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

How Economists Can Help Inform Economic and Budget Analysis Used by the U.S. Congress

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For information about the meeting, see www.aeaweb.org/conference/2026/preliminary/2411.

Economic and Budget Analysis That CBO Provides to the Congress

Since 1975, CBO has produced nonpartisan and independent analyses of budgetary and economic issues to support the Congressional budget process.

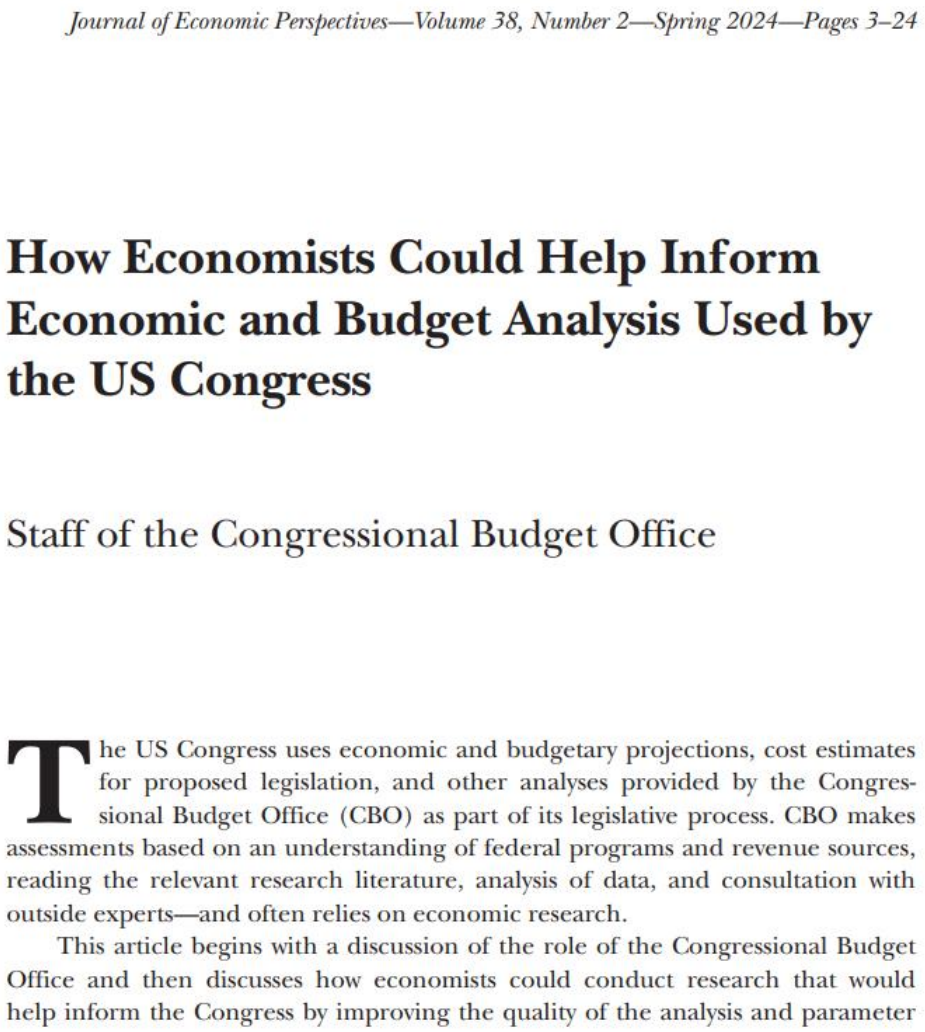
CBO publishes various products that provide the results of its modeling:

- Economic and baseline projections of revenues and spending
- Cost estimates for proposed legislation, sometimes in collaboration with the staff of the Joint Committee on Taxation
- Analytic reports as requested by the Congress

For that work, CBO focuses on economic factors—such as labor supply, investment, and productivity—rather than on producer or consumer surplus.

CBO makes assessments on the basis of its understanding of federal programs and revenue sources, relevant research literature, analysis of data, and consultation with outside experts—relying heavily on economic research.

CBO's Calls for Research



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How Economists Could Help Inform Economic and Budget Analysis Used by the US Congress

Staff of the Congressional Budget Office

The US Congress uses economic and budgetary projections, cost estimates for proposed legislation, and other analyses provided by the Congressional Budget Office (CBO) as part of its legislative process. CBO makes assessments based on an understanding of federal programs and revenue sources, reading the relevant research literature, analysis of data, and consultation with outside experts—and often relies on economic research.

