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

CBO's Economic Forecast: Understanding Productivity Growth

July 15, 2025

NABE Foundation

22nd Annual Economic Measurement Seminar

Aaron Betz

Macroeconomic Analysis Division

For information about the seminar, see www.nabe.com/ems2025.

Purpose of CBO's Economic Forecast

The Congressional Budget Office's economic forecast is used primarily as an input to the agency's 10-year federal budget projections and analyses of legislative proposals.

It is a current-law forecast: It reflects the assumption that current laws generally will not change, but that scheduled policy changes built into current laws will occur.

For example, under current law, a tax provision in recently enacted legislation allows for the deduction of up to $40,000 of state and local taxes in 2025. After 2029, that amount falls to $10,000. CBO's current-law forecast incorporates the economic effects of that scheduled change in policy.

For more information about CBO's forecast process, see Robert Arnold, *How CBO Produces Its 10-Year Economic Forecast*, Working Paper 2018-02 (Congressional Budget Office, February 2018), www.cbo.gov/publication/53537.

CBO's Approach to Forecasting

CBO's approach involves projections of:

- **Potential (maximum sustainable) output** in a Solow-type growth model and
- **Actual output** in a standard macroeconometric model.

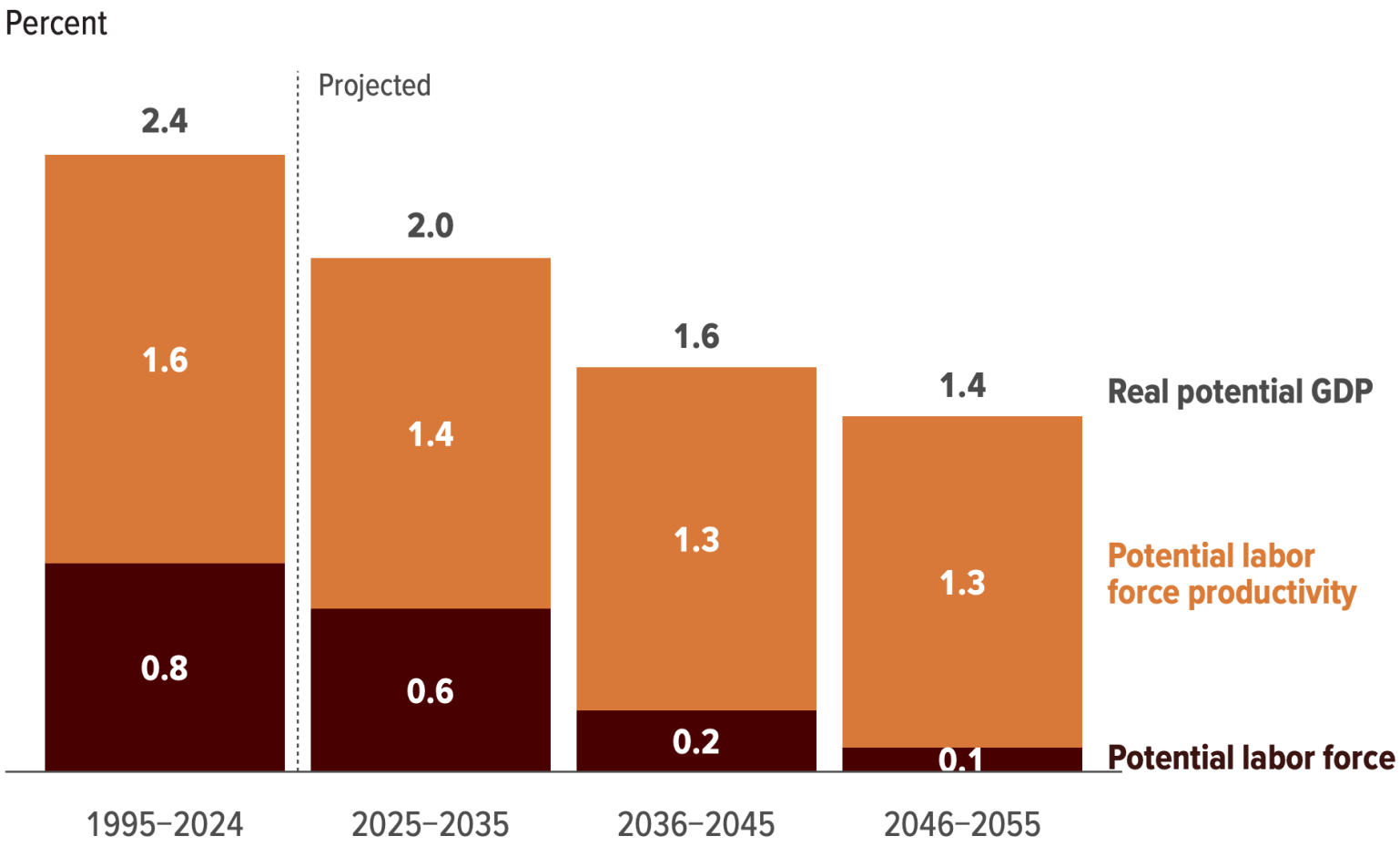
The estimate of potential output is mainly based on estimates of:

