Congressional Budget Office

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Macroeconomic Analysis at CBO

Inforum Annual Conference

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CBO's Role and Products

About CBO

CBO was created by the Congressional Budget and Impoundment Control Act of 1974.

It supports the Congressional budget process by providing the Congress with **objective, nonpartisan, and timely analyses** of legislative proposals and of budgetary and economic issues.

The **Director** is appointed jointly by the Speaker of the House and president pro tempore of the Senate.

CBO has about **250 employees,** who are hired solely on the basis of professional competence, without regard to political affiliation. Most have advanced degrees.

CBO's Products

CBO's products include the following:

- **Baseline budget projections and economic forecasts** covering the 10-year period used in the Congressional budget process;
- **Long-term budget projections** covering a 30-year period and Social Security projections covering a 75-year period;
- **Cost estimates** of legislation, including analyses of federal mandates (see www.cbo.gov/cost-estimates);
- An **analysis of the President's budget**;
- **Scorekeeping** for enacted legislation; and
- **Analytic reports** examining specific federal programs, aspects of the tax code, and budgetary and economic challenges.

Outside Advisers

A **Panel of Economic Advisers** enhances CBO’s understanding of economic research, macroeconomic developments, and economic policy.

A **Panel of Health Advisers** enhances CBO’s understanding of health research and developments in health care delivery and financing.

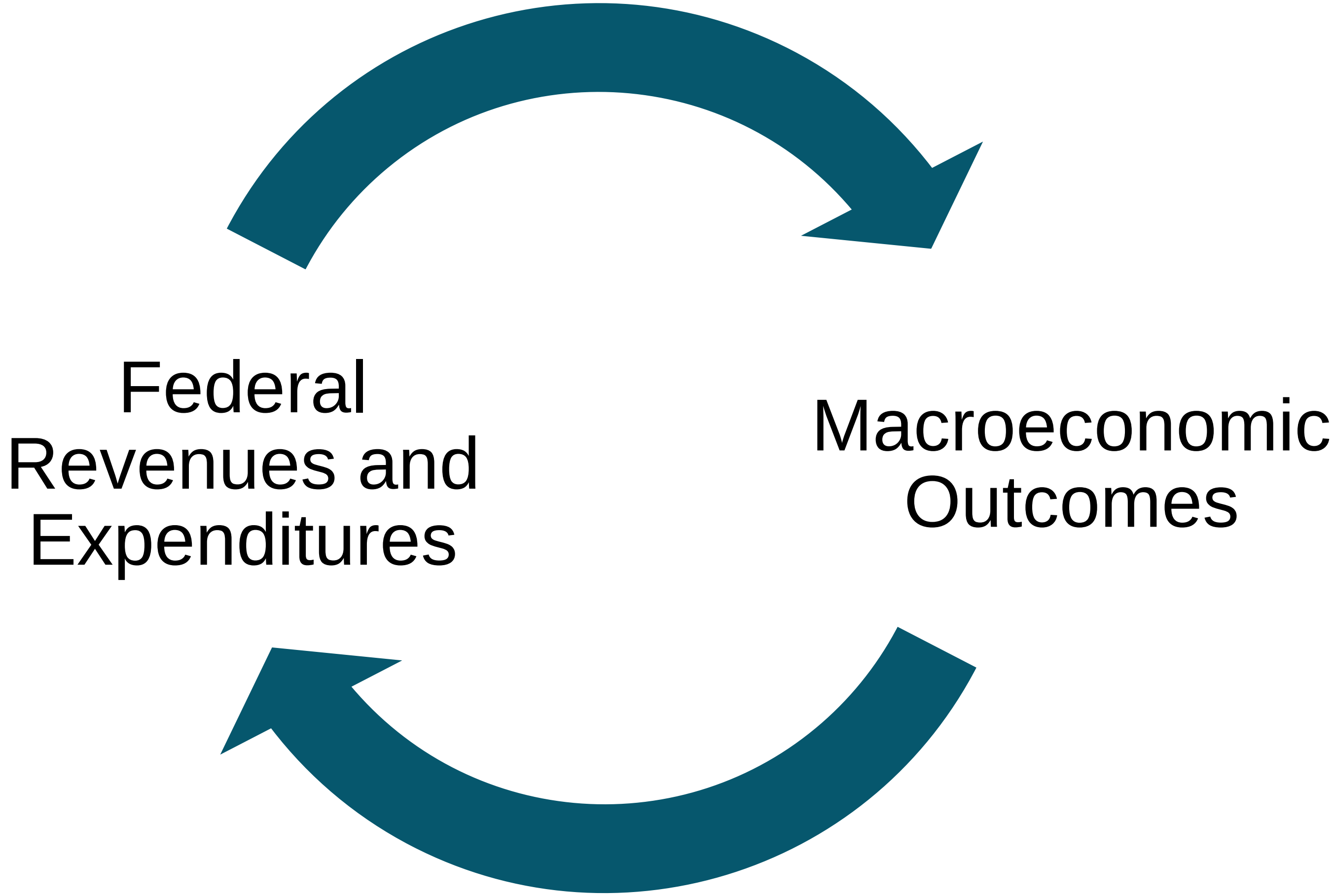
Most of CBO’s reports and working papers are subject to **external review** by subject matter experts.

Transparency

CBO aims to make its analyses transparent in many ways:

- It explains the **basis** of and the **revisions** to its major economic and budget projections.
- It describes the **uncertainty** of its projections and **quantifies** that uncertainty when appropriate.
- It **compares** its own estimates with those of other organizations.
- It **evaluates** its own projections—for example, in these reports:
  - *CBO's Revenue Forecasting Record*,
  - *An Evaluation of CBO's Past Outlay Projections*,
  - *CBO's Economic Forecasting Record: 2019 Update*, and
  - *An Evaluation of CBO's Past Deficit and Debt Projections*.

CBO’s Economic and Budgetary Projections and Analysis



CBO's 10-Year Budget and Economic Projections

Background About the Baseline Budget Projections

The projections are **required** by the Congressional Budget and Impoundment Control Act of 1974.

The **principles and rules behind the projections** come from several sources:

- Law (in particular, the Balanced Budget and Emergency Deficit Control Act of 1985),
- Budget resolutions,
- House and Senate rules, and
- The 1967 *Report of the President's Commission on Budget Concepts*.

The projections incorporate the assumption that current laws about federal spending and revenues generally remain in place.

Schedule for the Baseline Budget Projections

The baseline budget projections follow a regular schedule:

- January—first baseline budget and economic projections
- March—update to baseline budget projections
- August—update to baseline budget and economic projections

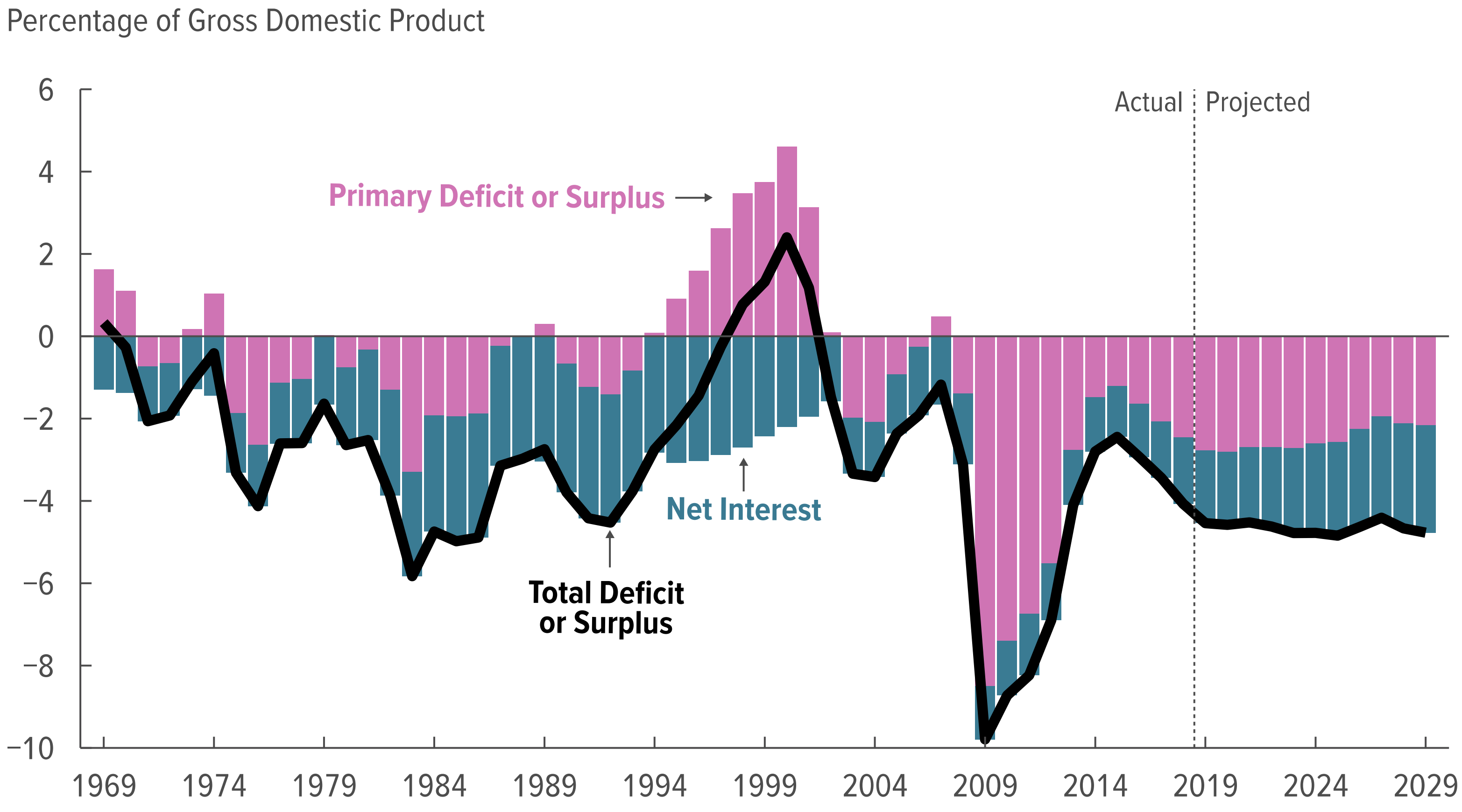
Special circumstances sometimes lead to schedule changes (for example, in April 2018 and May 2019).