This article begins with a discussion of the role of the Congressional Budget Office and then discusses how economists could conduct research that would help inform the Congress by improving the quality of the analysis and parameter

In the *Journal of Economic Perspectives* (Staff of CBO 2024) and in a series of 13 blog posts, CBO has discussed the need for new research in the following areas:

- Energy and the environment
- Finance
- Health
- Hepatitis C
- Labor
- Macroeconomics
- National security
- New drug development
- Nutritional standards in the Supplemental Nutrition Assistance Program
- Permitting requirements for investments in physical infrastructure
- Obesity
- Spending in Medicare Part D
- Taxes and transfers

The Role of Research in Budget Analysis

The research literature can leave key gaps in the base of evidence that is needed to comprehensively analyze the effects of policy changes on the economy and government budgets. CBO's work for the Congress provides one lens for identifying those gaps.

This presentation does the following:

- Provides background about CBO’s analyses, emphasizing cases in which CBO's budgetary estimates are particularly salient to Congressional debates
- Presents two examples that illustrate how research informs budget analysis:
  - Changes in food assistance
  - Changes in permitting requirements for investments in physical infrastructure
- Highlights opportunities for research and other ways to contribute to CBO’s work

Some Background About CBO's Analyses

How CBO Produces Cost Estimates

Review the legislative proposal, which often begins with ambiguous policy specifications.

Develop a modeling strategy.

- Attempt to identify key channels for impacts on the federal budget.
- Translate the legislative proposal into a tractable set of model inputs.

Model the effects of the proposal, accounting for a comprehensive set of expected behavioral responses.

- For example, CBO's health insurance microsimulation model accounts for various factors affecting individuals' and employers' decisions about insurance coverage (CBO 2020).

Review the model's results and write about the resulting estimate.

- Review output for analytical soundness and objectivity.
- Assess the main sources of uncertainty and possible alternative outcomes.
- Write the cost estimate, review it for clarity, and publish it.

Some Nuances of Cost Estimates

In addition to budgetary effects, **building blocks** that CBO develops in the course of producing cost estimates are often reported for transparency.

- For example, changes in health insurance coverage are building blocks used to estimate changes in federal spending on Medicaid.

The Congress generally requests **conventional cost estimates**, which reflect the expectation that total economic output is unchanged.

CBO routinely produces more comprehensive **dynamic analyses** for its baseline projections and provides dynamic cost estimates as requested or required. (The examples in this presentation are dynamic analyses.)

Length of the Projection Period

CBO generally focuses on providing 10-year projections to align with the Congress's budget process, but some of the agency's analyses provide information about a longer period.

The agency provides supplemental information about effects beyond 10 years when it is of key Congressional interest and is feasible, such as with federal investment in physical infrastructure (CBO 2021) and payable benefits for Social Security (CBO 2023b).

CBO provides present values of future cash flows beyond 10 years for a few programs, such as credit programs that extend beyond that horizon (CBO 2024b).

How CBO Evaluates Its Accuracy

CBO regularly reviews its projections of budgetary (CBO 2024a) and economic outcomes (CBO 2025a), compares them with actual outcomes, and identifies sources of the differences.

The agency's estimates are updated when new information becomes available.

- CBO incorporated new data about the share of imports that can access lower duty rates by complying with the United States–Mexico–Canada Agreement (Swagel 2025).

When the requisite data are available, the agency evaluates the accuracy of its cost estimates as well.

- CBO (2017) reviewed projections made in March 2010 and May 2013 about key components of the Affordable Care Act, comparing those projections with actual outcomes.
- CBO (2018) reviewed estimates of the effects on spending over the 2009–2013 period of increased Supplemental Nutrition Assistance Program (SNAP) benefits provided by the American Recovery and Reinvestment Act of 2009.

Example 1:
Changes in Food Assistance

The Supplemental Nutrition Assistance Program

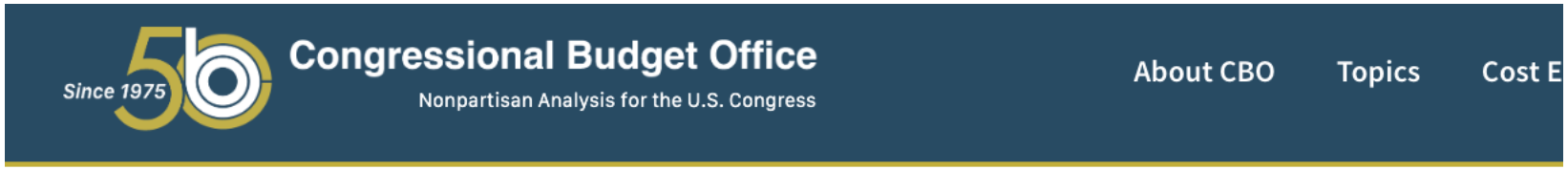
The Supplemental Nutrition Assistance Program (SNAP) provides benefits that help eligible low-income households purchase food.

