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

Estimating the Effects of Changes in Permitting Requirements on Private Investment

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Overview

Congress periodically considers legislation that would change federal permitting requirements affecting private and public investment.

- Changes to the National Environmental Policy Act (NEPA) are an example.
- In some cases, legislation would also affect state, local, or tribal permitting requirements.

CBO developed an analytical approach to estimate how changes to permitting requirements would affect private investment and, therefore, the capital stock that contributes to economic output.

- In that approach, CBO estimates the change in the time to build that would result from the permitting changes.
- That change in the time to build is modeled as a change in the user cost of capital, which is similar to how CBO models investment responses to changes in taxes.

For more details about CBO's modeling of changes in permitting requirements, see Congressional Budget Office (2025a).

CBO's Approach

Change in Time to Build Under Proposed Legislation

Start with information from CBO's conventional cost estimate, which:

- Assesses which permitting requirements are affected,
- Assesses which industries and geographic areas are affected, and
- Estimates the change in time to build.

Baseline Private Investment

1. Project private investment for each affected industry under current law.
2. Estimate the share of investment subject to the permitting requirements affected by the legislation.

Change in Private Investment

3. Use a calibrated structural model to estimate investment responses, in which the change in time to build is akin to a change in the user cost of capital.
4. Apply the projected percentage change to baseline private investment and sum across industries.

Example: Permitting Provision in H.R. 1

An example of a permitting-related provision is from H.R. 1, the House-passed version of the 2025 reconciliation act.

- This provision would have amended NEPA to allow project sponsors to pay an opt-in fee in exchange for faster processing of environmental reviews and would have precluded judicial review of those environmental reviews.

As part of its conventional cost estimate for this provision, CBO modeled how the provision would change projects' time to build (Congressional Budget Office 2025b).

Then, in its dynamic cost estimate, CBO estimated the effects of those changes in time to build on outcomes such as investment, total factor productivity, and economic growth (Congressional Budget Office 2025c).

This slide deck focuses on CBO's modeling of effects on private investment, which reflects changes in the average time to build and the variance in that time.

See Sec. 80151 of the One Big Beautiful Bill Act, H.R. 1 (as passed by the House of Representatives, May 22, 2025), 119th Cong., www.congress.gov/bill/119th-congress/house-bill/1/text/eh.

Estimating Effects on Private Investment

Step 1. Project industry-specific private investment under current law.

Step 2. Estimate the share of industry-specific private investment that is subject to one or more of the relevant permitting requirements, in part relying on RegData (McLaughlin 2022), a database linking regulations to specific industries.

Step 3. Estimate the percentage change in private investment for that industry, given the change in time to build.

Step 4. Multiply the results from steps 1, 2, and 3 to estimate the change in investment by an industry:

Current-Law Investment × **Share Subject to Permitting** × **Percentage Change**

Baseline private investment by industry

Calibrated structural model of industry investment

Step 1: Current-Law Investment

Projecting Industry-Specific Private Investment Under Current Law

CBO routinely projects private investment in 11 categories of assets, but not by industry (Lasky 2018).

To model the industry-specific effects of permitting-related legislation, CBO first projects fixed private investment by industry under current law:

- CBO allocates its existing projections of asset-level investment to 74 Bureau of Economic Analysis (BEA) industries according to their share of recent economywide investment in the relevant asset class.
- For each of the 74 BEA industries, CBO then sums the projected investment in the 11 asset types.

Example: Industry-Specific Investment Projection

BEA 211: Oil and Gas Extraction, Fourth Quarter of 2034

Asset category	Economywide investment in assets (billions of current USD) (A)	Industry share of economywide investment in assets (percent) (B)	Industry-specific investment in assets (billions of current USD) (A × B)
Equipment: Computers	254	0.1	0.2
Equipment: Communications equipment	231	< 0.1	< 0.1
Equipment: Other	1,663	0.2	2.6
Equipment: Mining	32	13.8	4.5
Equipment: Farming	54	< 0.1	< 0.1
Business structures: Mining, exploration, shafts, wells	112	87.1	97.4
Business structures: Farm	16	< 0.1	< 0.1
Business structures: Other	1,046	1.1	11.9
Intellectual property: Software	1,078	0.1	0.9
Intellectual property: Research and development	1,243	1.1	13.1
Intellectual property: Entertainment, literary, and artistic originals	166	0.0	< 0.1
Total	**5,896**		**130.6**

CBO produced such estimates for all 74 BEA industries in each quarter of the projection period.

Data sources: Congressional Budget Office, “Economic Projections” (January 2025), www.cbo.gov/data/budget-economic-data#4, and analysis of BEA data.