- The **potential labor force**,
- The **flow of services from the capital stock**, and
- **Potential total factor productivity (TFP)** in the nonfarm business sector.

The ratio of real potential gross domestic product (GDP) to the potential labor force is known as potential labor force productivity.

For information about how CBO projects potential output, see Robert Shackleton, *Estimating and Projecting Potential Output Using CBO's Forecasting Growth Model*, Working Paper 2018-03 (Congressional Budget Office, February 2018), www.cbo.gov/publication/53558.

Average Annual Growth of Real Potential GDP



GDP = gross domestic product. Real values are nominal values that have been adjusted to remove the effects of changes in prices.

Congressional Budget Office, *The Long-Term Budget Outlook: 2025 to 2055* (March 2025), www.cbo.gov/publication/61187.

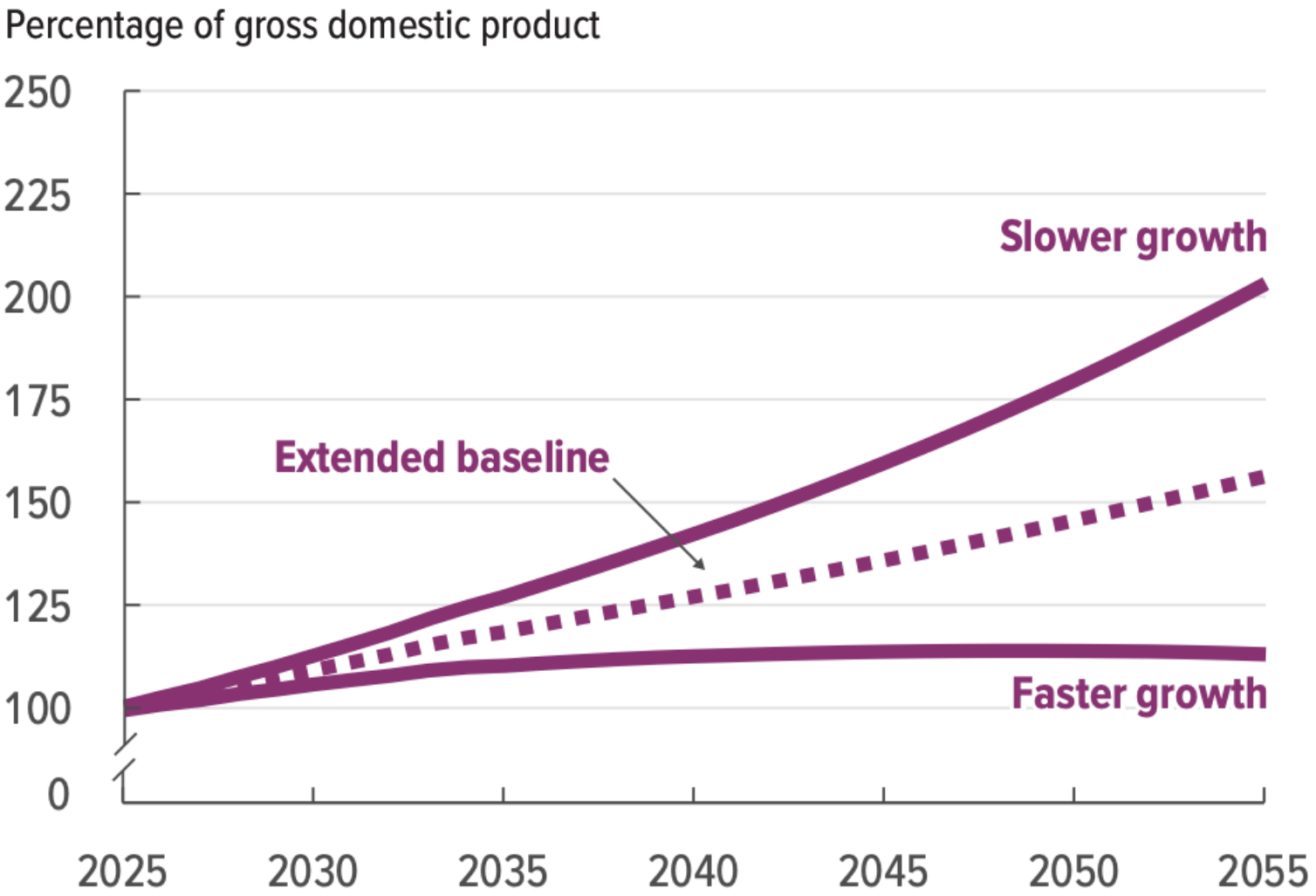
Key Estimates in CBO's Projection of Potential GDP, January 2025

