



Testimony

The Congressional Budget Office's Work Since May 2015 and Plans for the Future

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Chairman Enzi, Ranking Member Sanders, and Members of the Committee, I appreciate the opportunity to discuss the work of the Congressional Budget Office. CBO's mission is an important one: to provide nonpartisan budgetary and economic analysis that is timely and carefully thought-out in order to support the work of this Committee and the Congress as a whole as you address the critical issues facing the nation. That mission constitutes my core responsibility.

We at CBO have relied on the budget committees to explain and communicate to others in the Congress what the agency's role is, to provide constructive feedback on how the agency can best serve the Congress, and to provide guidance on what legislative developments are occurring and what the Congress's priorities are. We are very grateful for that support and guidance, which are key to our success.

Since I last testified about CBO's work before you in May 2015, the agency has continued to work diligently to carry out its mission and has emphasized five areas of work that are of particular interest to the Committee:¹

First, to respond to the needs of the budget committees, CBO has prepared a multitude of cost estimates, both formal and informal, to support the committees' role in budget enforcement, as well as in the development of a budget resolution.

Second, CBO continues to press to make its analysis transparent. Its publications go well beyond simply presenting results; instead, the agency works hard to explain the basis of its findings so that Members of Congress, their staff, and outside analysts can understand the results and the methodologies used. For example, the agency has supplemented reports about the budgetary effects of health insurance subsidies and hurricane damage with working papers detailing, respectively, its approach to estimating the effects of the Affordable Care Act on the labor market and its approach to estimating expected hurricane damage.²

Third, CBO has emphasized "dynamic analysis." For example, in response to the requirement for certain dynamic analyses specified in concurrent budget resolution for fiscal year 2016, CBO (in collaboration with the staff

of the Joint Committee on Taxation) completed several such estimates for H.R. 3762, the Restoring Americans' Healthcare Freedom Reconciliation Act. The agency also solicited extensive feedback on its methods as it continues to refine and enhance its modeling approaches.

Fourth, CBO has devoted significant resources to analyzing trade agreements and improving its capability to model their effects. The agency continues to prepare to analyze potential legislation related to the Trans-Pacific Partnership.

Finally, CBO continues to devote resources to attracting and retaining talented people and developing their skills. Among the notable staffing changes, Mark Hadley became the agency's Deputy Director in June, and two new Assistant Directors—one for macroeconomic analysis and the other for tax analysis—joined the agency this year.

In the coming year, CBO will:

- Continue to be guided by its mission and core values;
- Aim to expand its analytical capacity—with an emphasis on macroeconomic analysis, health care issues, and modeling capabilities; and
- Focus on meeting three broad goals—continuing to provide the Congress with budget and economic information that is objective, insightful, and timely; presenting and explaining the methodology and results of CBO's analyses clearly; and improving CBO's internal management.

CBO's Mission to Serve the Congress

The Congressional Budget Act of 1974 instituted a formal process through which the Congress could develop, coordinate, and enforce its own budgetary priorities. It also created legislative institutions to implement the new Congressional budget process: the House and Senate Budget Committees to oversee execution of the budget process and CBO to provide the budget committees and the Congress with objective, impartial information about budgetary and economic issues. CBO's work follows

1. See the testimony of Keith Hall, Director, Congressional Budget Office, before the Senate Committee on the Budget, *The Work of the Congressional Budget Office* (May 19, 2015), www.cbo.gov/publication/50177.

2. See Edward Harris and Shannon Mok, *How CBO Estimates the Effects of the Affordable Care Act on the Labor Market*, Working Paper 2015-09 (Congressional Budget Office, December 2015), www.cbo.gov/publication/51065; and Terry Dinan, *CBO's Approach to Estimating Expected Hurricane Damage*, Working Paper 2016-02 (Congressional Budget Office, June 2016), www.cbo.gov/publication/51610.

processes specified in that law and subsequent laws or developed by the agency in concert with the budget committees and the Congressional leadership. The agency's chief responsibility under that law is to help the budget committees with the matters under their jurisdiction. The agency also supports other Congressional committees—particularly the Appropriations, Ways and Means, and Finance Committees, as required by the Budget Act—and the Congressional leadership.