To model the effects of the permitting-related provision in H.R. 1, CBO applied the 2022–2023 average asset-category investment percentages in the first quarter of 2025. To account for transitory effects of economic recovery after the COVID-19 pandemic, those shares eventually transition part of the way back toward the 2015–2019 average. Values may not sum to totals because of rounding. USD = U.S. dollars.

Step 2: Share Subject to Permitting

Permitting Requirements in the U.S. Code

CBO estimates the share of investment in each BEA industry that is subject to the permitting requirements affected by the proposed policy.

CBO's framework is designed to accommodate modeling a variety of permitting requirements, including the following:

- National Environmental Policy Act, 42 U.S.C. 4321 et seq.;
- Endangered Species Act, 16 U.S.C. 1531;
- Clean Water Act, 33 U.S.C. 1251;
- National Historic Preservation Act, 54 U.S.C. 470; and
- Migratory Bird Treaty Conservation Act, 16 U.S.C. 715.

Example: Linking Permitting Requirements to Industries

Find citations of statute in the Code of Federal Regulations (CFR):

- Title 43 Part 3150 cites NEPA 42 U.S.C. § 4321 et seq.

Obtain RegData's prediction of the "probability of relevance" of the CFR title and part to industries defined by the North American Industry Classification System (NAICS):

- NAICS 211120: Crude Oil Extraction

§ 3152.2 Action on application.

(a) The authorized officer shall review each application and approve or disapprove it within 90 calendar days, unless compliance with statutory requirements such as the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*) delays this action. The applicant shall be notified promptly in writing of any such delay.

(b) The authorized officer shall include in each geophysical exploration permit terms and conditions deemed necessary to protect values, mineral resources, and nonmineral resources. Geophysical permits within National Petroleum Reserve—Alaska shall contain such reasonable conditions, restrictions and prohibitions as the authorized officer deems appropriate to mitigate adverse effects upon the surface resources of the Reserve and to satisfy the requirement of section 104(b) of the Naval Petroleum Reserves Production Act of 1976 (42 U.S.C. 6504) (See part 3130 for stipulations relating to the National Petroleum Reserve—Alaska).

(c) An exploration permit shall become effective on the date specified by the authorized officer and shall expire 1 year thereafter.

(d) For lands subject to section 1008 of the Alaska National Interest Lands Conservation Act, exploration shall be authorized only upon a determination that such activities can be conducted in a manner which is consistent with the purposes for which the affected area is managed under applicable law.

Note: Text is from Onshore Oil and Gas Geophysical Exploration, 43 C.F.R. § 3150 (2025).

Estimating the Share of Industry-Specific Investment Affected by a Permitting Statute

For a given permitting statute, CBO:

- Selects the maximum probability of relevance for each six-digit NAICS code (e.g., NAICS 211120: Crude Oil Extraction) among all CFR parts that cite the statute, and
- Averages the output-weighted probabilities across six-digit NAICS codes within each BEA industry (e.g., BEA 211: Oil and Gas Extraction).

The result is interpreted as the share of each BEA industry subject to the permitting statute.

Step 3: Percentage Change in Investment

CBO's Calibrated Structural Model

In CBO's model of industry-specific investment, firms decide whether to begin the permitting process, which must be completed before a capital investment.