Percent

	Average annual growth							Projected average annual growth		
	1950–1973	1974–1981	1982–1990	1991–2001	2002–2007	2008–2024	Overall, 1950–2024	2025–2029	2030–2035	Overall, 2025–2035
Overall economy										
Real potential GDP	4.0	3.1	3.2	3.3	2.3	1.9	3.1	2.2	1.9	2.0
Potential labor force	1.6	2.4	1.6	1.2	1.0	0.6	1.3	0.9	0.4	0.6
Potential labor force productivity	2.3	0.7	1.6	2.0	1.3	1.4	1.7	1.3	1.4	1.4
Nonfarm business sector										
Real potential output	4.1	3.4	3.5	3.8	2.4	2.3	3.3	2.5	2.2	2.3
Potential hours worked	1.4	2.1	1.6	1.4	0.1	0.7	1.2	0.9	0.5	0.6
Capital services	4.3	4.0	3.9	4.2	2.9	2.5	3.7	2.4	2.2	2.3
Potential total factor productivity	1.7	0.6	1.1	1.4	1.4	1.0	1.3	1.1	1.1	1.1

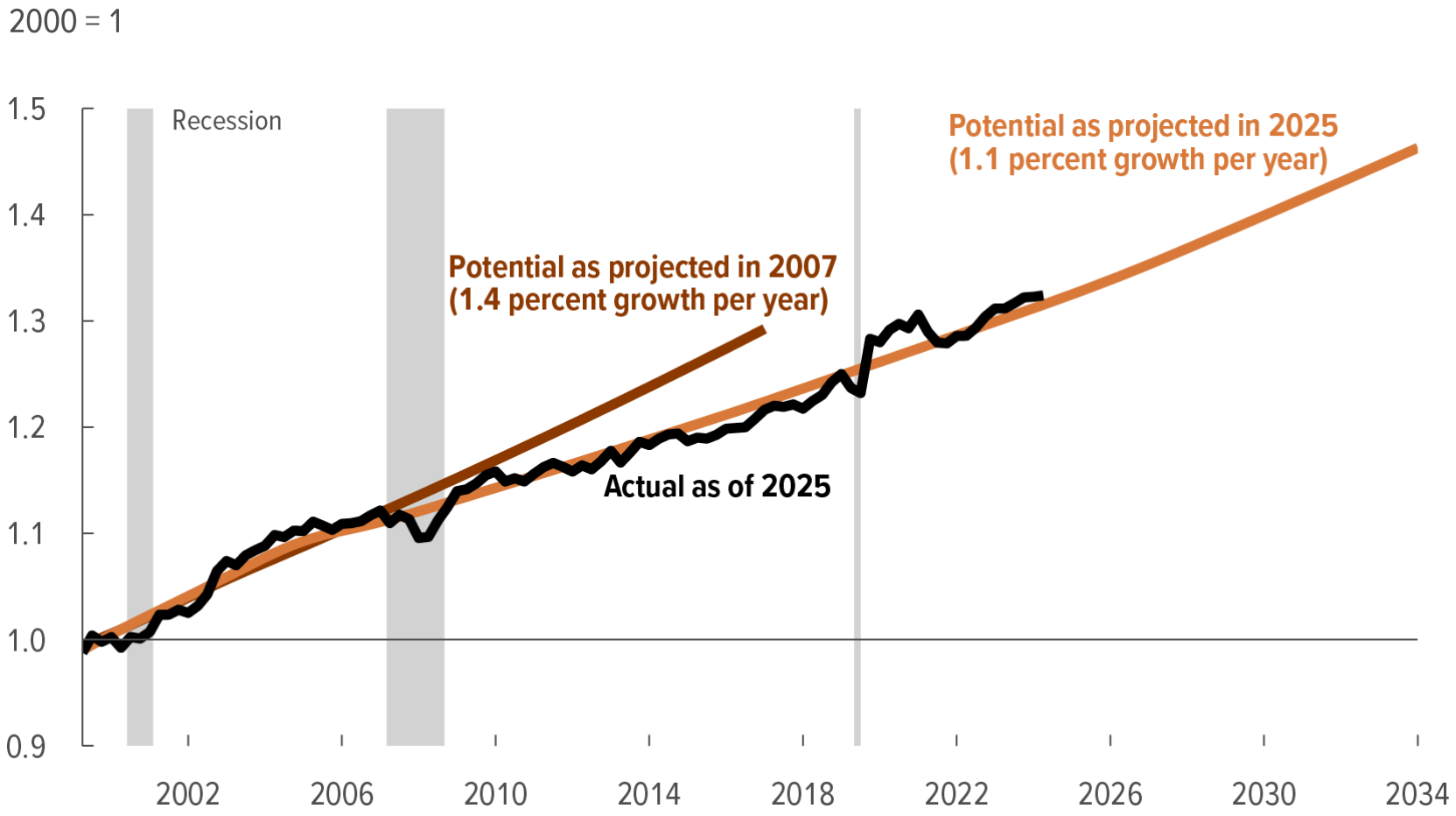
Congressional Budget Office, *The Budget and Economic Outlook: 2025 to 2035* (January 2025), www.cbo.gov/publication/60870.

How TFP Growth Affects Federal Debt Held by the Public



Congressional Budget Office, *The Long-Term Budget Outlook Under Alternative Scenarios for the Economy and the Budget* (May 2025), www.cbo.gov/publication/61332.

Total Factor Productivity in the Nonfarm Business Sector Since 2000



Vertical bars indicate the duration of recessions. A recession begins just after a peak in economic activity and runs through the subsequent trough.

Congressional Budget Office, *The Budget and Economic Outlook: 2025 to 2035* (January 2025), www.cbo.gov/publication/60870.

How Specific Factors Affect CBO's Forecast of Total Factor Productivity

How Government Investment Affects Productivity

In national income accounting, infrastructure owned by the government has a near-zero return. There are essentially no transactions or rents that result from the use of public infrastructure (for example, highways).