CBO's Baseline Budget Projections, by Category

	Actual, 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total 2020–2024	Total 2020–2029
							In Billions of Dollars							
Revenues														
Individual income taxes	1,684	1,698	1,800	1,895	1,981	2,076	2,171	2,272	2,501	2,731	2,838	2,962	9,923	23,227
Payroll taxes	1,171	1,247	1,281	1,332	1,385	1,442	1,505	1,567	1,629	1,692	1,759	1,828	6,945	15,420
Corporate income taxes	205	228	245	268	298	335	371	400	409	398	407	415	1,517	3,547
Other	271	278	293	298	307	309	345	345	361	385	386	415	1,552	3,443
Total	**3,330**	**3,451**	**3,620**	**3,792**	**3,971**	**4,163**	**4,392**	**4,585**	**4,900**	**5,206**	**5,390**	**5,619**	**19,937**	**45,637**
On-budget	2,475	2,532	2,677	2,811	2,951	3,104	3,292	3,443	3,714	3,974	4,111	4,291	14,835	34,368
Off-budget	855	919	943	981	1,020	1,059	1,100	1,142	1,186	1,231	1,279	1,328	5,103	11,269
Outlays														
Mandatory	2,523	2,707	2,838	2,962	3,192	3,326	3,446	3,682	3,900	4,101	4,405	4,454	15,764	36,306
Discretionary	1,262	1,332	1,400	1,446	1,481	1,513	1,543	1,584	1,622	1,661	1,706	1,736	7,382	15,690
Net interest	325	372	390	418	456	506	554	602	653	704	758	807	2,325	5,848
Total	**4,109**	**4,411**	**4,628**	**4,826**	**5,130**	**5,344**	**5,543**	**5,869**	**6,174**	**6,466**	**6,868**	**6,997**	**25,470**	**57,845**
On-budget	3,261	3,505	3,661	3,794	4,027	4,166	4,287	4,533	4,763	4,969	5,277	5,309	19,935	44,785
Off-budget	849	906	967	1,032	1,102	1,179	1,256	1,336	1,412	1,497	1,591	1,689	5,536	13,059
Deficit (-) or Surplus	**-779**	**-960**	**-1,008**	**-1,034**	**-1,159**	**-1,181**	**-1,151**	**-1,284**	**-1,274**	**-1,260**	**-1,479**	**-1,378**	**-5,533**	**-12,208**
On-budget	-785	-972	-984	-983	-1,076	-1,062	-995	-1,090	-1,048	-995	-1,167	-1,017	-5,100	-10,417
Off-budget	6	12	-24	-51	-83	-120	-156	-194	-226	-266	-312	-361	-433	-1,791
Debt Held by the Public	15,750	16,685	17,755	18,841	20,042	21,264	22,457	23,784	25,102	26,407	27,917	29,322	n.a.	n.a.
Memorandum:														
Gross Domestic Product	20,236	21,157	22,013	22,870	23,727	24,611	25,529	26,514	27,518	28,582	29,699	30,847	118,750	261,911

Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

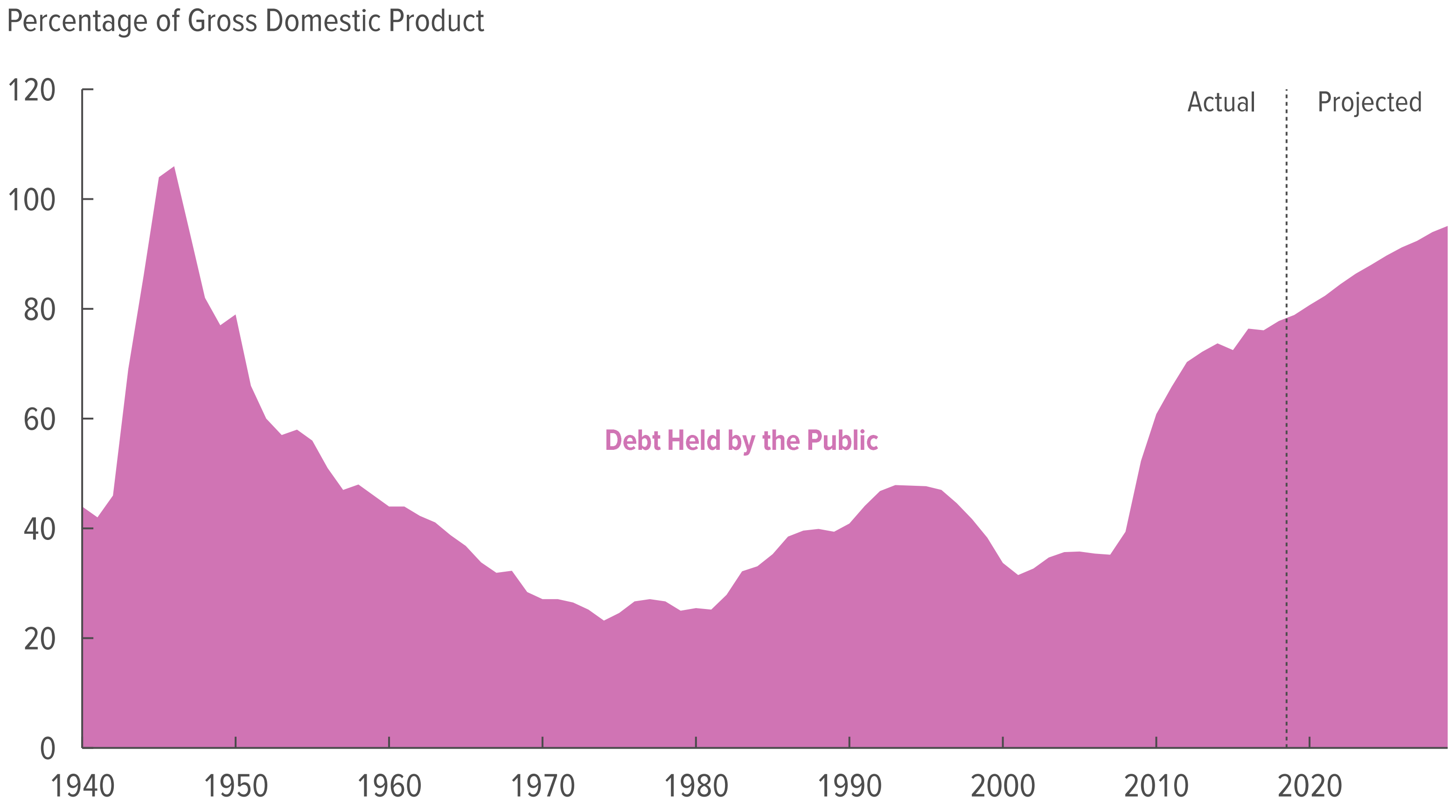
Total Deficit, Primary Deficit, and Net Interest



In CBO's projections, primary deficits shrink as a percentage of gross domestic product, but total deficits grow because of rising interest costs.

Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

Federal Debt Held by the Public



As a percentage of gross domestic product, federal debt held by the public would increase from 79 percent in 2019 to 95 percent in 2029. At that point, such debt would be the largest since 1946 and more than twice the 50-year average.

Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

Behind the Economic Forecast

The 10-year economic forecast is usually published in January and August.

These **major factors** shape CBO’s economic projections:

- Fiscal policies under current law,
- Background analysis by CBO’s experts,
- A macroeconometric model, and
- Internal and external review (including input from CBO’s Panel of Economic Advisers).

Key economic projections that affect CBO’s budget projections include real gross domestic product (GDP) and income, inflation, and interest rates.