CBO estimates that in 2025, an average of 42.5 million people will receive SNAP benefits each month. On average, participants received $188 per month.

Two examples of recent Congressional interest:

- The addition of nutritional standards
- H.R. 1 (the 2025 reconciliation act as passed by the House), which would have modified benefits, eligibility, and cost sharing

Nutritional Standards and the Federal Budget



Blog

A Call for New Research in the Area of Nutritional Standards in SNAP

Posted by Noelia Duchovny on May 2, 2025

The Supplemental Nutrition Assistance Program (SNAP) provides benefits that help eligible low-income households purchase food. Most enrolled households supplement SNAP benefits with personal funds (Tiehen, Newman, and Kirlin 2017). The Congressional Budget Office estimates that in 2025, an average of 42.5 million people will receive SNAP benefits each month, with an average monthly benefit of $188 per recipient (CBO 2025).

SNAP benefits can be used to buy many foods, although some items, such as hot prepared meals, are excluded. Lawmakers have asked CBO how adding nutritional standards to SNAP might affect the federal budget. Such standards would restrict purchases of foods linked to poor health outcomes, such as sugar-sweetened beverages, using SNAP benefits. New research would help the agency assess their budgetary effects.

In May 2025, CBO published a blog post calling for new research into how adding nutritional standards could impact SNAP recipients' food choices, health outcomes, and health care spending.

Key Areas for Additional Research on the Effects of Nutritional Standards for SNAP

CBO's blog post (Duchovny 2025) identified priorities:

- The effects of nutritional standards on **enrollment**.
- The effects of nutritional standards on overall **diet quality** as a precursor to changes in health. That includes assessments of the relevance of related research, such as the effects of sugar-sweetened beverage taxes on health (such as Hoffer and Macumber-Rosin 2025; Cawley and Frisvold 2023), accounting for potential differences in how people treat SNAP benefits and cash (such as Hastings and Shapiro 2018).
- The effects of changes in diet quality on **health**, including the effects of the consumption of specific foods on overall diet quality and the extent to which changes in diet alone affect health.
- Differences in policy effects among **subgroups of people** (such as those of specific ages or with chronic conditions).
- The near- and long-term implications of nutritional standards for health and health care **spending**.

SNAP Changes in H.R. 1 and the Federal Budget

CBO (2025b) estimated that H.R. 1 would have reduced the federal budget deficit from 2025 to 2034 by **$353 billion**, through the following provisions:

- Requirement of states to pay a share of SNAP benefit costs **(−$128 billion)**
- Work requirements **(−$92 billion)**
- Thrifty Food Plan changes **(−$37 billion)**
- Administrative cost sharing with states **(−$27 billion)**
- Restrictions on internet expenses **(−$11 billion)**
- Availability of standard utility allowance based on receipt of energy assistance **(−$6 billion)**
- Eligibility restrictions for certain immigrants **(−$4 billion)**
- Macroeconomic effects on interest rates, state responses, labor supply, and other factors **(−$66 billion)**

CBO (2025d) provides details about each provision.

The change in federal outlays from each provision are over the 2025–2034 period and do not account for interactions among provisions. Because of overlap in the affected populations, the effects of simultaneously enacting all of the provisions would differ from the sum of the effects of enacting each provision separately.

The Microeconomic and Macroeconomic Effects of the SNAP Changes in H.R. 1

Aggregate demand effects

- Effects on the income distribution are based on the total (federal + state) change in SNAP benefits as well as states' fiscal responses.
- Changes in administrative costs are treated as government consumption.

Labor supply effects

- SNAP recipients would adjust their labor supply in response to the change in benefit amounts and changes in eligibility, such as work requirements.
- Workers would adjust their labor supply in response to changes in state income taxes.

Effects on interest rates for federal debt

- Less federal borrowing reduces competition with private borrowers and lowers interest rates.

Investment effects

- SNAP provisions would reduce the federal deficit and crowd in private investment.
- States might respond by changing capital income taxes, which would impact the user cost of capital and, in turn, private investment.

Baseline Projections of SNAP

To analyze the effects of H.R. 1, CBO first had to project spending on SNAP from 2025 to 2034 under current law at that time. That projection was based on recent data about

- Number of beneficiaries
- Average benefit amount
- Family structure of beneficiaries
- Employment of beneficiaries
- Income distribution of beneficiaries
- Take-up of benefits

CBO's projections of how those factors will evolve over time would benefit from additional research.