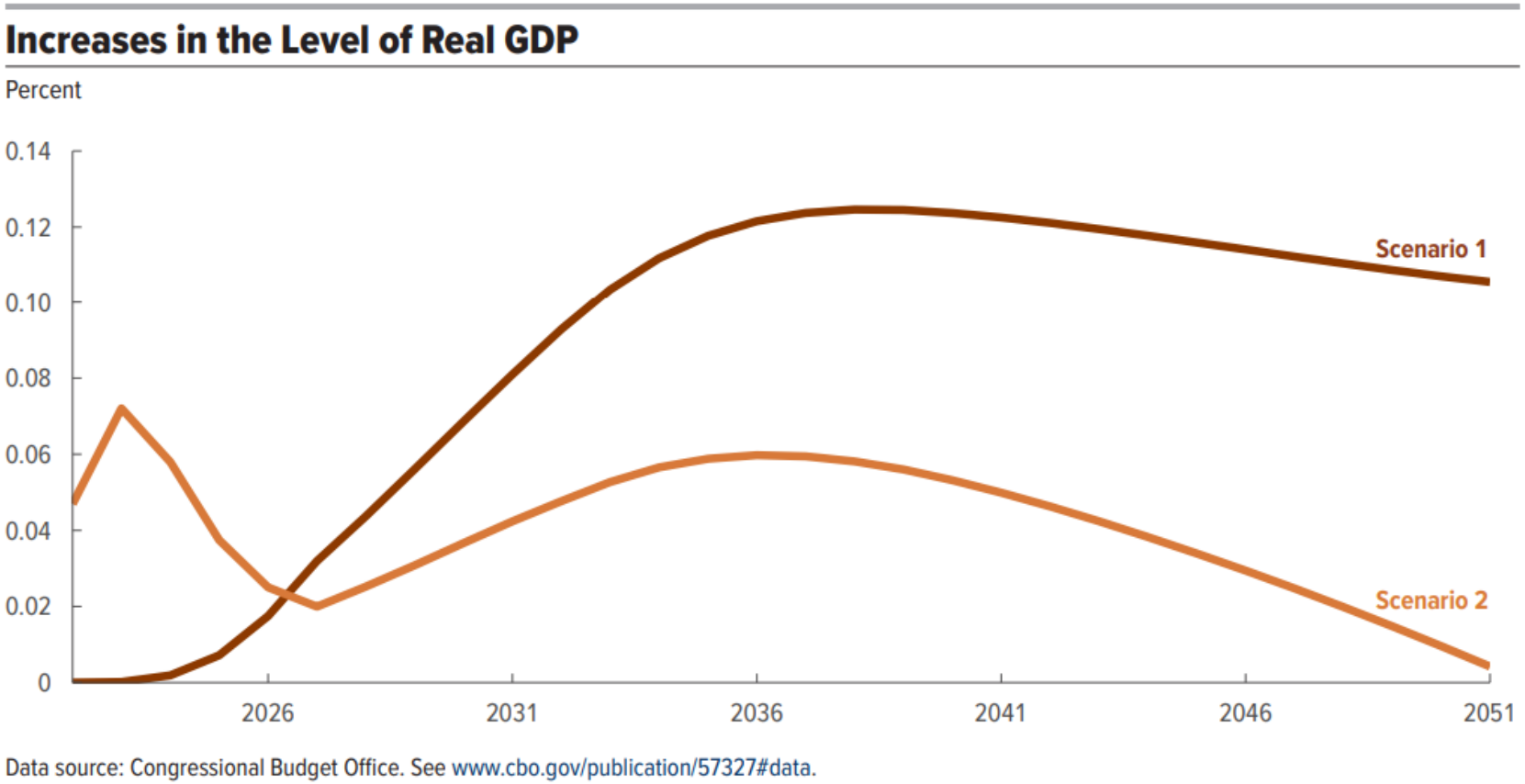
In contrast with the national income accounting approach and on the basis of published studies of the U.S. economy, CBO estimates that an additional dollar's worth of infrastructure capital increases real potential (maximum sustainable) GDP by 12.4 cents, on average.