To fulfill its mission to serve the Congress, CBO does the following:

- Prepares reports on the outlook for the economy;
- Analyzes trends and recent developments related to federal spending and revenues and constructs budget projections for the next 10 years and the longer term;
- Estimates the effects of the President's budgetary proposals and numerous alternative policy choices on the budget and the economy;
- Estimates the cost of legislative proposals—which involves providing formal cost estimates for all bills reported by committees of the House and Senate, many more informal cost estimates while legislation is being developed, estimates of the cost of all appropriation bills, and estimates of the cost of a great many amendments as legislation is considered by the House and Senate;
- Estimates the cost of intergovernmental and private-sector mandates in reported bills;
- Conducts policy studies of governmental activities, policy choices facing lawmakers, and other developments that have significant budgetary and economic impacts; and
- Provides testimonies on a broad range of budgetary and economic issues.

In 2015, CBO produced more than 600 formal cost estimates and mandate statements, thousands of informal estimates, more than 100 “scorekeeping” tabulations for appropriation acts, and multiple budget projections and economic forecasts. In addition, the agency released more than 90 analytic reports and working papers.³ In 2016, the pace of work is much the same.

To carry out its mission, CBO has requested an appropriation of \$47.6 million for fiscal year 2017, an increase of \$1.1 million, or 2.4 percent, from the \$46.5 million provided to the agency for 2016.

CBO's Core Values and Related Policies

In a 1976 memorandum, CBO's founding director, Dr. Alice Rivlin, enunciated some of the agency's core values:

As we begin the first full year with the new Congressional budget procedures in place, I want to emphasize once again that CBO must be, and must be perceived to be, an objective, non-partisan, professional organization in the service of the Congress. . . . Our work and our publications must always be balanced, thorough and free of any partisan tinge. . . . Our task is to provide information which will help the whole Congress in reaching its decisions.

The agency is committed to providing information that is:

- Objective—representing not the personal opinions of CBO staff but the consensus and diversity of views of experts from around the country;
- Insightful—applying the best new evidence and innovative ideas as well as the lessons of experience;
- Timely—responding as quickly as possible to the needs of the Congress; and
- Clearly presented and explained—so that policymakers and analysts understand the basis for the agency's findings and have the opportunity to question the analysis and methods used.

In keeping with CBO's mandate to provide analysis that is objective and impartial, the agency makes no policy recommendations. Instead, it strives to present fully and fairly the likely consequences of alternative proposals being considered by the Congress so that lawmakers can make informed policy choices.

3. For more details, see Congressional Budget Office, *The Congressional Budget Office's Work in 2015: A Report to the Congress* (April 2016), www.cbo.gov/publication/51290. CBO will update that report on a regular basis.

In conducting its work, CBO reviews studies by others; reviews historical data for federal programs, as well as any data available from states for many key grant programs; and does original research using administrative records and survey data. CBO evaluates the evidence by considering how generalizable the research findings are to a proposed policy, what sorts of biases might affect the results of a study, what the middle of the distribution of possible outcomes might be, and how the uncertainty of the results can be characterized.

All of CBO's estimates and reports are reviewed internally for objectivity, analytical soundness, and clarity. That rigorous process involves multiple people at different levels in the organization. In addition, CBO consults with numerous outside experts who represent a variety of perspectives. The experts include professors, analysts at think tanks, representatives of industry groups, other experts in the private sector, and people working for federal agencies and for state and local governments. Whenever practical, CBO's analytic reports are reviewed by outside experts who specialize in the issue at hand and who have diverse views about the topic being analyzed and methods of analysis. In some cases, those experts are members of CBO's Panel of Economic Advisers or Panel of Health Advisers. Although such experts provide considerable assistance, CBO is solely responsible for its work.

