



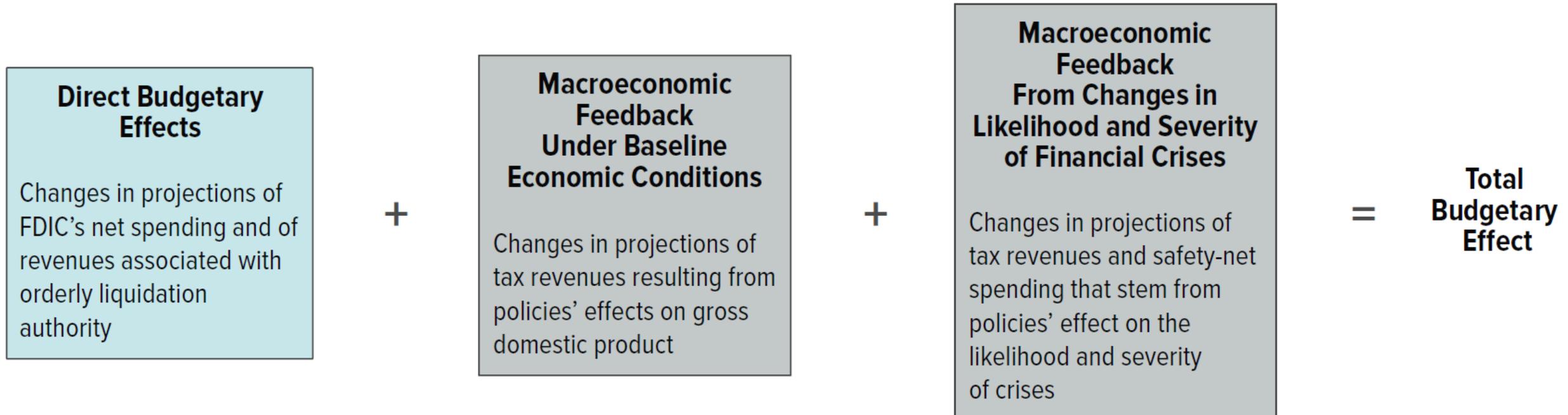
December 9, 2019

Financial Regulation and the Federal Budget

A Presentation to the Mortgage Bankers of America

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How Policy Changes Related to Financial Regulation Affect Projections of the Federal Budget



An Overview of Financial Regulation

	Safety and Soundness Regulation	Guarantee, Lending, and Resolution Authorities	Consumer and Investor Protection
Objective	Support economic and financial stability	Limit consequences to financial and economic system when institutions fail	Prohibit or discourage practices that harm consumers and investors
Potential Unintended Consequence	Might inhibit valuable economic activities that pose little risk	Sharing burden of negative outcomes of risky behavior might encourage institutions to take excessive risks	Might prohibit products that could help consumers
Example	Capital requirements	Orderly liquidation authority	Ability-to-repay mortgage rules

