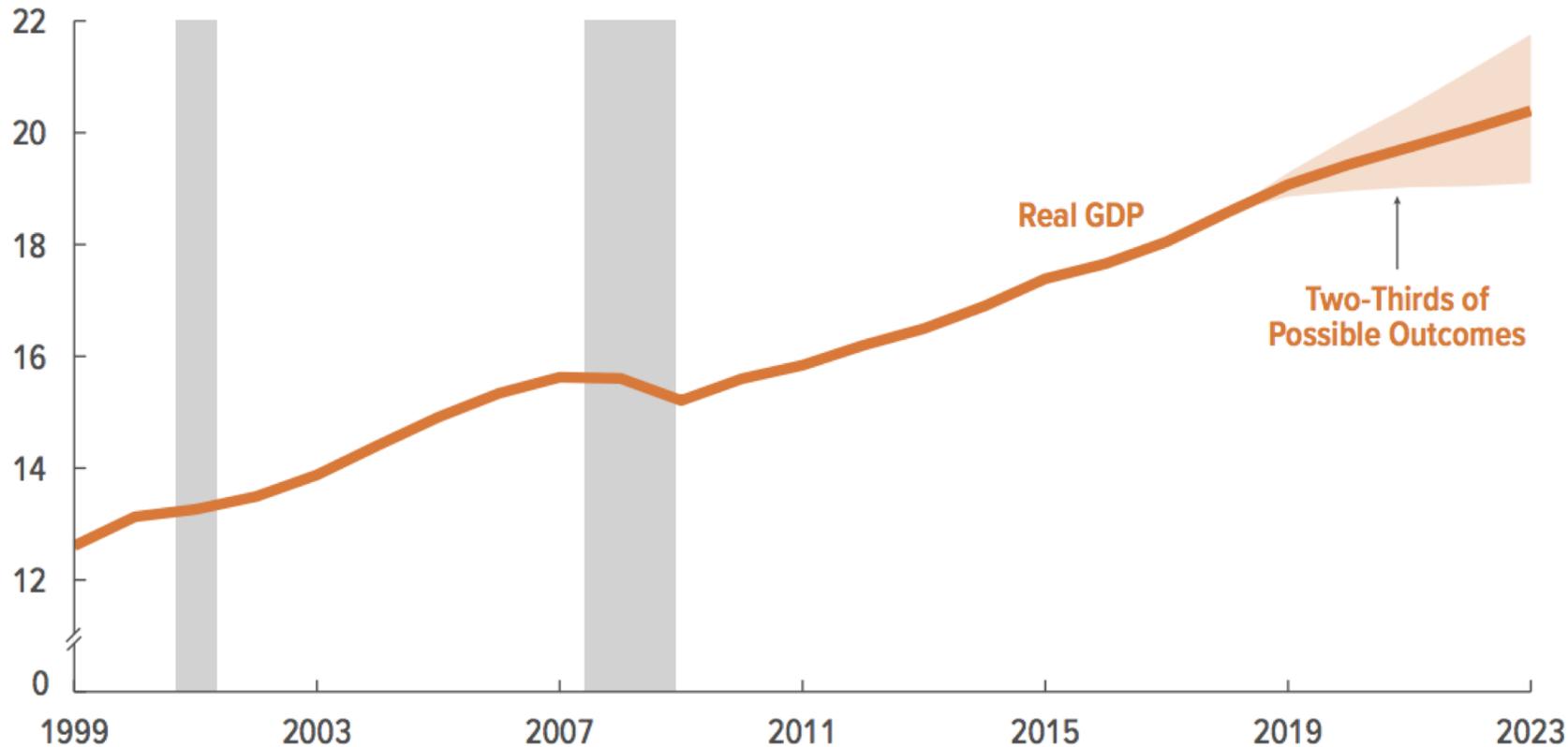
# Characterizing Uncertainty

CBO's reports and cost estimates describe the uncertainty surrounding them. For example:

- The most recent report on the long-term budget outlook included a discussion of how federal debt would differ if key economic variables were higher or lower than CBO estimates
- A report on federal subsidies for health insurance, the annual report on the 10-year budget and economic outlook, and many cost estimates contain discussions of uncertainty
- Interactive workbooks show how CBO's budget projections would change if certain economic variables differed from CBO's estimates

# Characterizing Uncertainty: The Uncertainty of CBO's Projections of Output

Trillions of 2012 Dollars



As the most recent report on the 10-year budget and economic outlook showed, in CBO's baseline projections, real GDP grows at an average annual rate of 1.9 percent over the 2019–2023 period, but there is a roughly two-thirds chance that the growth will be between 0.6 percent and 3.2 percent.