Modeling State Responses

H.R. 1 proposed changing SNAP from being fully federally funded to instead having states pay between 5 percent and 25 percent of SNAP benefits. The percentage that states paid would have depended on their past rate of making errors as determined by audits.

CBO projected that the reduction in federal spending on SNAP benefits **(−$255 billion)** would have been partially offset by an increase in state spending **($85 billion)** from 2025 to 2034.

The agency projected that, in response to being required to pay more, some states would modify benefits or eligibility or leave the program altogether.

- CBO estimated state responses in the aggregate using a probabilistic approach to account for the range of possible outcomes.
- The agency used research literature about how states respond to matching requirements (for example, Baicker 2001) and data about similar programs, such as Medicaid, to estimate the extent of responses.

A related matching requirement was enacted this year, and research about its effects would inform future analyses.

Modeling Short-Term State Responses

The matching requirement would have caused states to adjust their budgets in ways that, in turn, would have affected the federal budget.

CBO used the findings in Rueben, Randall, and Boddupalli (2018), which followed a similar empirical approach to that of Poterba (1994) and Clemens and Miran (2012), to determine how states adjusted their revenues, expenditures, and other means of financing in response to an immediate change in their fiscal position. In that analysis, they found that from 1990 to 2015:

- When states experienced a $1 **deficit shock**, they typically reduced spending by $0.26 and increased revenues by $0.08 in the current year. They increased revenues by an additional $0.14 in the following year.
- When states experienced a $1 **surplus shock**, they generally made no change to spending, reduced revenues by $0.04 in the current year, and further reduced revenues by $0.08 in the following year.

Modeling Longer-Term State Responses

CBO estimates that in the longer term, states would accommodate a change in their fiscal position by splitting the change evenly between spending and revenues. Specifically, for a $1 deficit (surplus) shock, states would implement a $0.50 reduction (increase) in spending and a $0.50 increase (reduction) in revenues. Such changes would result in the following transition paths:

$1 Deficit Shock	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Spending decrease	$0.26	$0.38	$0.44	$0.47	$0.49	$0.50	$0.50	$0.50	$0.50	$0.50
Revenue increase	$0.08	$0.22	$0.36	$0.43	$0.47	$0.49	$0.50	$0.50	$0.50	$0.50
Borrowing (residual)	*$0.66*	*$0.40*	*$0.20*	*$0.10*	*$0.04*	*$0.01*	*$0.00*	*$0.00*	*$0.00*	*$0.00*

$1 Surplus Shock	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Spending increase	$0.00	$0.33	$0.44	$0.48	$0.49	$0.50	$0.50	$0.50	$0.50	$0.50
Revenue decrease	$0.04	$0.12	$0.37	$0.46	$0.49	$0.50	$0.50	$0.50	$0.50	$0.50
Savings (residual)	*$0.96*	*$0.55*	*$0.19*	*$0.06*	*$0.02*	*$0.00*	*$0.00*	*$0.00*	*$0.00*	*$0.00*

Research about the transition paths and long-term values would be especially helpful.

Entries in red represent imposed values. Entries in black represent values based on the resulting transition path.

Modeling Incentives and Labor Supply

Synthesizing the research literature (for example, Hotchkiss, Moore, and Rios-Avila 2024; studies reviewed in McClelland and Mok 2012), the agency estimated two types of effects stemming from increases in state taxes on the supply of labor:

- **Substitution effects.** If the amount available to households after taxes and transfers from an additional dollar of labor earnings decreased by 10 percent relative to current law, SNAP recipients with the lowest income would reduce their hours of work by 3.1 percent.
- **Income effects**. If income after taxes and transfers decreased by 10 percent relative to current law, SNAP recipients would increase their hours of work by 0.5 percent.

Decreases in the maximum benefit amount, as determined by the cost of the Thrifty Food Plan, have substitution and income effects for some beneficiaries, such as single individuals with low wages. For others, such as single parents with low wages and several children, only income effects occur because the reduction in benefits from working is unchanged. Hours worked weighted by earnings is a key input into economic projections.

Research about differences in the effects of SNAP changes compared with the effects of tax changes, such as in their salience, would be especially helpful.