The Process for CBO's Economic Forecast

Step 1: Background Analysis

- Develop preliminary forecast for exogenous variables (for example, oil prices)
- Review recent data and other information

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Step 2: Preliminary Forecast

- Use macroeconometric model to develop preliminary forecast
- Incorporate preliminary federal tax and spending projections

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Step 3: Internal and External Review

- Obtain input from CBO's senior staff and other divisions within the agency
- Obtain feedback from CBO's Panel of Economic Advisers and staff of Congressional budget committees

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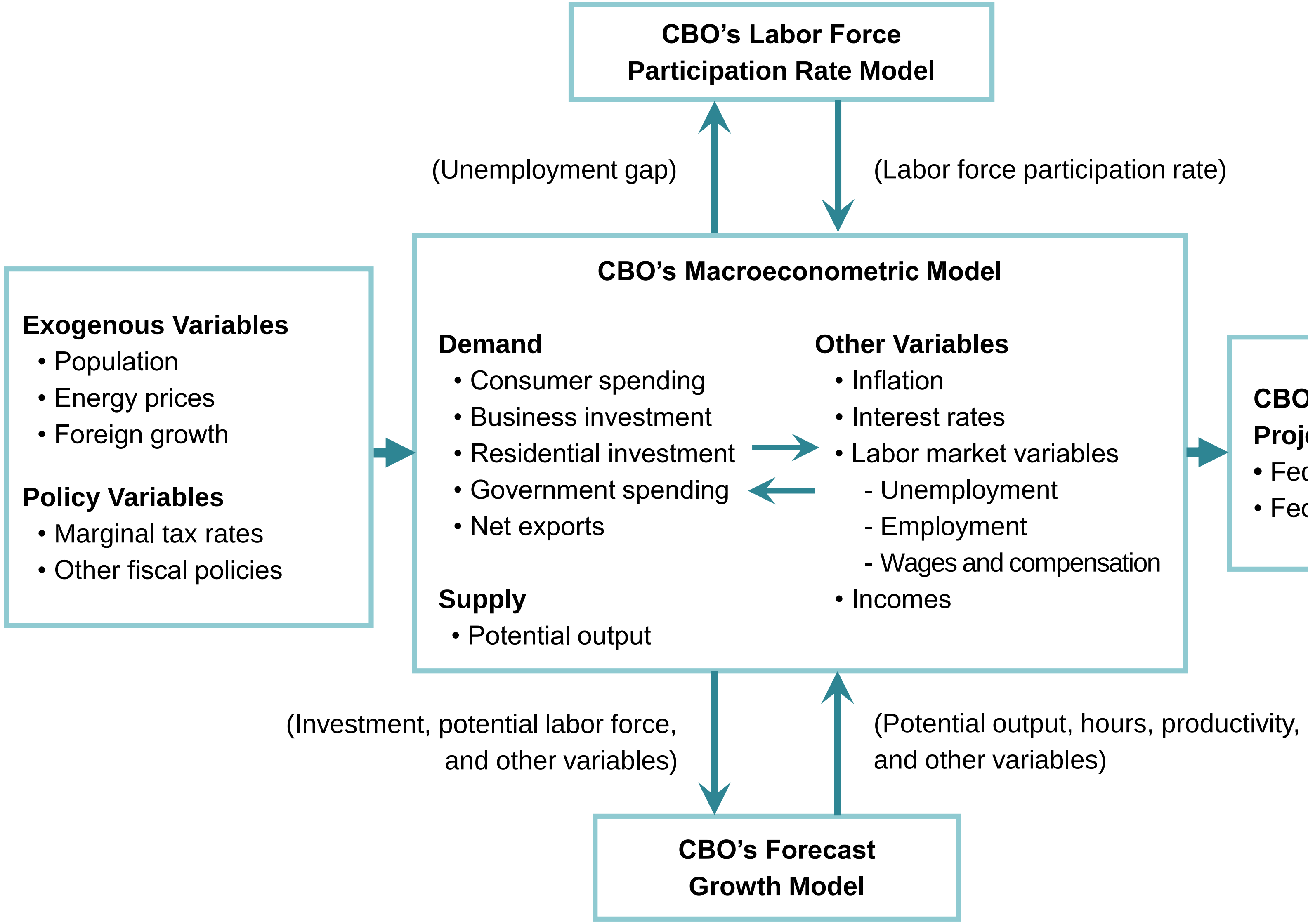
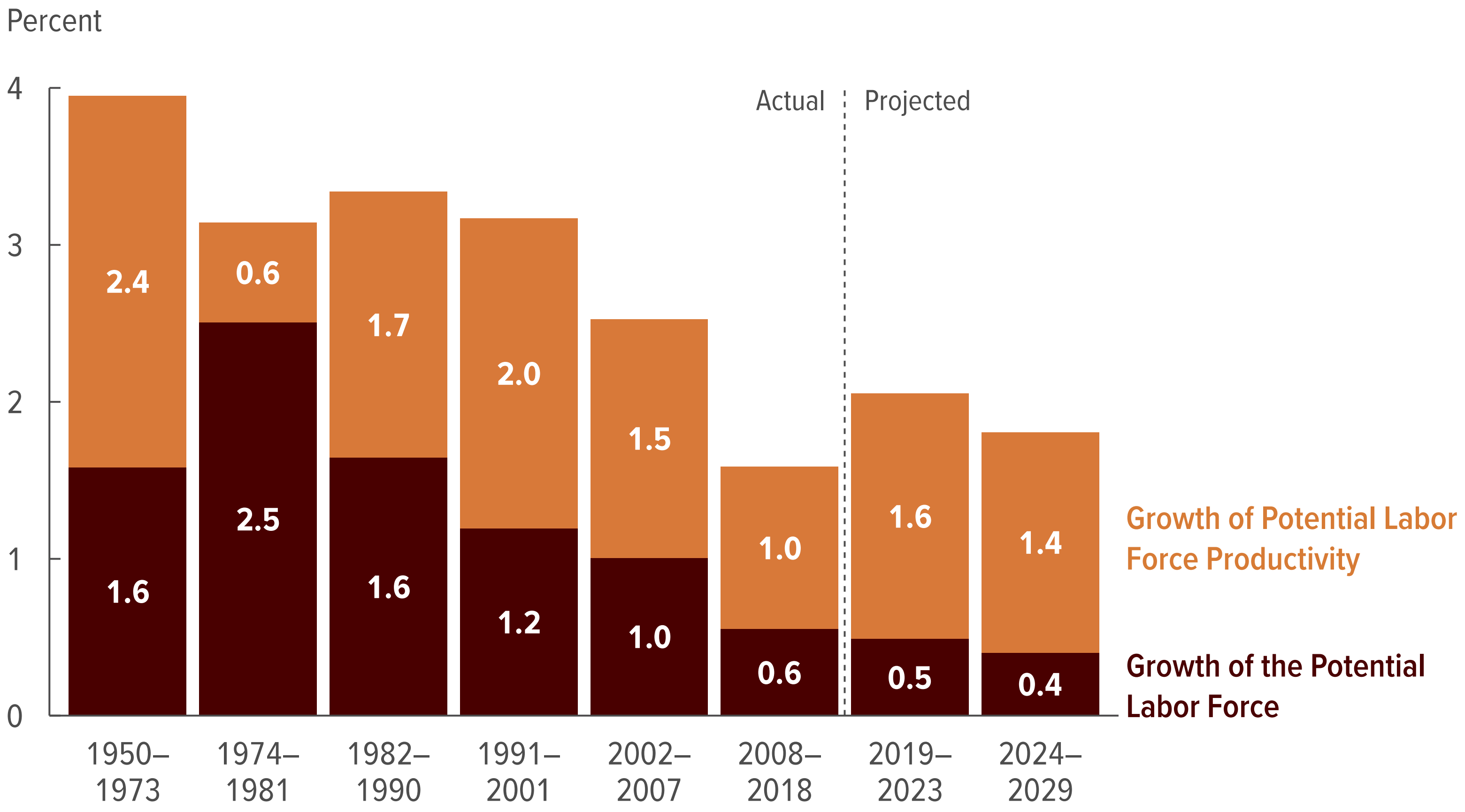
Step 4: Final Forecast

- Incorporate feedback and latest data to produce final forecast
- Transmit to CBO's budget and tax divisions to develop budget projections

CBO's Economic Forecasting Models



Factors Underlying the Growth of Potential GDP



In the coming decade, growth in real potential GDP—the sum of the growth of the potential labor force and the growth of potential labor force productivity—is projected to be slower than it has been in the past. That slowdown is driven mostly by slower growth of the labor force.

Growth of potential labor force productivity is projected to grow faster than it has since the 2007–2009 recession.