In CBO's models, an increase in public infrastructure spending is reflected as an increase in productivity.

Increases in federal spending on physical infrastructure, research and development, or education would boost private-sector TFP in the coming decades, contributing to economic growth that could lower the budgetary cost of that spending.

Congressional Budget Office, *Effects of Physical Infrastructure Spending on the Economy and the Budget Under Two Illustrative Scenarios* (August 2021), www.cbo.gov/publication/57327.

Effects of Federal Infrastructure Spending

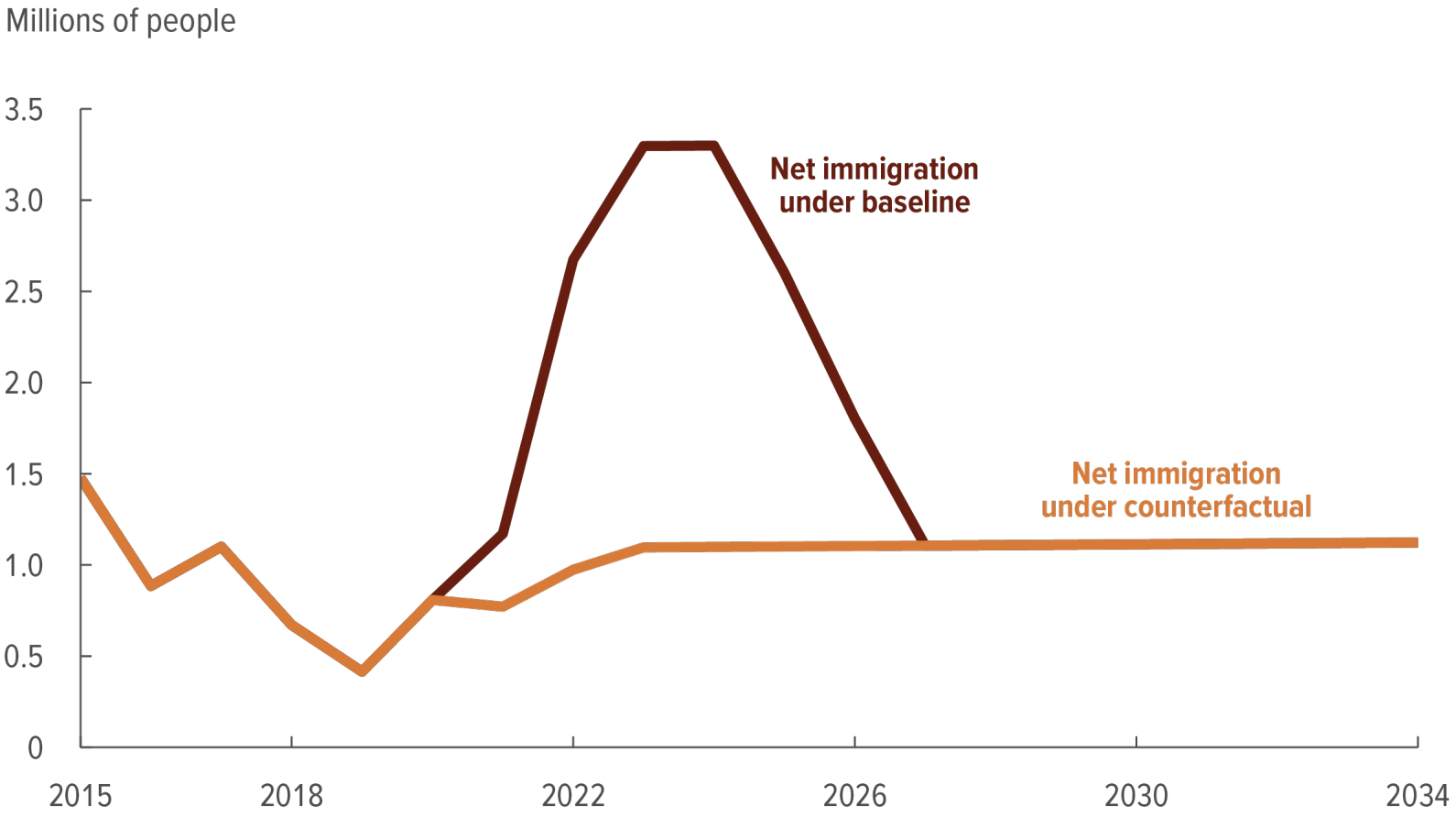