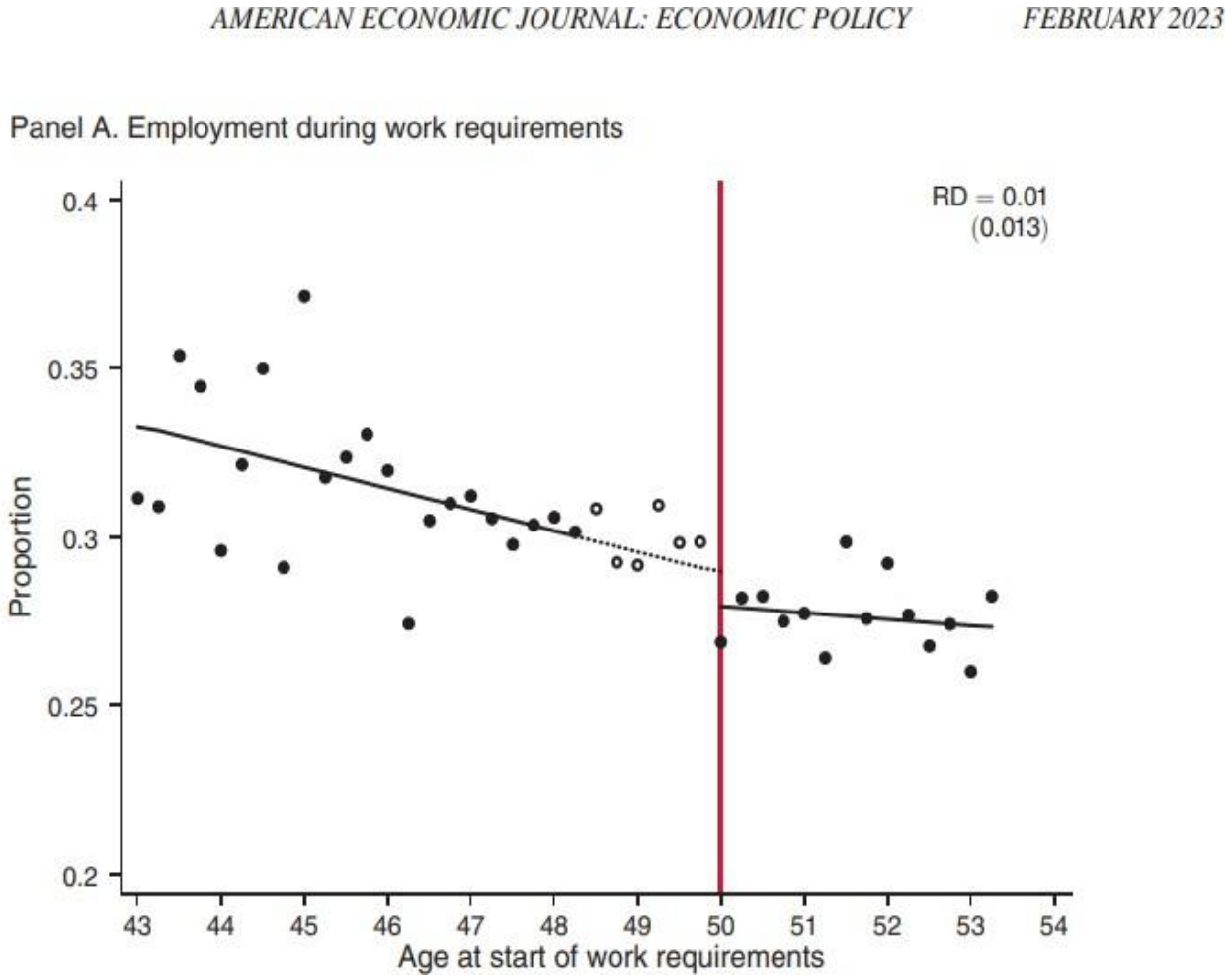
Modeling Work Requirements and Labor Supply

H.R. 1 would have expanded SNAP work requirements in various ways, including:

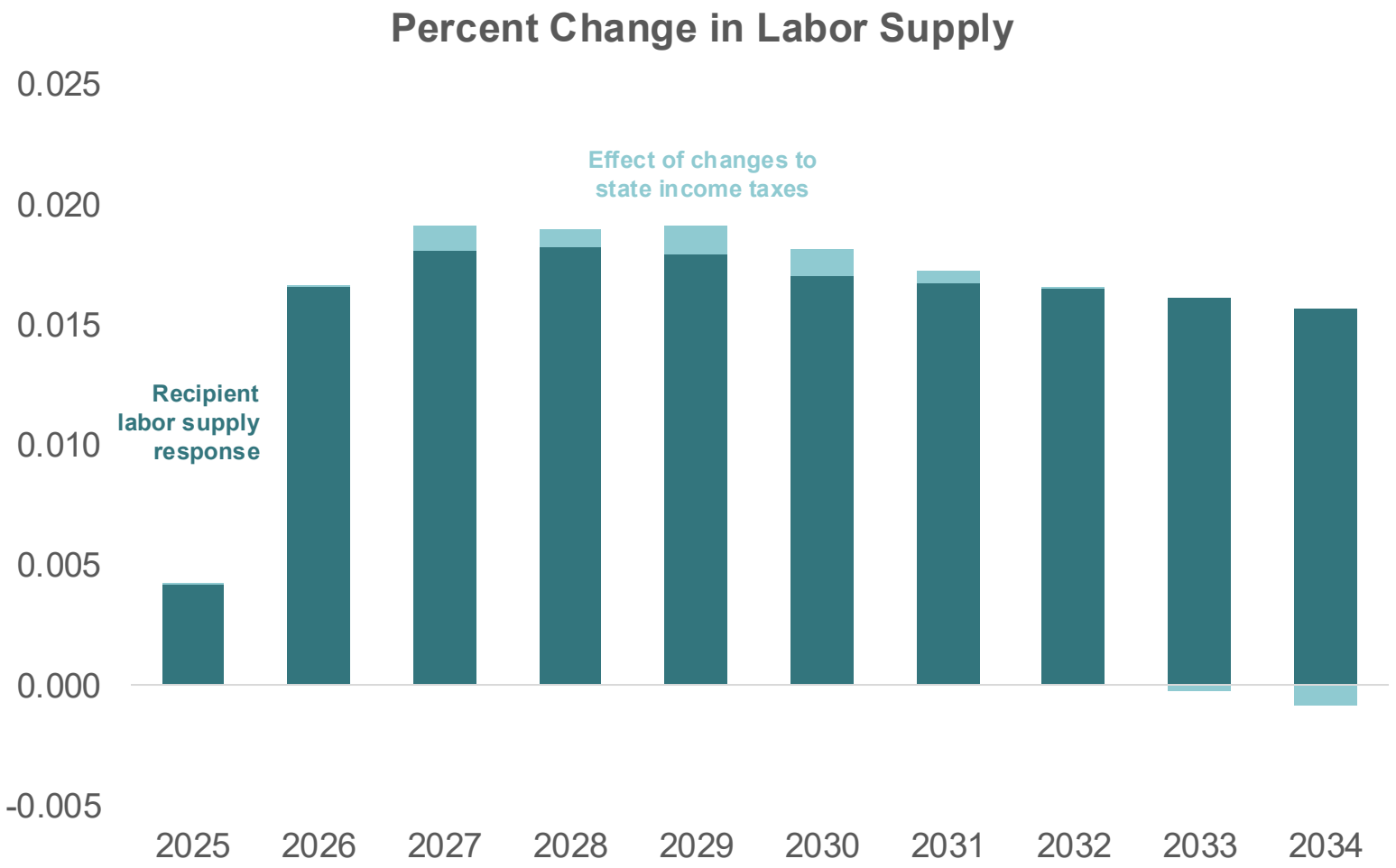
- More people ages 55 to 64 would be subject to work requirements, and
- Certain state waivers would be eliminated.

To estimate the effects on labor supply, CBO relied on research about the effects of work requirements on labor supply at different ages, such as Gray and others (2023), as shown in the figure.

Additional research related to different specifications of work requirements would be especially helpful.



Effects of SNAP Changes in H.R. 1 on Total Labor Supply



In CBO's assessment, the labor supply effects that result from recipients' reduction in benefits and changes in eligibility (primarily from work requirements) account for most of the labor supply effects resulting from the SNAP-related provisions in the bill.

Data are for calendar years.

Example 2:

Changes in Permitting Requirements for Investments in Physical Infrastructure

Permitting Requirements

Building physical infrastructure, such as that related to energy and transportation, generally requires complying with a variety of procedural and substantive legal requirements at the federal, state, local, and tribal level.

For instance, a notice in the *Federal Register* (Department of Homeland Security 2023) listed roughly 30 federal requirements relevant to border wall construction, including requirements in place under the National Environmental Policy Act (NEPA), the Endangered Species Act, and the Clean Water Act.

As shorthand, in this presentation we refer to the general set of such procedural and substantive legal requirements as permitting requirements.

The National Environmental Policy Act

NEPA requires the production of information about how certain infrastructure projects would affect communities and the environment.

The process of complying with those requirements generally increases the expected cost and time required to complete affected infrastructure projects.

- Some projects, such as highway repair, have **categorical exclusions (CATEXs)**—not an exemption from NEPA, but an abbreviated type of NEPA compliance.
- About 12,000 **environmental assessments (EAs)** are produced each year. These can be long: The EA for a Manhattan congestion pricing zone was about 4,000 pages.
- About 150 **environmental impact statements (EISs)**, for projects such as new highway construction, are produced each year.