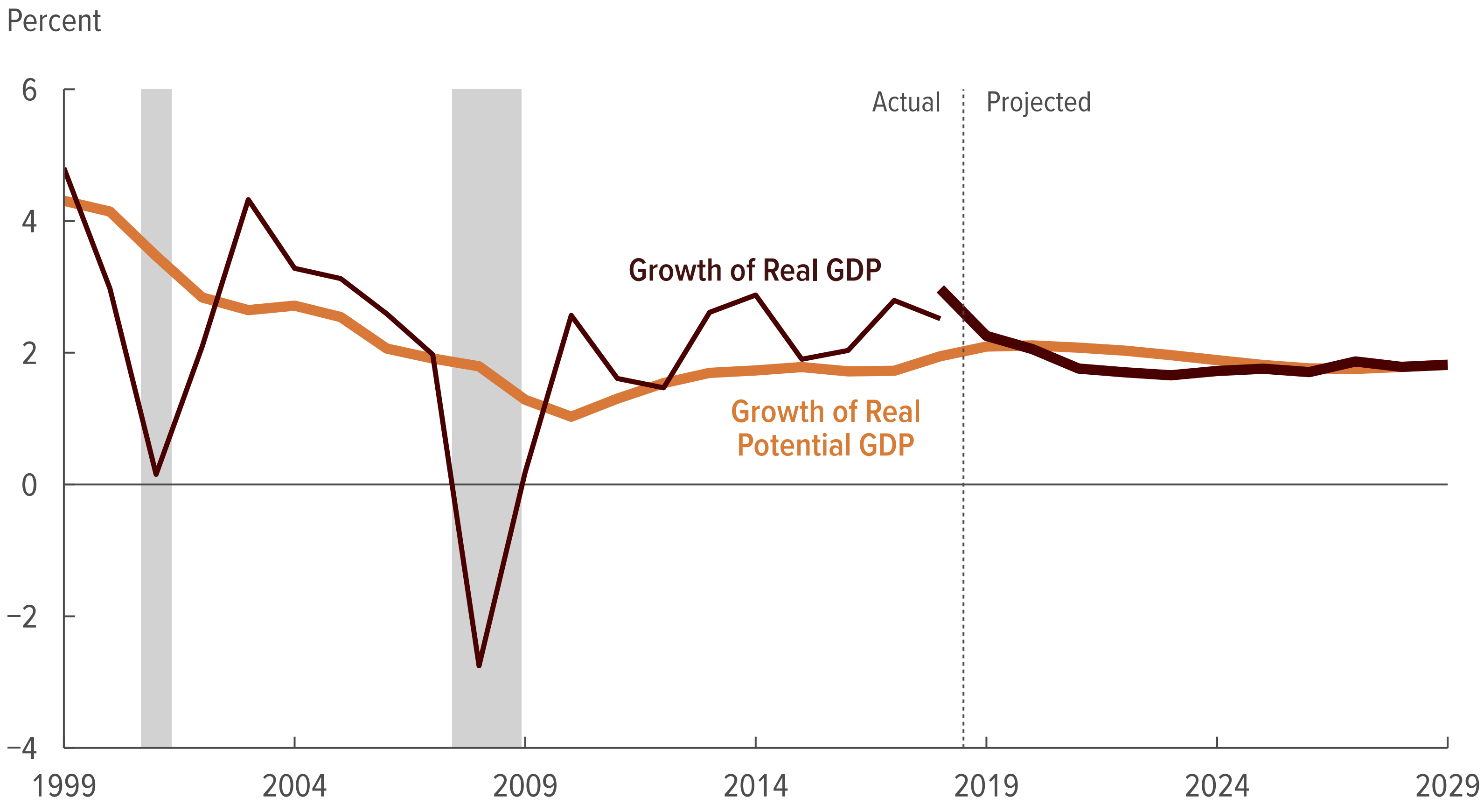
Key Inputs in CBO’s Projections of Real Potential GDP

Percent

	Average Annual Growth							Projected Average Annual Growth		
	1950–1973	1974–1981	1982–1990	1991–2001	2002–2007	2008–2018	Total, 1950–2018	2019–2023	2024–2029	Total, 2019–2029
Overall Economy										
Real Potential GDP	4.0	3.2	3.4	3.2	2.5	1.6	3.2	2.1	1.8	1.9
Potential Labor Force	1.6	2.5	1.6	1.2	1.0	0.6	1.4	0.5	0.4	0.4
Potential Labor Force Productivity	2.4	0.6	1.7	2.0	1.5	1.0	1.7	1.6	1.4	1.5
Nonfarm Business Sector										
Real Potential Output	4.1	3.5	3.6	3.6	2.8	1.8	3.4	2.4	2.1	2.2
Potential Hours Worked	1.4	2.3	1.8	1.2	0.4	0.5	1.3	0.6	0.3	0.4
Capital Services	3.7	3.8	3.5	3.8	2.9	2.3	3.4	2.7	2.2	2.4
Potential Total Factor Productivity	1.9	1.0	1.3	1.5	1.6	0.7	1.4	1.0	1.1	1.1
Contributions to the Growth of Real Potential Output (Percentage points)										
Potential hours worked	1.0	1.6	1.2	0.8	0.2	0.3	0.9	0.4	0.2	0.3
Capital input	1.2	0.9	1.1	1.3	0.9	0.8	1.1	1.0	0.7	0.8
Potential total factor productivity	1.9	1.0	1.3	1.5	1.6	0.7	1.4	1.0	1.1	1.1
Total Contributions	4.0	3.5	3.6	3.6	2.8	1.8	3.4	2.4	2.1	2.2
Potential Labor Productivity	2.7	1.2	1.8	2.3	2.4	1.3	2.1	1.8	1.8	1.8

Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

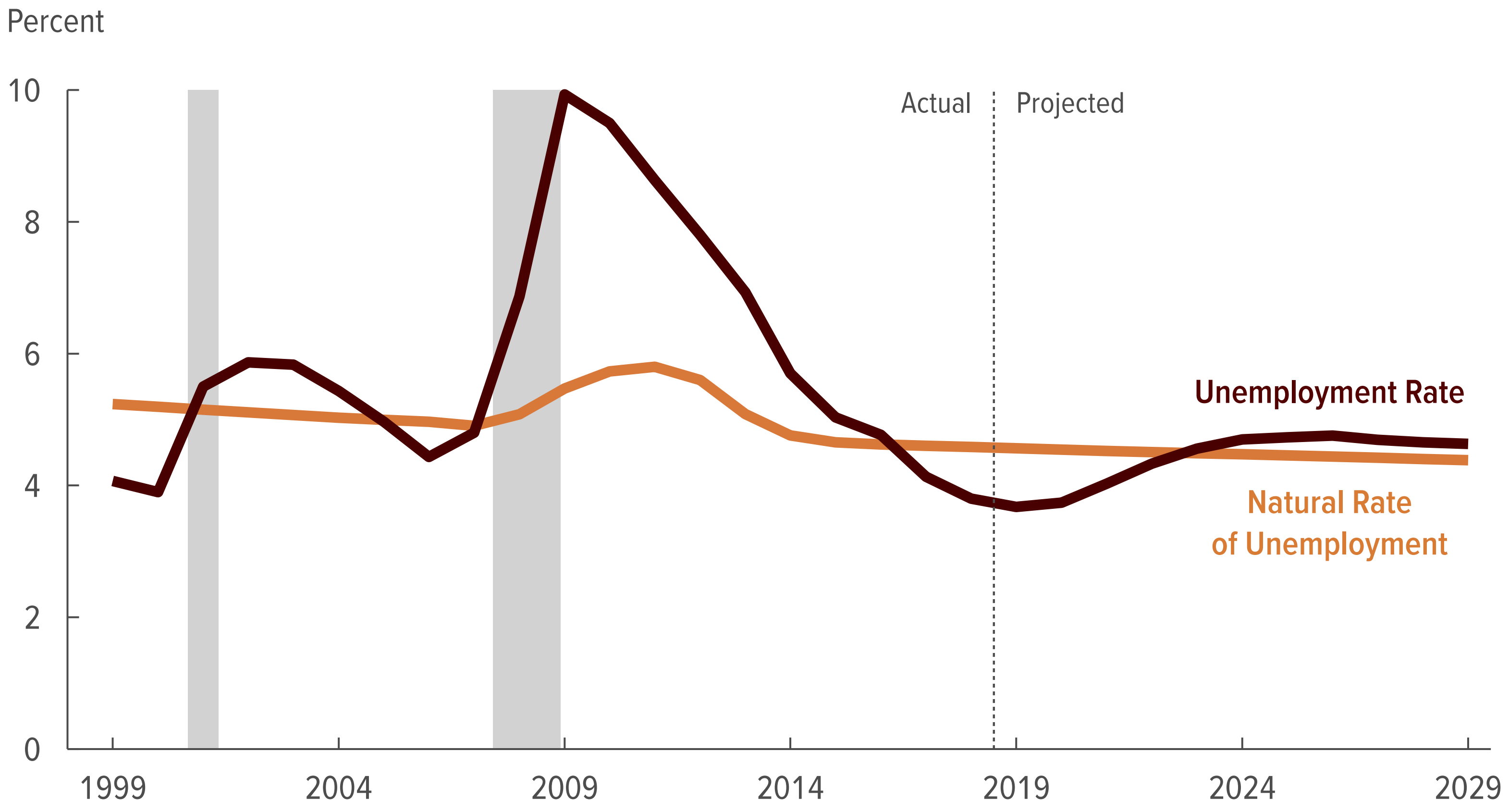
The Growth of GDP and Potential GDP



In CBO's projections, the growth of real GDP slows over the next few years, largely because of slower growth in consumer spending. The growth of real potential GDP is faster than its average rate since the end of 2007, mostly because of accelerated productivity growth.

Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

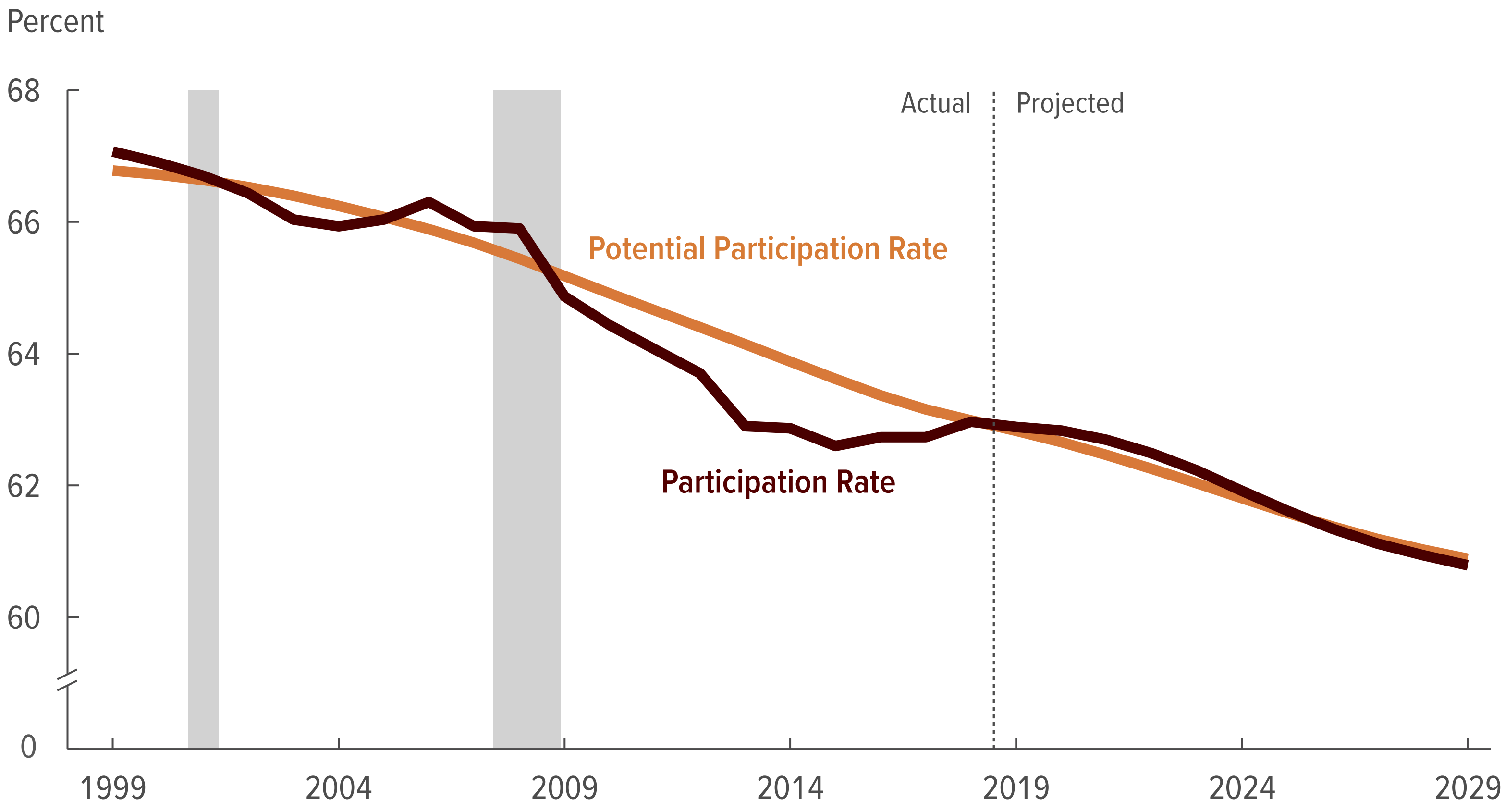
Unemployment



The unemployment rate is expected to rise steadily, reaching and surpassing its natural rate of 4.5 percent in 2023 before settling into its long-term trend in later years.

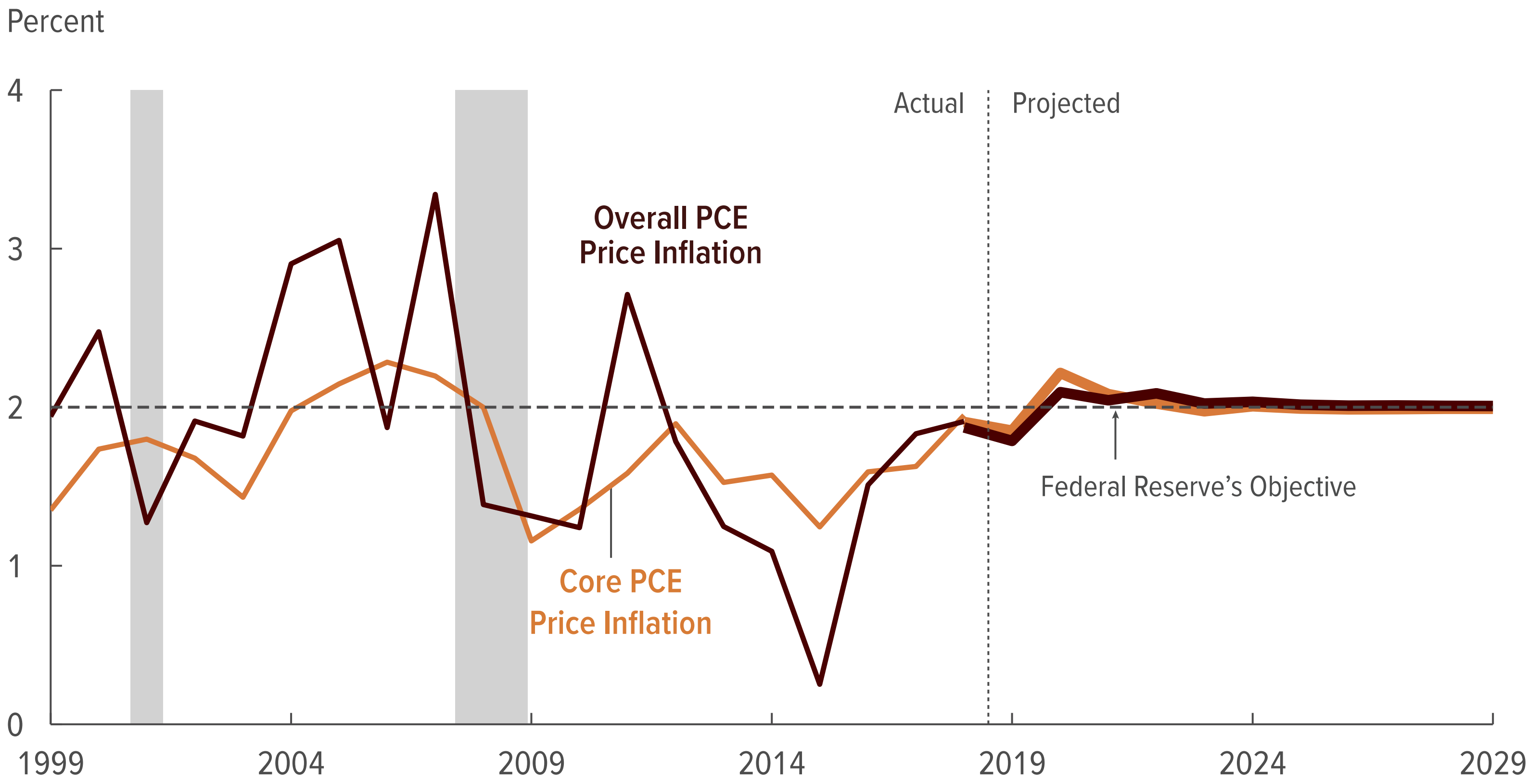
Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

Labor Force Participation



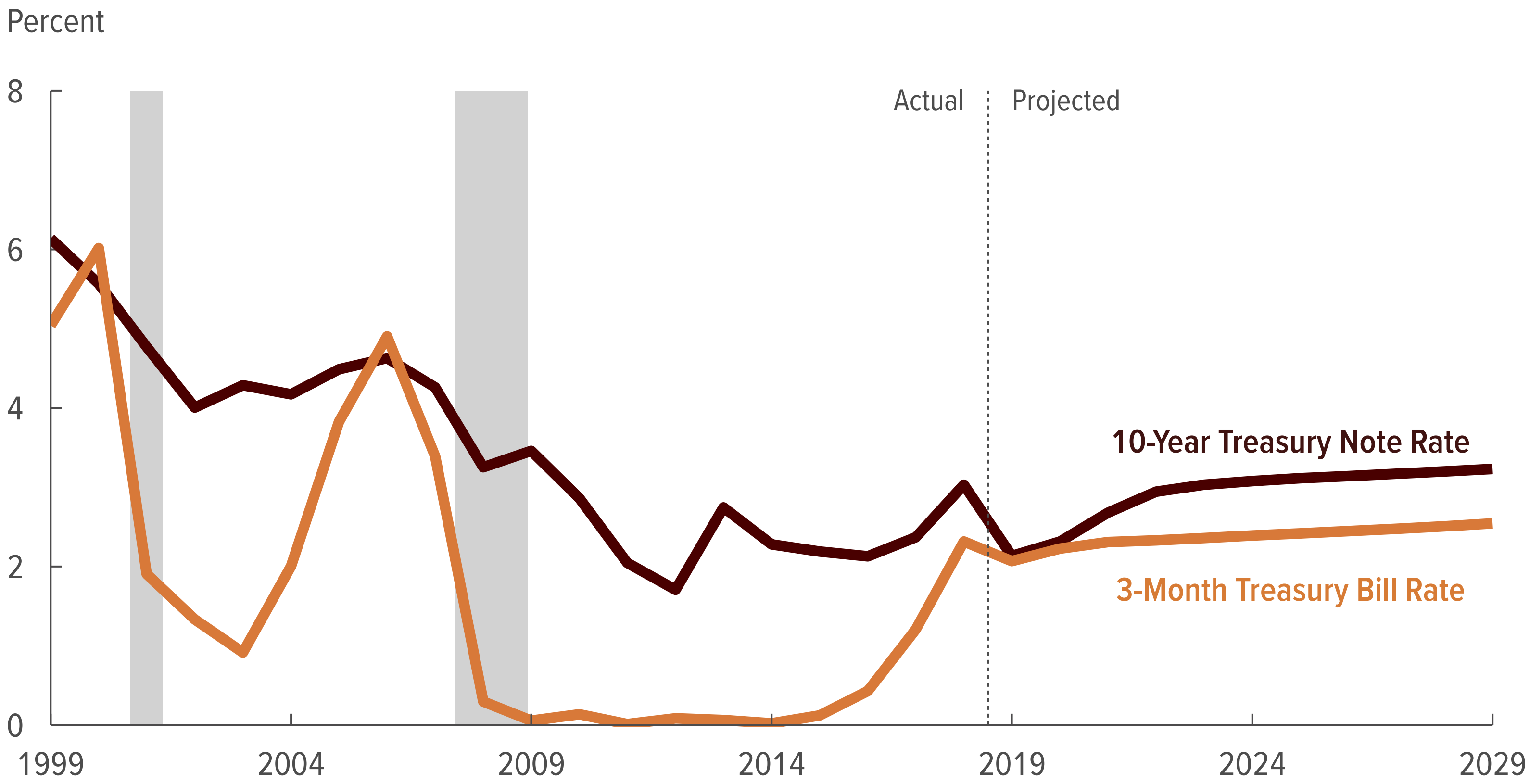
The labor force participation rate is expected to respond more slowly to the projected slowdown in output growth, remaining above its potential for the next five years.