CBO estimates that a $500 billion dollar increase in federal infrastructure spending, financed by reducing other spending, would raise real GDP by 0.12 percent in 2034.

If that spending were financed by federal borrowing, real GDP would rise by 0.05 percent in 2034.

Congressional Budget Office, *Effects of Physical Infrastructure Spending on the Economy and the Budget Under Two Illustrative Scenarios* (August 2021), www.cbo.gov/publication/57327.

Net Immigration, 2015 to 2034



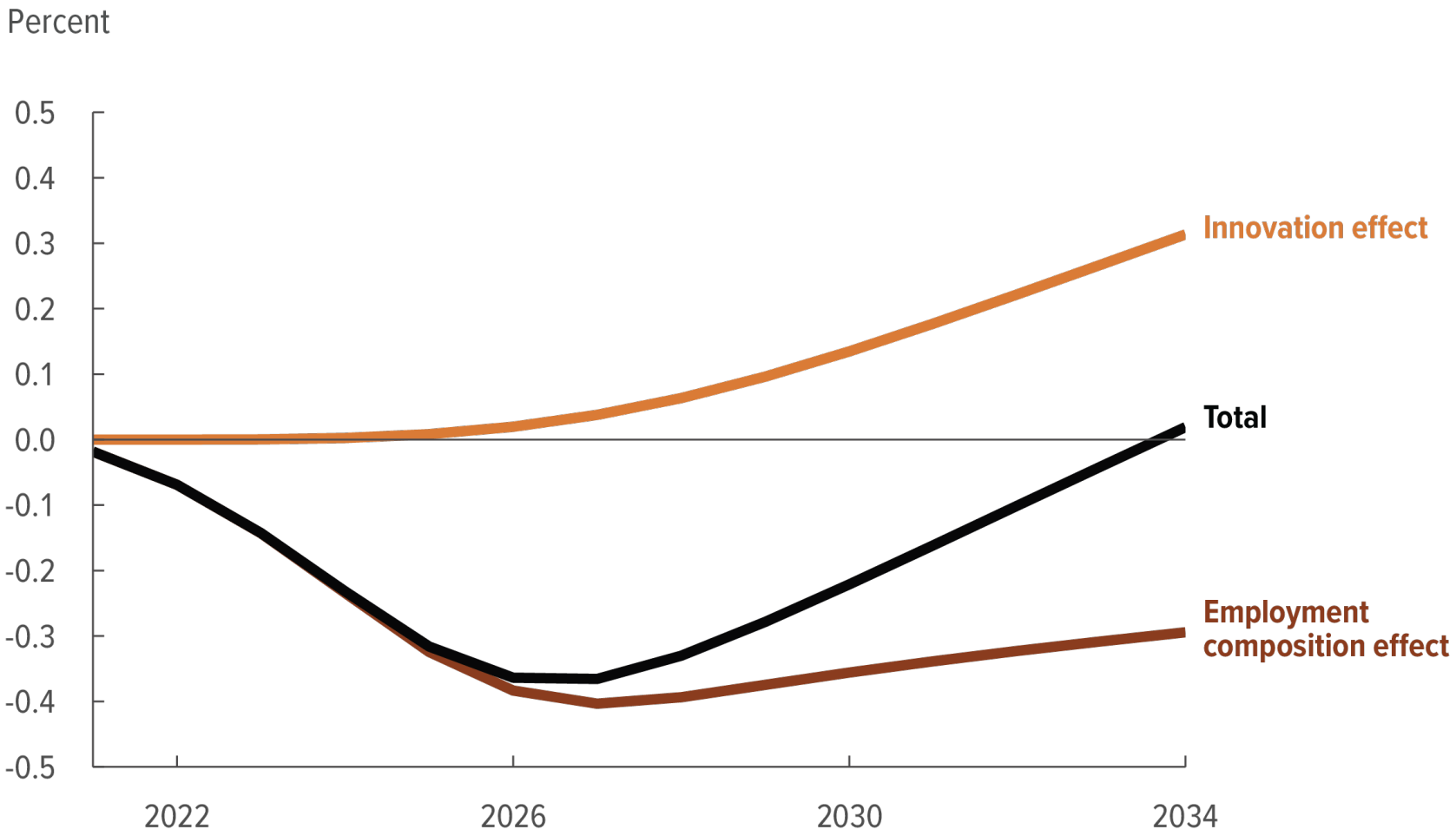
CBO's current baseline forecast accounts for the economic effects of a recent surge in net immigration.