Maintaining high-quality work in the face of its many demands is something CBO takes very seriously. The agency must balance its commitment to respond quickly to the Congress's needs with its professional responsibility to release reports and estimates only when they reach sufficient quality. Part of CBO's success is built upon its ability to strike that balance. Still, at times, CBO's analyses may take longer than the Congress hopes.

CBO is also committed to maintaining a level playing field with regard to the information and analysis that it provides—ensuring that its work is made widely available to the Congress and the public. The agency releases publicly all of its formal cost estimates and analytic reports. It delivers its work to interested Members of Congress and their staff, including, in particular, the sponsor of legislation or requester of a report, the Chairman and Ranking Member of the committees of jurisdiction, and the budget committees. At about the same time, the agency posts the work on its website. In addition, an email service,

Twitter announcements, and RSS (really simple syndication) feeds notify subscribers when the agency publishes work. CBO continually strives to make its work more accessible on its website and on its social media platforms. For example, the agency has made a number of enhancements to the website, including creating a special collection for major recurring reports; displaying in one place the spreadsheets that show baseline budget and economic projections prepared in various years; displaying in another a collection of the detailed baseline projections for selected major programs; and making information about the budgetary effects of policy options in separate reports searchable by topic online.⁴

In some circumstances, though, the needs of the Congress lead CBO to keep the results of an analysis confidential. Such analyses include informal cost estimates and other types of information produced to assist in the development of legislation. Those informal communications do not undergo the same review required for formal estimates. They are often prepared when committees are evaluating alternative proposals to accomplish their goals, have not made any specific proposals public, and need the flexibility to modify their proposals before they become public, sometimes in response to CBO's preliminary estimates. In fact, CBO's analysts often provide informal, preliminary estimates to committee staff for a broad range of legislative options, making possible the consideration of different approaches before a specific legislative path is decided upon. In such situations, CBO recognizes that the confidentiality of its work is critical to committees' deliberations, so it keeps its informal estimates confidential as long as the proposals are not made public. (Such confidentiality generally does not apply to proposals that differ only in minor details from ones that are in the public domain.) However, once such a proposal becomes public—as introduced legislation or through public discussion of its major elements—CBO makes its estimate for that proposal available to any interested party in the Congress.

4. See Congressional Budget Office, "Major Recurring Reports," www.cbo.gov/about/products/RecurringReports, "Budget and Economic Data," www.cbo.gov/about/products/budget_economic_data, "Baseline Projections for Selected Programs," www.cbo.gov/about/products/baseline-projections-selected-programs, and "Budget Options," www.cbo.gov/budget-options.

CBO's Efforts to Expand Its Analytical Capacity

CBO continually strives to improve its analytical capacity. Currently, the agency is giving special emphasis to three areas:

- Analyzing the economic effects of federal tax and spending policies, including conducting “dynamic analysis” of certain legislation,
- Analyzing health care issues, and
- Expanding modeling capabilities and access to data.

To support the first two items above, CBO seeks to boost its staffing by three new full-time-equivalent positions (FTEs)—from the 235 FTEs supported by the 2016 appropriation to 238 for 2017. About one-third of the requested increase in CBO's budget, \$391,000, would fund those new positions.

Dynamic Analysis

In May 2015, the Congress adopted a concurrent resolution on the budget for fiscal year 2016 requiring CBO, to the greatest extent practicable, to incorporate macroeconomic effects into its cost estimates for major legislation approved by Congressional committees. In response, CBO (in collaboration with the staff of the Joint Committee on Taxation) completed several such estimates in the past year. Because macroeconomic analyses require complex modeling and a significant amount of time, they can be produced for only a small number of major proposals, and only if time allows.