Inflation



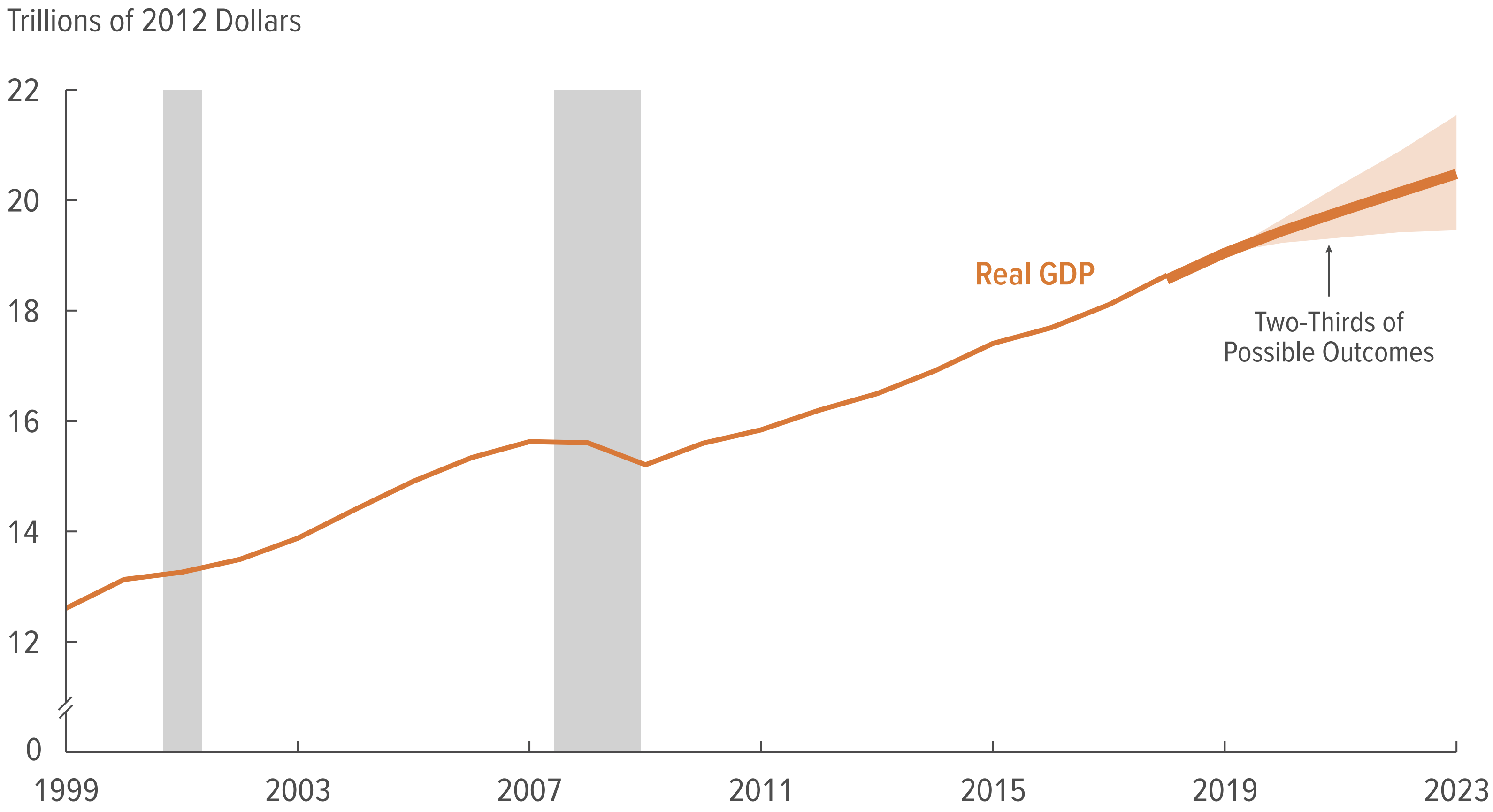
In CBO's projections, a number of factors, including strong labor market conditions, cause growth in the core personal consumption expenditures (PCE) price index to rise from 1.9 percent in 2019 to 2.2 percent in 2020.

Interest Rates



CBO expects both short-term and long-term interest rates to remain near their current levels through most of 2020 and then to rise gradually as inflation stabilizes at 2 percent—the Federal Reserve's long-run objective.

Forecast Uncertainty



CBO estimates that—if the errors in the agency's current economic forecast are similar to those in its previous forecasts—there is approximately a two-thirds chance that the average annual rate of real GDP growth will be between 0.7 percent and 3.3 percent over the next five years.

Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

Macroeconomic and Fiscal Analysis

Macroeconomic and Fiscal Analysis

How do changes in fiscal policy affect the economy?

- **Short-term and long-term effects:** Changes in fiscal policies affect potential output primarily by altering national saving, federal investment, and people's incentives to work and save, as well as businesses' incentive to invest (capital, labor, and productivity). Those effects can also matter in the short run, and they are usually definitive in the long run.

- **Other short-term effects:** Changes in fiscal policies affect the overall economy primarily by influencing the demand for goods and services by consumers, businesses, and governments, which leads to changes in output relative to potential output.

Macroeconomic and Fiscal Analysis (Continued)

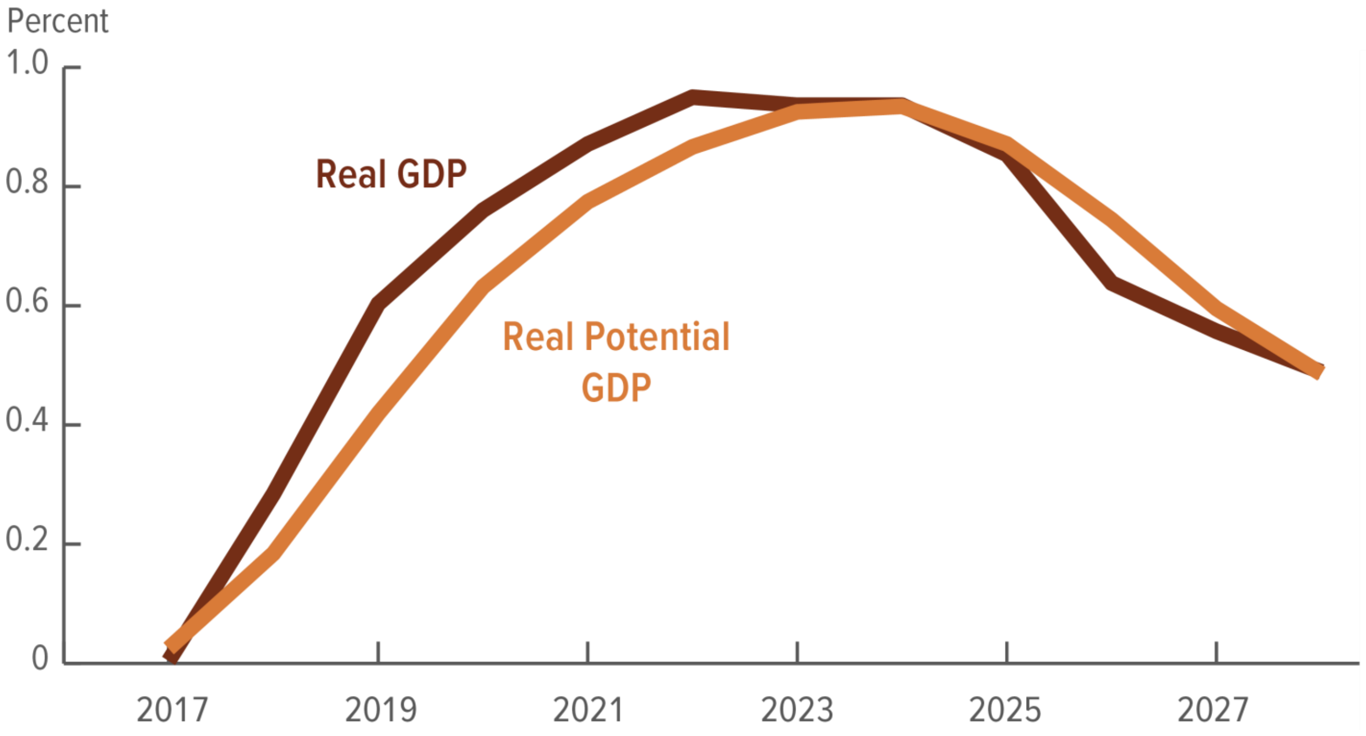
In what important ways do changes in economic conditions affect revenues and spending?