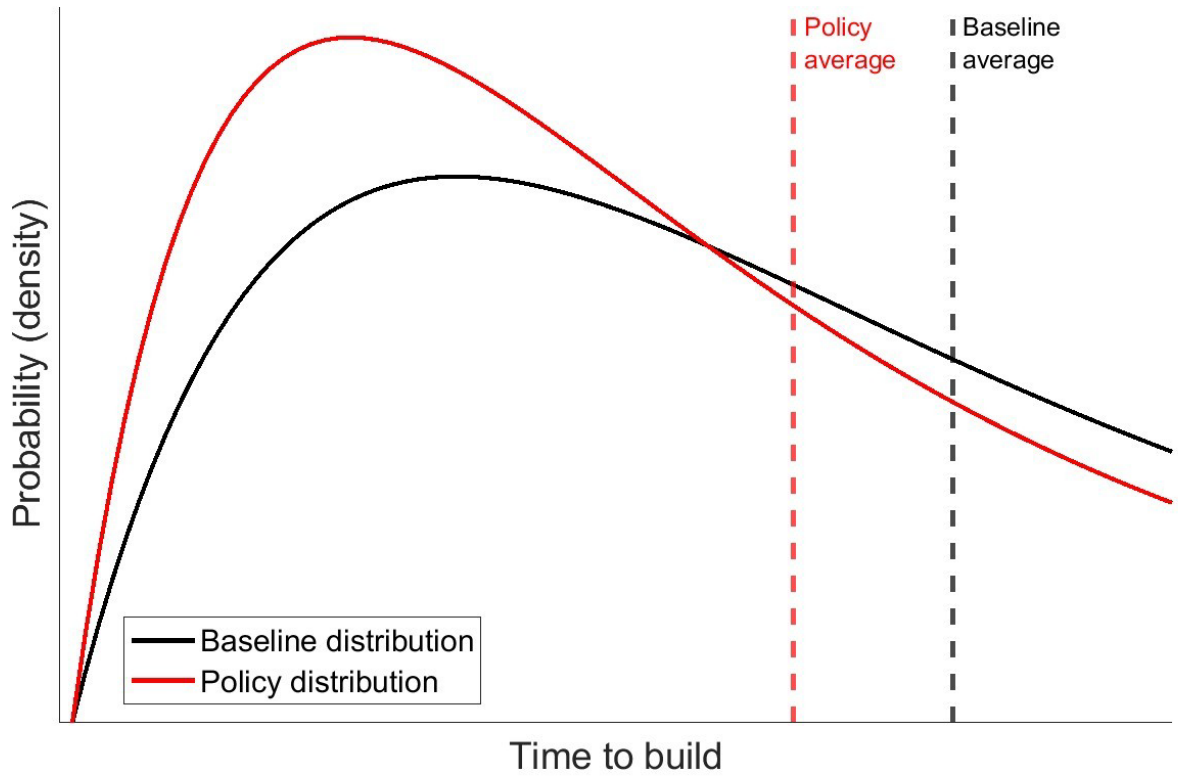
- That decision is based on the expected present value of profits.
- Time to build is uncertain and includes delays from permitting and litigation.
- Increased time to build reduces profits by further delaying revenues from the project, increasing interest accumulation, and increasing the fixed costs associated with the permitting process.

The modeling framework incorporates findings from research on investment and permitting.

- Regulatory compliance is a component of firm costs (Trebbi et al. 2025).
- Time to build affects investment dynamics (Kydland and Prescott 1982; Kalouptsidi 2014).
- Investment responds to changes in the length and uncertainty of time to build (Gabriel and Kung 2024).
- The number of projects already in the planning process affects firms' investment decisions (Glancy et al. 2026).
- The permitting and litigation components of time to build vary and are unknown at the time the firm begins the permitting process (Bennon et al. 2024; Breakthrough Institute 2025).

Changes in the Distribution of Time to Build in Affected Industries

Illustrative Example: Probability Density of Time to Build



In this example, the mean and the variance of an industrywide time-to-build distribution are both reduced. That distribution is an input into the firm's investment decision.

The effects of the policy could be different for projects of different sizes. Therefore, the change in the time-to-build distribution is estimated on a dollar-weighted basis to better reflect the overall effect on private investment.

Data source: Congressional Budget Office.

Translating Changes in Time to Build Into Changes in Investment

Illustrative Policy Change
Reduces the mean and variance of the time-to-build distribution faced by investing firms

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Lower Costs
Fewer per-period fixed costs
Lower interest costs
Less-discounted profits

→

Lower User Cost of Capital
Increases the value of entry

→

More Entry
Increases total investment until the value of entry = 0

↓

More Investment
Higher output
Lower prices

If the policy of interest instead increased the mean or variance of the time-to-build distribution, the directions of the various follow-on effects could be different.

Step 4: Change in Private Investment

Aggregating Changes in Private Investment

Multiply the results from steps 1 to 3 and sum them across industries:

Change in Private Investment =

Current-Law Investment × **Share Subject to Permitting** × **Percentage Change**

Baseline private investment by industry

Calibrated structural model of industry investment

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About This Document

This document was prepared to enhance the transparency of the work of the Congressional Budget Office and to encourage external review of that work. In keeping with CBO's mandate to provide objective, impartial analysis, it makes no recommendations.

The document is the result of work by Evan Herrnstadt, David Hughes, Jared Jageler (formerly of CBO), Aaron Krupkin, Willow Latham-Proença (formerly of CBO), Caroline Nielsen, Alaina Rhee, Eli Schrag, Chad Shirley, and William Swanson.

Nicholas Chase, Ann E. Futrell, Joseph Kile, John Seliski, Emily Stern, and Heidi Williams (a consultant to CBO) offered comments. Jeffrey Kling reviewed the document. Christine Browne edited the document.

CBO seeks feedback to make its work as useful as possible. Please send comments to communications@cbo.gov.