CBO has devoted significant effort to developing and enhancing analytical tools that enable the agency to assess the macroeconomic effects of fiscal policies. In selected reports—as distinguished from cost estimates—CBO has provided estimates of the effects that significant changes in federal spending and tax policies would have on the overall economy. Some of those analyses have also examined how the projected changes in the economy would in turn affect the federal budget. Since May 2015, the agency has incorporated dynamic analysis in its annual report on the long-term budget outlook; once again in its annual examination of the economic impact of the President's budget and in reports about alternative budgetary paths; and in reports on the macroeconomic effects of federal investment, of repealing the Affordable Care Act, and of eliminating automatic reductions to discretionary

spending caps. Notably, in *The 2016 Long-Term Budget Outlook*, all of CBO's projections beyond 2026 incorporate, for the first time, the macroeconomic effects of fiscal policy under current law.⁵

CBO expects to devote considerable attention to further developing its capacity to conduct dynamic analysis in the coming year, so that it can effectively carry out the requirements specified in the budget resolution. Cost estimates that incorporate dynamic analysis will include all of the information typically presented in cost estimates as well as information on the macroeconomic effects and the uncertainty surrounding those effects. To the extent possible within the time available, CBO will explain the basis for determining the budgetary impact of macroeconomic effects. The agency has already shifted some resources to bolster its dynamic analysis and has requested funding for additional staff to work on such analyses.

Analysis of Federal Health Care Spending

CBO faces significant challenges in projecting the future costs of federal health care programs and in analyzing proposals to change those programs. Although spending for health care in the United States has grown more slowly in recent years than it had previously, health care spending per person has grown faster, on average, than the nation's economic output per person during the past few decades.

CBO expects that federal spending on the government's major health care programs will continue to rise substantially relative to the size of the economy, though the estimates are subject to a considerable degree of uncertainty. A particular challenge is assessing the extent to which the recent slowdown in the growth of health care spending results from temporary factors like the recession or, instead, reflects more enduring developments. CBO has found no direct link between the recession and slower growth in spending for Medicare. Accordingly, over the past several years, CBO has substantially reduced its 10-year and long-term projections of spending per person for Medicare, for Medicaid, and for the country as a whole. However, the growth rates for such spending per person are expected to rebound somewhat from their recent very low levels.

5. See Congressional Budget Office, *The 2016 Long-Term Budget Outlook* (July 2016), www.cbo.gov/publication/51580.

Interest in legislative proposals related to health care—on the part of committees of jurisdiction, the Congressional leadership, and the budget committees—remains very high. The enactment of the Affordable Care Act in 2010 has been followed by a great deal of Congressional interest in analysis of that legislation and of possible modifications to it, as well as potential changes to Medicare and Medicaid. Several developments could boost that interest, along with CBO's workload. For instance, more data will become available about the costs of the expanded health insurance coverage under the Affordable Care Act, which will further understanding of potential effects of changing that law.

CBO is in the process of analyzing various aspects of the health care system and enhancing its analytical capacity to assess the effects of future legislation on that system and on the federal budget. In particular, it is incorporating new data from the Current Population Survey into its simulation model of health insurance coverage and reviewing and updating every aspect of that model, which forms the backbone of its budget projections and cost estimates related to federal health care spending for people under age 65.

CBO's Modeling Capabilities and Access to Data

In addition to enhancing its capability for dynamic analysis and its capacity to assess the effects of future legislative proposals on the health care system and on the federal budget, CBO is also working to expand its capacity to analyze energy and environmental issues. Furthermore, CBO expects to expend considerable effort to enhance its access to data (such as earnings data reported by employers to government agencies matched with survey data and health insurance claims records) to improve the analyses the agency produces.

Expand the Capacity to Assess Energy and Environmental Proposals. CBO is expanding its capacity to assess the effects of future legislation on energy markets and the environment. In particular, the agency has procured the licenses necessary to make use of the Energy Information Administration's National Energy Modeling System (NEMS) to both expand the scope of policy proposals that CBO can examine in detail and to improve the consistency of the analysis across proposals.

The use of NEMS will increase CBO's ability to estimate the effects of changes to energy policy on the prices and production of different types of fuels and on the economy

as a whole, among other outcomes. For instance, expanding its capacity in that way will allow CBO to:

- Assess policy changes that would allow oil and gas production on more federally controlled lands (both onshore and offshore);
- Evaluate the effect of potential changes in Corporate Average Fuel Economy, or CAFE, standards; and
- Model the effects of potential changes in the requirements for the use of renewable fuels in transportation or electricity generation.