The possibility of NEPA-related litigation also generally increases the uncertainty associated with investments in affected projects because federal courts allow plaintiffs to challenge a federal agency's compliance with NEPA under the Administrative Procedure Act (5 U.S.C. §§ 701–706; Hite 2025).

The title of this slide has been updated since its original publication.

The National Environmental Policy Act (Continued)

The Congress periodically considers legislation that would change NEPA and other permitting requirements, but there is currently limited available evidence on the expected effects of such changes:

- Lewis (2019) on oil and gas
- Brooks and Liscow (2023) on highway construction
- Liscow (2025) on the overall permitting process

CBO's ability to provide consistent and comprehensive analysis of permitting-related legislation, and to incorporate the full economic and budgetary effects of enacted legislation and administrative actions into the baseline, depends heavily on the research literature describing and documenting those effects.

The title of this slide has been updated since its original publication.

Estimating the Effects of a Permitting Provision in H.R. 1

One example of a permitting-related cost estimate is from H.R. 1 last year, which would have allowed project sponsors to pay an opt-in fee in exchange for faster processing of EAs and EISs and would have precluded judicial review of those EAs and EISs.

Some experts have conjectured that such changes to judicial review, if enacted, could meaningfully decrease the time needed to build physical infrastructure projects (Bagley 2025, Hochman 2025).

Estimating the Effects of a Permitting Provision in H.R. 1 (Continued)

Congressional Budget Office
Dynamic Estimate

June 18, 2025 (Revised)

H.R. 1, One Big Beautiful Bill Act
As passed by the House of Representatives on May 22, 2025

Effects on Total Factor Productivity. H.R. 1 would have small positive effects on the level of TFP. On average over the 2025-2034 period, the bill would increase the level of TFP by less than one-tenth of one percent. The changes in TFP growth would slightly increase average annual potential GDP growth over the entire 2025-2034 period.

Several factors would have small positive effects on TFP growth, including the bill's effects on domestic oil and gas production, physical infrastructure investment, investment in research and development, permitting requirements, and spectrum auctions. Other effects of the bill would have small negative effects on TFP growth, including changes in educational attainment and a reduction in the number of individuals working in science, technology, engineering, and mathematics that stems from changes in higher education and immigration policy.

For its dynamic cost estimate of this permitting provision in H.R. 1, CBO focused on modeling how the provision would change the average time to build and the variance in that time.

CBO then estimated the effects of those changes on public and private investment, total factor productivity, and gross domestic product.

For the full estimate, see Congressional Budget Office (2025c).

Modeling the Effects of Changes to Permitting Requirements on Private Investment

Changes in permitting can sometimes be modeled as special cases of more general, core economic questions—for example: How do changes in regulations that change time to build affect private capital investment?

- The costs of regulations affecting time to build come in the form of "missing" investments—infrastructure projects that are never started because of the additional time and cost imposed by permitting requirements.
- If permitting requirements do in fact result in missing investments, analyzing observed investments alone would provide an incomplete picture of how permitting affects investment.
- Instead, research could inform estimates of how much investment would have been made under a counterfactual set of permitting requirements.
- Research on this type of question is scarce.

For one example of research about how changes in regulation affect investment, see Budish and others (2015).

Modeling the Effects of Changes to Permitting Requirements on Private Investment (Continued)

In its analysis of the permitting provision included in H.R. 1, CBO used a calibrated structural model to translate estimated changes in the average time to build and variance in that time into a change in the cost of capital.

The agency then quantified how that change in the cost of capital would affect private investment using CBO's CapTax model, which CBO uses to estimate the effect of federal taxes on capital income from new investment.

CBO's modeling of changes in permitting requirements would benefit from:

- Information about whether that modeling approach—that is, focusing on changes in time to build—is sufficient to capture the key economic and budgetary effects of similar permitting provisions on private investment.
- Legal or economic analysis quantifying the extent to which changes in permitting requirements, as modeled through changes in time to build or through other channels, would change private investment.

For details about the CapTax model, see Burnham and Carloni (2022) and https://github.com/US-CBO/captax.

Current Gaps in the Research Literature

CBO recently published a blog post (Kile, Papenfuss, and Williams 2025) describing some additional examples of data and research that would broaden and deepen the agency's basis of assessment for modeling the effects of permitting-related changes:

- Effects on time to build
- Changes in "litigation-proofing" activities
- Project-level data linking permitting and litigation
- Estimates of how changes in permitting requirements affect public investment
- Information about the scope of permitting requirements relevant to private investment

Effects on Time to Build

Little research has quantitatively estimated whether and by how much these types of legislative proposals would change time to build for infrastructure projects.