# Creating Data Visualizations

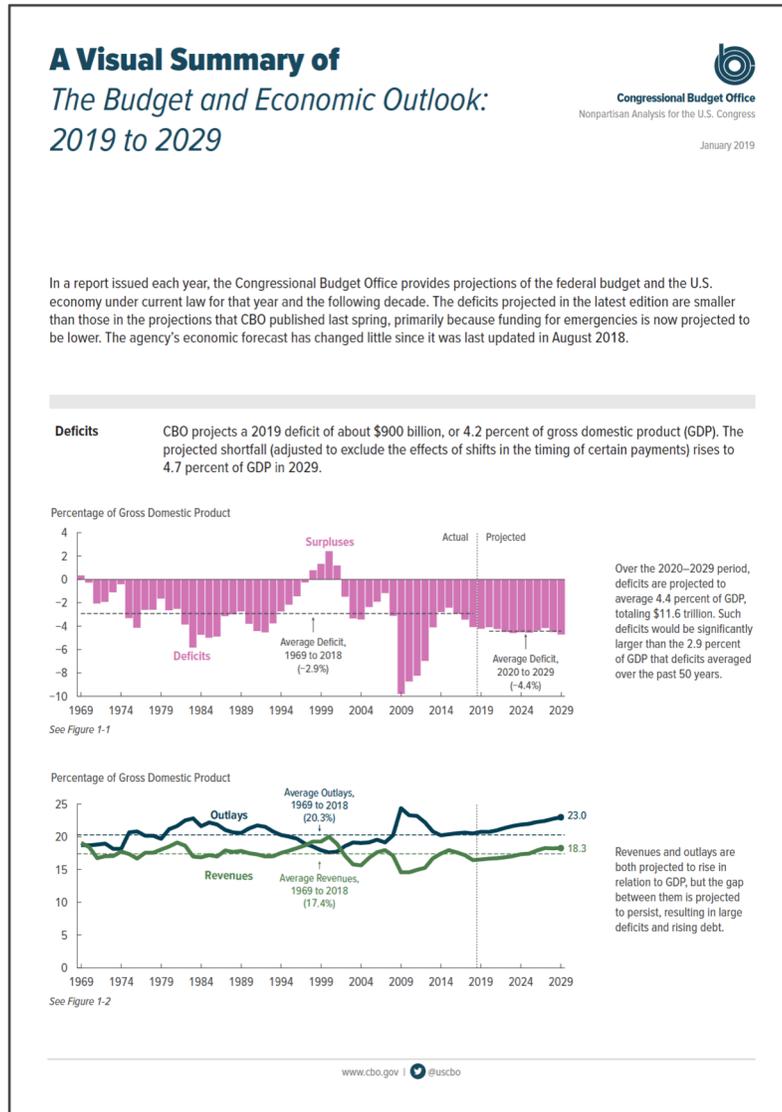
To make the federal budget and CBO's analyses easier to understand, the agency publishes infographics, slide decks, and chart books—these, for example:

- *The Federal Budget in 2017: An Infographic*
- *The 2018 Long-Term Budget Outlook in 25 Slides*
- *Factors Affecting the Labor Force Participation of People Ages 25 to 54*

Supplementing regularly updated slide decks on the topic, CBO just released its first visual summary—in lieu of a written summary:

- *A Visual Summary of The Budget and Economic Outlook*

# Creating Data Visualizations: A Visual Summary



For the most recent report on the 10-year budget and economic outlook, CBO presented—in 12 figures on four pages—the visual story for deficits, debt, revenues, spending, and the economy.

# Conducting Outreach

CBO's staff communicate frequently with people outside the agency to explain findings and methods, gather information, and obtain feedback.

The most important form of outreach is direct communication between CBO and the Congress—in person, by phone, and by email—to explain the agency's work, respond to questions, and seek feedback.

Other types of outreach include the following:

- Consultation with outside experts
- Presentations on Capitol Hill and at academic and research institutions and other organizations about CBO's analyses and processes
- Podcasts
- Blog posts

# **Concluding Thoughts**

## Making CBO's Work Widely Available

CBO has a long-standing commitment to ensuring that its work is widely available—to the Congress and the public.

- The agency posts all formal cost estimates and analytic reports on its website
- It then notifies subscribers by email and Twitter

# The Costs of Transparency

Being transparent has costs. To facilitate its efforts to improve transparency, CBO requested—and has received—an increase in its annual appropriation (as a first step in a three-year ramp-up).

Transparency can be constrained by the pace of legislative activity. Because of time constraints that often apply to the consideration of legislation, CBO's commitment to providing high-quality estimates when the Congress needs them may limit the time available to explain and document those estimates.

CBO must always weigh the benefits and costs of devoting resources to different activities. So as CBO explores more ways of being transparent, it will seek feedback from the Congress about which are particularly valuable and informative, which may have less value, and what other methods the agency can use to provide useful information about its work.

# This Year

This year, CBO aims to:

- Publish more overviews and documentation of some of its major models and more detailed information, including computer code, about key aspects of those models
- Update its template for cost estimates to make important information easier to find and read
- Continue to evaluate previous estimates in order to improve future ones