Enhance and Expand CBO's Access to Data. In the coming year, CBO would like to hold more data at the agency, both data that analysts now use regularly and new data that the agency hopes to obtain. The resulting access (both speedier and more consistent) would benefit CBO's work—its budget projections for the next 10 years and the long term, cost estimates for legislative proposals, and policy studies of issues that have significant budgetary and economic impacts—as well as the timeliness of the work.

For example, enhanced and expanded access to data would allow CBO to:

- Enhance its projections of educational attainment, thereby improving its projections of total factor productivity and economic growth;
- Improve its modeling of various demographic characteristics—including marriage patterns and the variation in fertility and mortality rates by socioeconomic status—which would bolster projections of Social Security benefits and income tax receipts;
- Improve its understanding of payment rates for health care goods and services in commercial insurance plans and in privately run Medicare Advantage plans and of the factors affecting those rates, thereby enhancing the agency's ability to model proposals affecting private insurance or establishing a "premium support" system for Medicare;
- Better its understanding of the resources available to people in retirement, which would allow the agency to expand its recent analysis of families' wealth to also consider Social Security income and income from defined benefit pensions;

- Enhance its understanding of labor force participation at older ages and changes in earnings inequality over time, which would improve projections of Social Security benefits and people's behavior in claiming benefits; and
- Better its understanding of the costs of operating military forces, which would improve projections of defense spending.

CBO is grateful for the help the budget committees have given when the agency has sought data in the past and hopes to continue working together on future efforts.

Three Broad Goals for CBO

On a broader scale, in carrying out its mission of serving the Congress during 2016 and 2017, CBO will focus on meeting three goals:

- Continue to provide the Congress with budget and economic information that is objective, insightful, and timely.
- Continue to present and explain the methodology and results of CBO's analyses clearly.
- Continue to improve CBO's internal management.

Continue to Provide the Congress With Budget and Economic Information That Is Objective, Insightful, and Timely

By the end of this year, CBO expects that it will have provided the following estimates and other analyses to the Congress (in quantities roughly similar to last year's):

- About 20 reports presenting assessments of budgetary developments during the current fiscal year, the outlook for the budget and the economy, analyses of the President's budget, long-term budget projections, and options for reducing budget deficits;
- More than 600 formal cost estimates, all of which will include not only estimates of federal costs but also assessments of the cost of mandates imposed on state, local, and tribal governments and on the private sector;

- Thousands of preliminary, informal cost estimates, the demand for which is very high as committees seek to have a clear picture of the budgetary impact of proposals and variants of proposals before they formally consider legislation;
- More than 100 scorekeeping tabulations, including account-level detail for individual appropriation acts at all stages of the legislative process and summary tables showing the status of discretionary appropriations (by appropriations subcommittee) and running totals on a year-to-date basis; and
- Roughly 75 analytic reports and other publications—generally required by law or prepared in response to requests from the Chairmen and Ranking Members of key committees—on a broad range of topics, including health care, Social Security, policies for increasing economic growth and opportunity, changes in benefit programs, defense policy, infrastructure, energy policy, and the government's role in the financial system. Those publications explain developments, provide information about the effects of alternative policies, explain current and alternative budgetary concepts used to estimate costs, and enhance CBO's transparency about its models and procedures; in doing those things, the projects convey important information to the Congress and improve the agency's capabilities for future analyses.

Such a body of analysis requires very hard work by CBO's highly dedicated staff. Nevertheless, the agency expects that the anticipated volume of estimates and other analyses it can produce will fall considerably short of the number of Congressional requests, especially with regard to health care issues. In addition to the interest in analyses of the Affordable Care Act and possible modifications to it, committees are considering many other types of proposals for changes in federal health care programs. Also, the slow recovery from the economic downturn has spurred interest in the agency's economic forecasts and in policies that might affect economic growth and opportunity in both the near term and the longer term. Other time-sensitive issues arise frequently and add to an already heavy workload: Over the past year, for example, CBO analyzed legislation related to the privatization of the air traffic control system, Puerto Rico's debt crisis, sentencing reform, trade facilitation and the enforcement of certain trade laws, child nutrition programs, and child welfare programs.