For example, the permitting provision in H.R. 1 did not affect permitting requirements other than NEPA.

As part of its published H.R.1 cost estimate, CBO modeled “litigation shifting”—that is, whether litigation that would have been brought under NEPA would shift to be brought under other statutes or requirements.

The absence of direct evidence required a more indirect adjustment.

Effects on Time to Build (Continued)

CBO is also on the lookout for new research on several other topics related to estimating changes in time to build, including the following:

- The amount, characteristics, and outcomes of permitting-related litigation, similar to the data on NEPA litigation compiled by the Breakthrough Institute (Chiappa and others 2024)
- What share of projects generally pause construction during the litigation process, either because of preliminary injunctions or voluntary stoppages
- Whether and to what extent states or localities would change their permitting requirements or processes in response to federal policy changes
- How the effects of a given change in permitting requirements would differ across industries

Changes in “Litigation-Proofing” Activities

Both the Congressional Research Service (Luther 2011) and the Government Accountability Office (2014) have observed that litigation risk may increase the time and cost of preparing NEPA applications (for example, by incorporating analyses of additional alternative scenarios).

In principle, an exemption from judicial review could reduce the need for agencies (or contractors on their behalf) to undertake such activity, which could reduce the cost and time required for those projects.

CBO would benefit from legal and economic analysis quantifying whether and to what extent such activities would change in response to exemptions from judicial review or other changes in permitting requirements.

Project-Level Data Linking Permitting and Litigation

A team at Indiana University's Paul H. O'Neill School of Public and Environmental Affairs constructed DEV-CaMP, a database that links project-level data on critical minerals projects with records of financial support (including federal loans), land ownership, litigation, and permitting.

CBO would benefit from additional linked project-level data.

The database can be accessed at https://criticalmaterialproject.netlify.app/.

Estimates of How Changes in Permitting Requirements Affect Public Investment

In June 2025, a bipartisan group of House members expressed interest in incorporating provisions in future surface transportation reauthorization bills that would shorten the time required to comply with permitting requirements.

Targeted changes to permitting have been implemented for some other forms of public investment, including border wall construction (Department of Homeland Security 2023).

Targeted changes to permitting have also been implemented for some publicly subsidized private investments, such as certain semiconductor projects subsidized through the CHIPS and Science Act (CBO 2023a).

Estimates of How Changes in Permitting Requirements Affect Public Investment (Continued)

Brooks and Liscow (2023) documented evidence suggesting that the addition of permitting requirements, such as NEPA's enactment in 1970, contributed to increases in the cost of highway construction.

CBO would benefit from additional information about how changes in permitting affect public investment.

Information About the Scope of Permitting Requirements Relevant to Private Investment

In dynamic analyses of how changes in permitting requirements would affect private investment, CBO constructs projections of which types of private investment are subject to different permitting statutes, such as NEPA or the Clean Water Act.

Linking permitting requirements to industries is straightforward in some cases.

- Example: Natural Gas Act of 1938

But other determinations are much less straightforward.

- Example: NEPA's "major federal actions"

In its analysis of H.R. 1, the agency relied in part on RegData—a database linking federal regulations to industries that was created by Al-Ubaydli and McLaughlin (2014) at George Mason University's Mercatus Center and is now hosted at QuantGov.org.

Information About the Scope of Permitting Requirements Relevant to Private Investment (Continued)

CBO's modeling of changes in permitting requirements would benefit from research mapping the relevance of different permitting requirements to private investment in different industries or geographic areas.

- Example: Greenhill and others (2024) on the Clean Water Act

CBO would also benefit from legal or economic analysis proposing and validating methods for projecting how changes to particular permitting requirements relevant to private investment in a given industry would affect such investment.

- Example: Jaffe (1986) as reapplied in Bloom, Schankerman, and Van Reenen (2013)
- Such frameworks could provide insight into which permitting requirements are likely to be the binding constraints on investment and how different legislative proposals would be expected to change investment.

Some Ways Economists Can Inform Analyses Used by the Congress

Opportunities to Engage

CBO would benefit from researchers engaging with the agency's work by:

- Considering CBO's calls for research
- Accepting invitations to review preliminary documents
- Applying to CBO's dissertation fellows program
- Applying to CBO's visiting scholars program

In their writing, researchers can inform analyses used by the Congress by providing additional context about their findings through descriptive statistics and discussion of the external validity of their estimates. Ideas about how to map existing results to new populations, different economic conditions, or related policies are especially helpful.

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