- Changes in income affect revenues.
- Changes in prices, interest rates, and wages affect spending.

Fiscal Analysis Models

- **Aggregate demand model:** Incorporates how changes in purchases by federal agencies and households directly contribute to aggregate demand.
- **Solow-type growth model:** Includes savings-investment and labor supply dynamics to model labor supply, capital services, and productivity.
- **Life-cycle general equilibrium growth model:** In additional to the economic framework in the Solow-type growth model, includes more economic interactions and forward-looking households (and thus requires specification of future fiscal policies that put federal debt on a sustainable path).
- **Dynamic stochastic general equilibrium model:** Has economic interactions and forward-looking households similar to the life-cycle general equilibrium growth model but is simpler and helps analyze short-run dynamics.
- **Budgetary feedback model:** Estimates the effects of economic changes on federal spending and revenues using a much simpler framework than the models used to project the federal budget in the agency’s baseline.

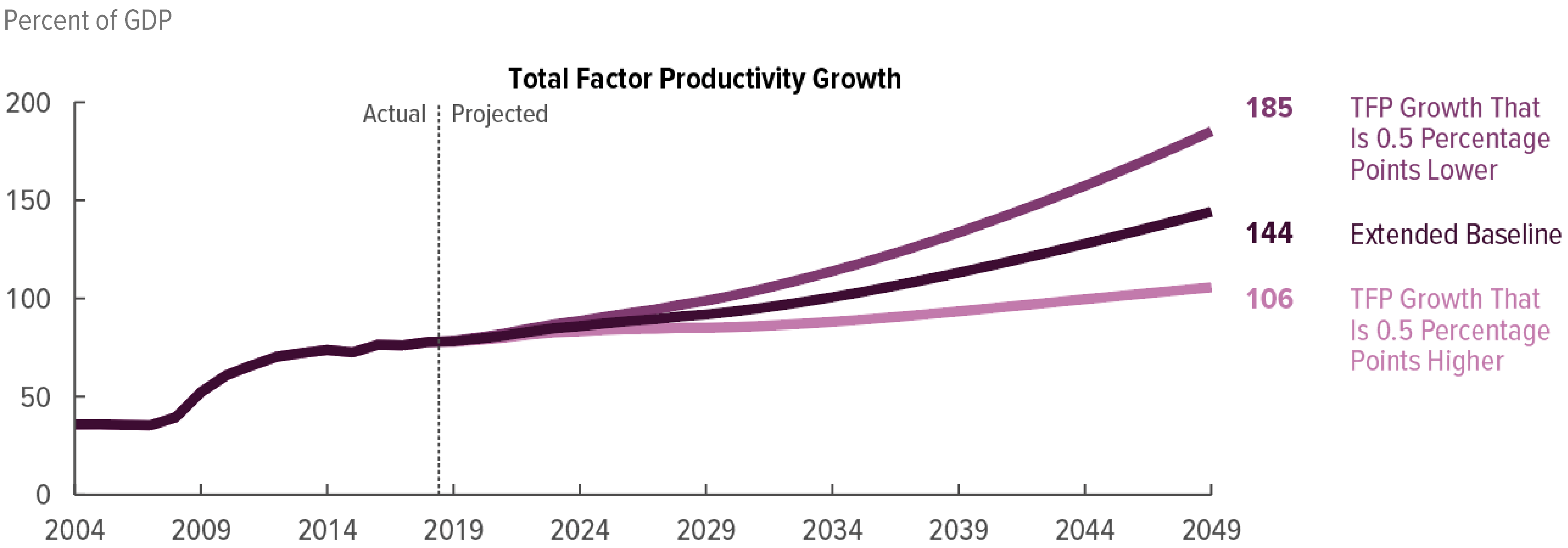
Effects of the 2017 Tax Act on the Level of Actual and Potential Output



The act is projected to boost the demand for goods and services, accelerating the growth of actual output in relation to the growth of potential output over the first half of the 2018–2028 period.

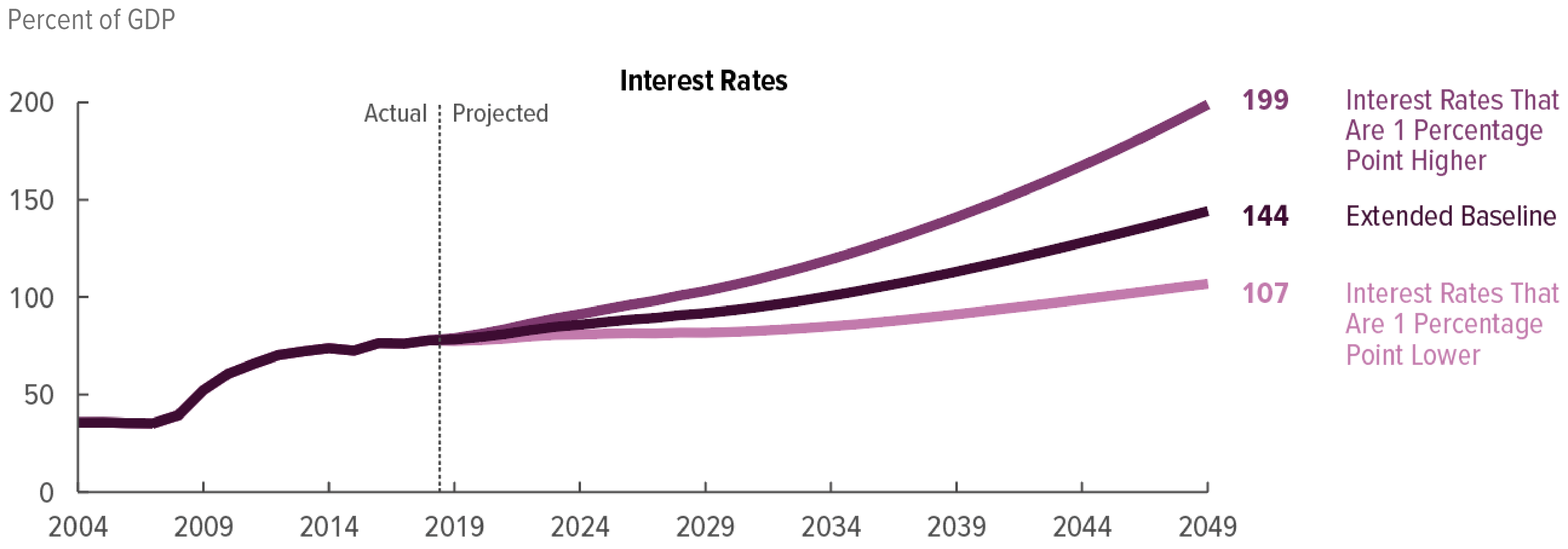
Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2018 to 2028* (April 2018), www.cbo.gov/publication/55331.

Federal Debt If Total Factor Productivity Growth Differed From the Values Underlying CBO's Projections