Analyzing proposals has strained the agency's resources in many areas. As a result, responding in a balanced way to requests from both the majority and minority of multiple committees in both the Senate and the House is a continuing challenge. CBO regularly consults with committees and the Congressional leadership to ensure that its resources are focused on the work that is of highest priority to the Congress.

Continue to Present and Explain the Methodology and Results of Analyses Clearly

CBO works hard to make its analysis transparent. To begin with, CBO's publications go well beyond simply presenting results; instead, the agency explains the basis of its findings so that Members of Congress, their staff, and outside analysts can understand the results and the methodologies used. In particular, although much of the work that CBO does is extremely technical in nature, the agency devotes substantial time and energy to presenting the work as clearly and nontechnically as possible. It continually seeks feedback about those efforts in order to ensure their effectiveness.

CBO also seeks extensive external review of the agency's analytic reports before they are released and of the methodologies on which its products are based.

In the coming year, input from outside experts and extensive external review will remain an important component of transparency:

- CBO will continue to solicit external professional review of its work so that the agency's analyses reflect both the consensus and diversity of views of a range of experts from around the country.
- The agency's cost estimates will draw on consultation with outside experts.
- The agency's Panel of Economic Advisers will meet twice to provide input on the agency's latest economic forecast and other issues, and the agency's Panel of Health Advisers will meet to discuss key issues affecting the agency's baseline projections and analyses of proposals and to examine new research in health care and health care financing. CBO will also regularly consult with those distinguished experts and other experts for guidance on the agency's work on a broad range of topics.

CBO also aims to clearly present the evidence underlying its analyses and how the agency assesses that evidence. To that end, CBO's documents and related information will aim to go well beyond presentations of results:

- Formal cost estimates will describe the basis for the estimate—that is, the information that CBO collected and how that information was used in constructing the estimates.
- The agency will document and explain the revisions to its budget projections in each successive baseline, and it will report on the accuracy of its projections. CBO released an assessment of the accuracy of its revenue projections in November 2015 and within the next year will do so for its spending projections and its economic forecasts.⁶
- The agency will publish supplemental data and other technical information with its key reports.
- Many of CBO's reports will provide substantial discussions of the relevant research literature and CBO's modeling approaches—in the text, in separate boxes, or in appendixes.
- CBO will increase public documentation of its most significant modeling efforts—by publishing background reports and working papers providing details about its analyses for nonexperts and technical descriptions for experts. In particular, the agency will publish working papers explaining its updated and enhanced model of the health insurance system and the models used in CBO's macroeconomic analysis.

And the agency will promote transparency by providing broad access:

- When CBO completes a budget or economic projection, a cost estimate for a public piece of legislation, or another type of analysis, it will make the results of that analysis available immediately to all Members of Congress, their staff, and the public.
- CBO's analysts will regularly explain details underlying the agency's estimates and other analyses to interested Congressional staff.

6. See Congressional Budget Office, *CBO's Revenue Forecasting Record* (November 2015), www.cbo.gov/publication/50831.

- CBO will regularly update pages on its website about dynamic analysis and methods for analyzing health insurance coverage to make its work in those areas easier to find.
- To promote discussion among experts in the field, CBO's analysts will present their work—including descriptions of their modeling approaches—in working papers and at professional conferences.
- CBO will enhance portions of its website to help Congressional staff better understand how to work with CBO.