The increase in the domestic population directly increases hours worked and potential output.

The new workers, on average, are younger and have less education than the average member of the population. As a result, they tend to work in low productivity industries and occupations.

To isolate the effects of the immigration surge, CBO constructed a counterfactual scenario in which net immigration remains near pre-2020 levels. For more information, see Congressional Budget Office, *Effects of the Immigration Surge on the Federal Budget and the Economy* (July 2024), Figure 1, www.cbo.gov/publication/60165.

How New Workers Affect CBO's Forecast of Total Factor Productivity



The **innovation effect** accounts for the boost to innovation coming from an increase in the number of science, technology, engineering, and mathematics (STEM) workers. That effect slowly grows over the next 10 years.

The **employment composition effect** accounts for changes in the age, skill, educational attainment, and occupational makeup of the workforce. New workers from the recent surge in net immigration are younger and have less education relative to the broader labor force. That puts downward pressure on TFP over the next five years.

Congressional Budget Office, *Effects of the Immigration Surge on the Federal Budget and the Economy* (July 2024), Figure 3, www.cbo.gov/publication/60165.

How Recent Legislation Affects CBO's Forecast of Total Factor Productivity

Provisions in H.R. 1 That Affect TFP

The bill passed by the House of Representatives on May 22, 2025, contains several provisions that, in CBO's estimation, will increase TFP. CBO produced a dynamic score of the bill that accounts for those effects. For example:

- Increased government investment.
- Leasing of federal lands will increase domestic oil and gas production by introducing somewhat lower-cost supplies into the market, freeing up capital and labor for other productive uses and thereby increasing TFP.
  - In addition, lower energy prices will increase TFP as businesses substitute away from more costly inputs.
- Tax incentives for private investment in research and development will increase TFP by increasing knowledge spillovers.
- Spectrum auctions will improve the quality and lower the price of wireless services, leading to higher TFP.

Congressional Budget Office, cost estimate for H.R. 1, the One Big Beautiful Bill Act (Dynamic Estimate) (June 2025), www.cbo.gov/publication/61486.

Provisions in H.R. 1 That Affect TFP (Continued)

Some provisions will reduce TFP. For example:

- Changes to immigration policy will lower the total number of people working in STEM fields.
- Changes to Pell grants and student loans will affect enrollment in higher education programs.
  - Those changes will alter the composition of the workforce so that there are more workers in low productivity jobs.

Congressional Budget Office, cost estimate for H.R. 1, the One Big Beautiful Bill Act (Dynamic Estimate) (June 2025), www.cbo.gov/publication/61486.

Improvements to CBO's Forecast of TFP

CBO is developing ways to better align the estimated effects of recent policies and other factors with its baseline modeling of TFP.

Currently, CBO's forecast of long-run TFP growth is based on a 25-year weighted average of TFP growth.

Effects of policies or economic changes that deviate significantly from those of the past 25 years are then layered on top of the long-run weighted average.

For example, CBO estimates that changes in private and public investment in research and development change TFP growth.