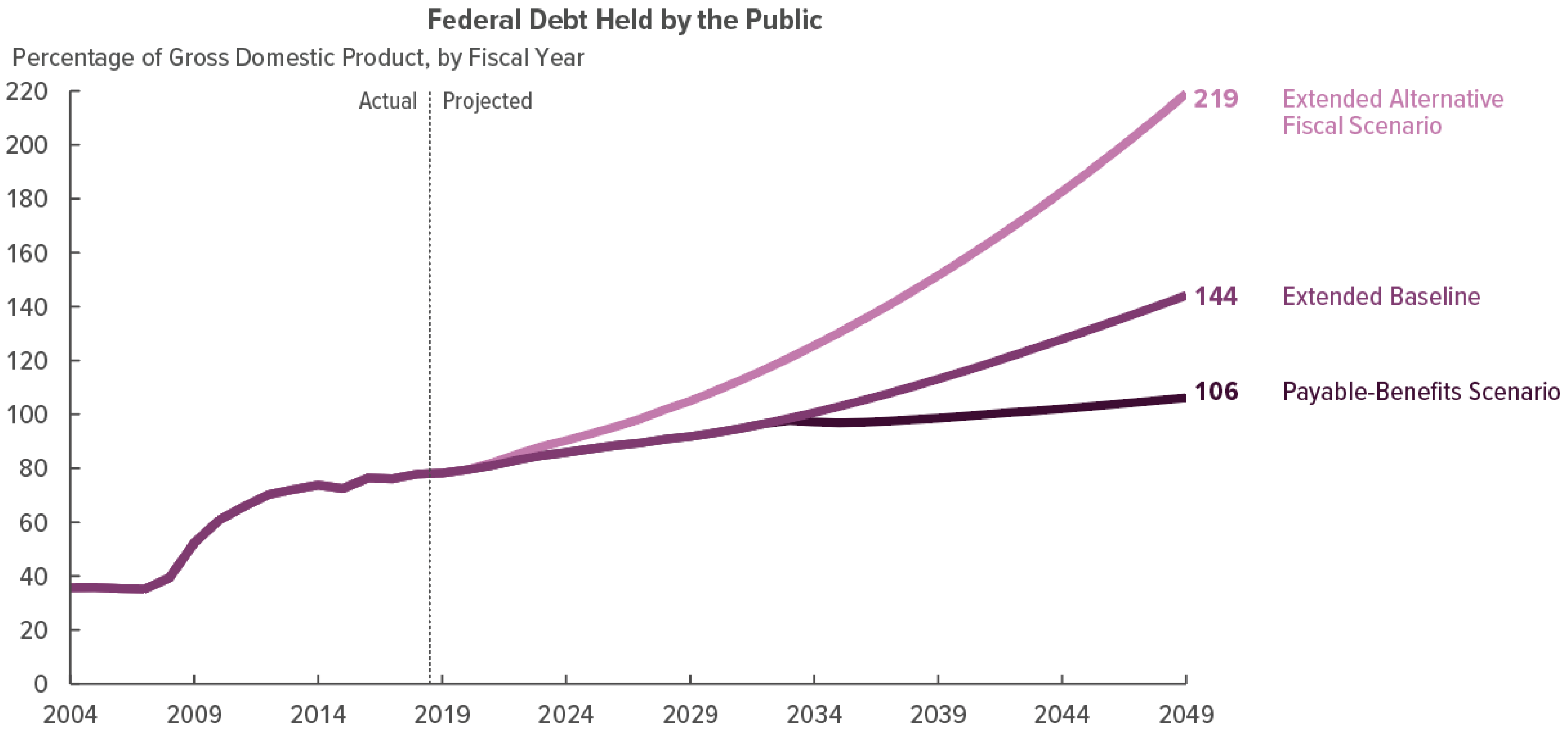
Congressional Budget Office, *The 2019 Long-Term Budget Outlook* (June 2019), www.cbo.gov/publication/55331.

Federal Debt If Interest Rates Differed From the Values Underlying CBO's Projections



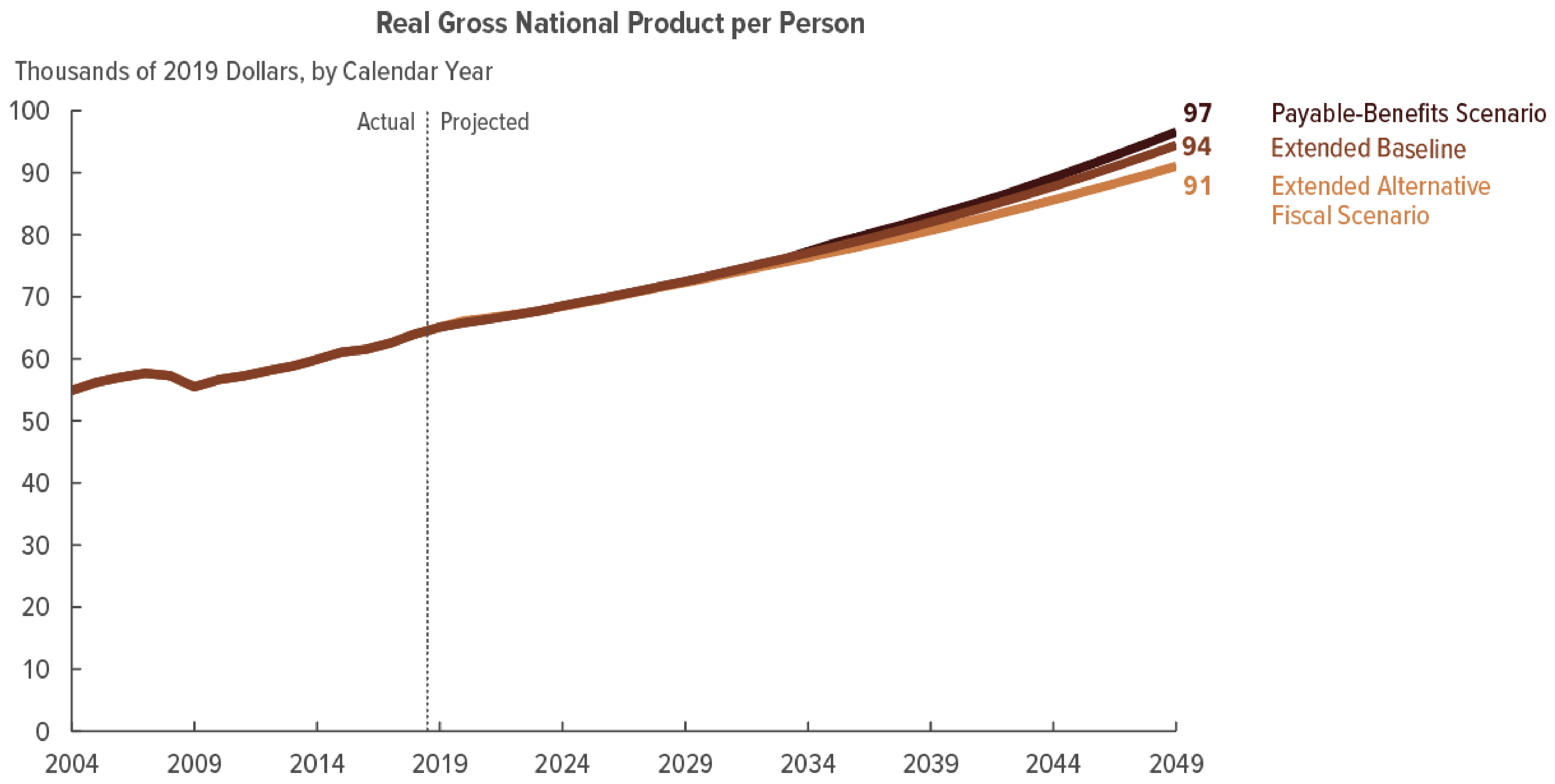
Congressional Budget Office, *The 2019 Long-Term Budget Outlook* (June 2019), www.cbo.gov/publication/55331.

Debt Under Three Fiscal Scenarios



Congressional Budget Office, *The 2019 Long-Term Budget Outlook* (June 2019), www.cbo.gov/publication/55331.

Output per Person Under Three Scenarios



How Changes in Economic Conditions Might Affect the Budget

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

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Workbook for How Changes in Economic Conditions Might Affect the Federal Budget, January 2019

January 28, 2019 | Interactive

This workbook allows users to enter an alternative scenario for productivity growth, labor force growth, inflation, or interest rates and see estimates of revenues, several types of spending, and deficits under those scenarios.

View Document
109.08 KB

Summary

This workbook allows users to define and analyze alternative economic scenarios by entering values for differences between four economic variables—productivity growth (in this workbook, the growth of total factor productivity, which is real output per unit of combined labor and capital services), labor force growth, interest rates, and inflation—and the values for those variables in CBO's January 2019 economic forecast.

The workbook then applies the rules of thumb specified in Appendix B of *The Budget and Economic Outlook: 2019 to 2029* to those values and provides estimates of how revenues, outlays, and deficits under the user-specified scenarios might differ from those in the agency's adjusted January 2019 baseline budget projections. The workbook also shows how economic indicators—including gross domestic product (GDP), real (inflation-adjusted) GDP, and interest rates—might respond under the user-specified scenarios.

The formulas underlying this workbook were created specifically for these interactive tables and are meant only to provide results that approximate those CBO would produce using its broad set of economic and budget models.

Selected Publications

Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2019 to 2029* (August 2019), www.cbo.gov/publication/55551.

Congressional Budget Office, *The 2019 Long-Term Budget Outlook* (June 2019), www.cbo.gov/publication/55331.

Congressional Budget Office, *Updated Budget Projections: 2019 to 2029* (May 2019), www.cbo.gov/publication/55151.

Edward Gamber and John Seliski, *The Effect of Government Debt on Interest Rates*, Working Paper 2019-01 (Congressional Budget Office, March 2019), www.cbo.gov/publication/55018.

Congressional Budget Office, *Workbook for How Changes in Economic Conditions Might Affect the Federal Budget* (January 2019), www.cbo.gov/publication/54934.

Congressional Budget Office, *Transparency at CBO: Future Plans and a Review of 2018* (December 2018), www.cbo.gov/publication/54885.

Selected Publications (Continued)

Robert W. Arnold, *How CBO Produces Its 10-Year Economic Forecast*, Working Paper 2018-02 (Congressional Budget Office, February 2018), www.cbo.gov/publication/53537.

Congressional Budget Office, *How CBO Prepares Baseline Budget Projections* (February 2018), www.cbo.gov/publication/53532.

Congressional Budget Office, “Outlook for the Budget and the Economy,” www.cbo.gov/topics/budget/outlook-budget-and-economy.

Congressional Budget Office, “Panel of Economic Advisers,” www.cbo.gov/about/processes/panel-economic-advisers.

Congressional Budget Office, “Panel of Health Advisers,” www.cbo.gov/about/processes/panel-health-advisers.

Congressional Budget Office, “Transparency,” www.cbo.gov/about/transparency.