Examples from CBO's past work illustrate other aspects of the agency's commitment to transparency. For instance, when CBO revised its views of the effectiveness of malpractice reform in reducing health care costs, of the effect of prescription drug use on Medicare's spending for other health care services, and of the effect on the budget deficit of raising Medicare's age of eligibility to 67, it issued reports explaining why. In recent reports, CBO explained how it assesses the budgetary effects of the United States' participation in the International Monetary Fund and why it projects that actual output will be below potential output, on average.⁷ Analyses of security issues have included supplemental information about how CBO models cost growth in the construction of new ships and other new weapon systems, and the costs of detecting dangerous cargo in shipping containers.⁸

In addition, CBO undertakes and publishes analyses of the sensitivity of its estimates to key parameters. For example, CBO's analyses of the economic effects of fiscal policies include alternative estimates that would apply if various effects were stronger or weaker than expected—such as the amount of short-term restraint provided by higher taxes or lower government spending or the

response of the labor supply to changes in tax rates. Similarly, an analysis of employment-based health insurance under the Affordable Care Act showed how the results would vary if employers' and employees' responses to that act differed from the agency's expectations.

The agency often responds to questions from Members of Congress about the methods used in its analyses. CBO's analysts spend a great deal of time meeting with interested Members of Congress and their staff to explain the details underlying cost estimates and reports. In its blog, CBO also highlights answers to questions from Members, sometimes explaining what the limitations of its analyses are and how new data and results from well-designed studies could help the agency better predict the potential effects of legislative proposals.

Even though CBO devotes substantial time and energy to presenting its work as clearly and nontechnically as possible, the pace of Congressional action often requires the agency to produce analyses quickly. So the amount of explanation that can be provided when an estimate or analytic report is released is sometimes limited by the time available. And because the overall demand for CBO's work is high and its resources are constrained, the agency needs to balance requests to explain more about finished analyses with requests for new analyses and with its other responsibilities, such as regularly updating its baseline budget and economic projections.

Continue to Improve Internal Management

In addition to focusing directly on serving the Congress, CBO devotes resources to attracting and retaining talented people, developing their skills, and providing the support services and other infrastructure needed to make them as productive as possible.

Nevertheless, CBO continues to face considerable competitive pressure in attracting and retaining the highly educated and skilled employees that it needs. More than two-thirds of CBO's staff consists of economists and budget analysts. Talented people with those backgrounds are highly sought by other government agencies, private analytic organizations, universities, and private companies. Some of CBO's economists and budget analysts could earn significantly higher compensation working in the private sector or other government agencies in both the executive and legislative branches. For example, both the Office of Management and Budget and the Government Accountability Office have the authority to pay significantly more

7. See Congressional Budget Office, *The Budgetary Effects of the United States' Participation in the International Monetary Fund* (June 2016), www.cbo.gov/publication/51663, and *Why CBO Projects That Actual Output Will Be Below Potential Output on Average* (February 2015), www.cbo.gov/publication/49890.

8. See Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2016 Shipbuilding Plan* (October 2015), www.cbo.gov/publication/50926, *Long-Term Implications of the 2016 Future Years Defense Program* (January 2016), www.cbo.gov/publication/51050, and *Scanning and Imaging Shipping Containers Overseas: Costs and Alternatives* (June 2016), www.cbo.gov/publication/51478.

than CBO does. In addition, most of CBO's staff who are not economists or budget analysts work in fields with competitive private labor markets; that group includes information technology professionals, lawyers, and others.

To attract and retain talented employees, CBO relies heavily on the nonmonetary rewards of working at the agency. Fortunately, the appeal of the agency's mission to provide objective analyses, the intellectual challenges, the open and collaborative culture that the agency has maintained since its founding, and the satisfaction of public service have enabled CBO to build a dedicated and skilled workforce. However, with the current limits on the salaries that CBO can pay in the competitive markets for economists, budget analysts, and other professionals, hiring and retaining strong performers will be difficult over the long term.

Since I last testified before the committee about the work of CBO on May 19, 2015, there have been several significant staffing changes.

Most notably, on June 6, 2016, **Mark Hadley** became CBO's Deputy Director. He has served CBO for 15 years in a variety of capacities. He started his CBO career as an analyst in the Budget Analysis Division, where he worked on cost estimates and projections related to deposit insurance, aviation, and commerce. After earning his law degree, he spent a few years in the private sector and then returned to CBO in 2006 as Deputy General Counsel. In 2008, he became General Counsel and served in that position until becoming the Deputy Director. Mr. Hadley has a J.D. degree from The George Washington University Law School and a master's degree in public affairs from the Robert M. La Follette School of Public Affairs at the University of Wisconsin. He received his B.A. from Truman State University.

In August 2016, **John McClelland** became Assistant Director for Tax Analysis following 18 years at the Department of the Treasury. At that agency, he most recently was Special Assistant to the Director of the Office of Tax Analysis (OTA). Before that, at OTA, he was the Director of Revenue Estimating; in that role, he was responsible for the Administration's estimates of the revenue consequences of all tax proposals. Over the course of his tenure at OTA, he worked on a variety of topics in taxation, with a particular focus on business taxes and the consequences of potential reforms. Earlier in his time at the Treasury Department, he was the ana-

lyst responsible for the forecasts of revenues from the corporate income tax and a variety of excise taxes. He received his doctorate in economics from the University of Maryland, College Park. He received his bachelor's degree in economics, mathematics, and environmental studies from Bowdoin College.

In January 2016, **Wendy Edelberg** became an Associate Director for Economic Analysis, having served as the Assistant Director for Macroeconomic Analysis for almost five years. Just before coming to CBO in 2011, she was the executive director of the Financial Crisis Inquiry Commission, which released its report on the causes of the financial crisis in January 2011. Previously, she worked on issues related to macroeconomics, housing, and consumer spending at the President's Council of Economic Advisers during two administrations. Before that, she worked on those same issues at the Federal Reserve Board. She received a Ph.D. in economics and an M.B.A. from the University of Chicago, and a B.A. from Columbia University.

Jeffrey Werling joined CBO in January 2016 as Assistant Director for Macroeconomic Analysis. Before coming to the agency, he was the Director of Inforum, a research unit within the Department of Economics at the University of Maryland, College Park. There, he served as the principal investigator for projects concerning economic forecasts, infrastructure investment, health care, fiscal policy, port disruptions, immigration, and exchange rate fluctuations. For more than a decade, he contributed to the *Blue Chip* and other consensus economic forecasts. Previously, he held positions as an international and industry economist with the National Electrical Manufacturers Association, the Manufacturers Alliance for Productivity and Innovation, and Wharton Econometric Forecasting Associates (now Global Insight). He received an M.A. and a Ph.D. in economics from the University of Maryland and a B.S. in mineral economics from the Pennsylvania State University.

Leigh Angres became CBO's Associate Director for Legislative Affairs in July 2015. She joined CBO in 2007 and has served in a variety of capacities since then. Most recently, she was the special assistant to the Director for five years, during which time she was responsible for preparing the Director's presentations, managing CBO's blog, and writing reports about deficit reduction. Before joining the Director's office, she was an analyst in the Budget Analysis Division. In earlier government service, she was a budget analyst in the Department of Justice's

Civil Division, preparing the agency's appropriation requests. She received her M.P.P. from the University of California at Berkeley and her A.B. from Duke University.

In addition to those arrivals and promotions, other important staffing changes have occurred. In the Budget Analysis Division:

- Sheila Dacey became Chief of the Income Security and Education Cost Estimates Unit and
- Adam Wilson became Chief of the Scorekeeping Unit.

Elsewhere in the agency, the following management changes happened in 2016:

- Linda Bilheimer, who led the Health, Retirement, and Long-Term Analysis Division, became a senior adviser in that division;
- Kim Kowalewski, who served as Deputy Assistant Director in the Macroeconomic Analysis Division, became a senior adviser in that division;
- Alexandra Minicozzi became a senior adviser in the Health, Retirement, and Long-Term Analysis Division;
- Felix Reichling became Chief of the Fiscal Studies Unit in the Macroeconomic Analysis Division; and
- Robert Sunshine, who served as CBO's Deputy Director for almost nine years, became a senior adviser in the Director's Office.

This testimony incorporates information from *CBO's Appropriation Request for Fiscal Year 2017*, which was testimony before the Subcommittee on the Legislative Branch of the Senate Committee on Appropriations presented on March 8, 2016.

This testimony is available on CBO's website, at www.cbo.gov/publication/51923.



Keith Hall
Director