Budgetary Effects of Three Illustrative Policies, 2020 to 2029

Billions of Dollars

Lower Capital Requirements
by 1 Percentage Point

*

Macroeconomic Feedback

Eliminate Orderly
Liquidation Authority

Direct
Budgetary
Effects

Repeal the Ability-to-
Repay Mortgage Rule

*

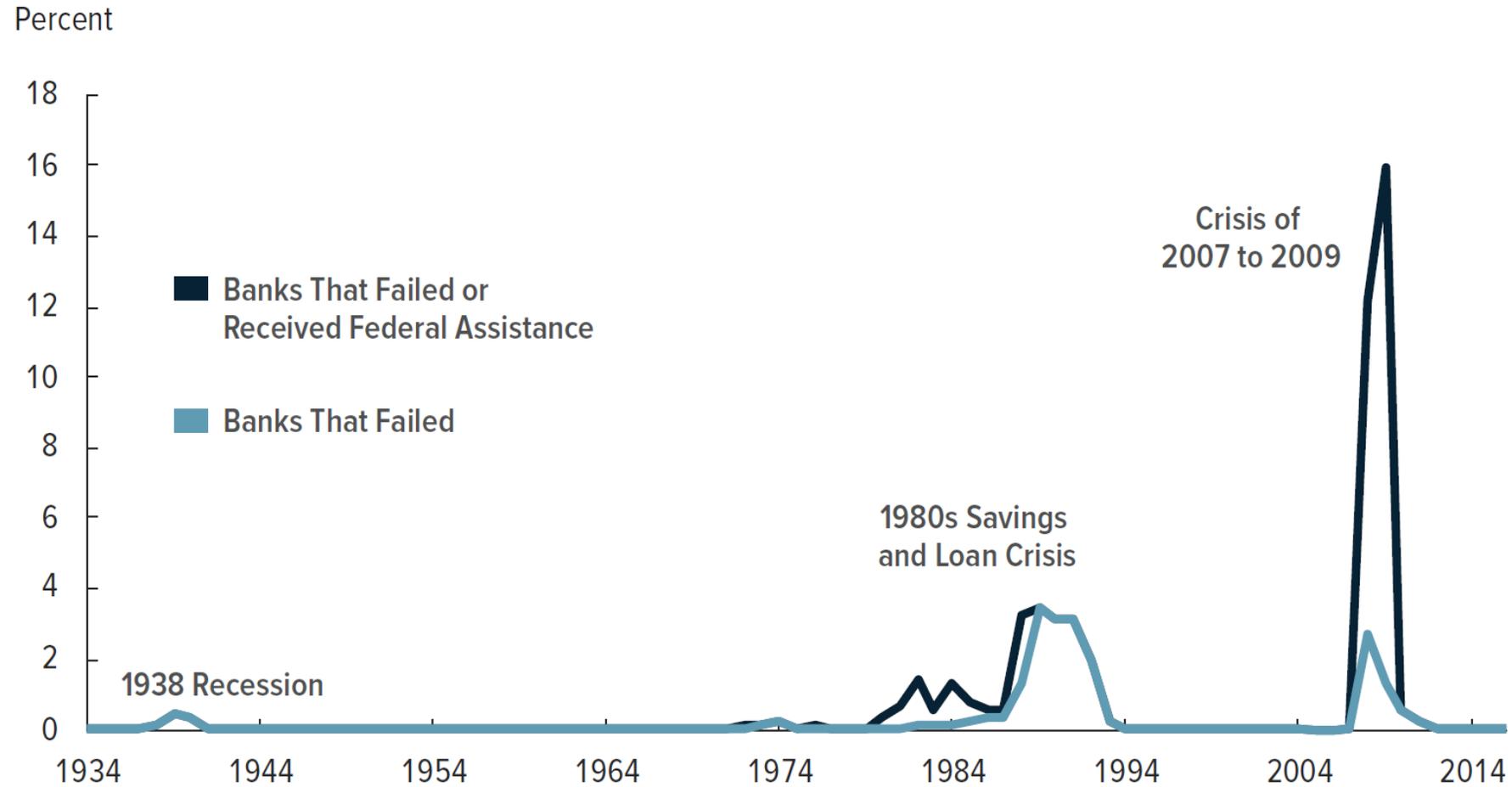
*

-20 0 20 40 60 80 100 120 140

Decrease in the Deficit ← → Increase in the Deficit

* = between -\$500 million and \$500 million.

Rates at Which Banks Failed or Received Federal Assistance, 1937 to 2017



Direct Budgetary Effects of Three Illustrative Policies, 2020 to 2029

Billions of Dollars

	Increase or Decrease (-) in Noninterest Outlays	—	Increase or Decrease (-) in Revenues	=	Total Increase or Decrease (-) in Deficits
Lower Capital Requirements by 1 Percentage Point	*		*		*
Eliminate Orderly Liquidation Authority	-20		-6		-14
Repeal the Ability-to-Repay Mortgage Rule	*		*		*

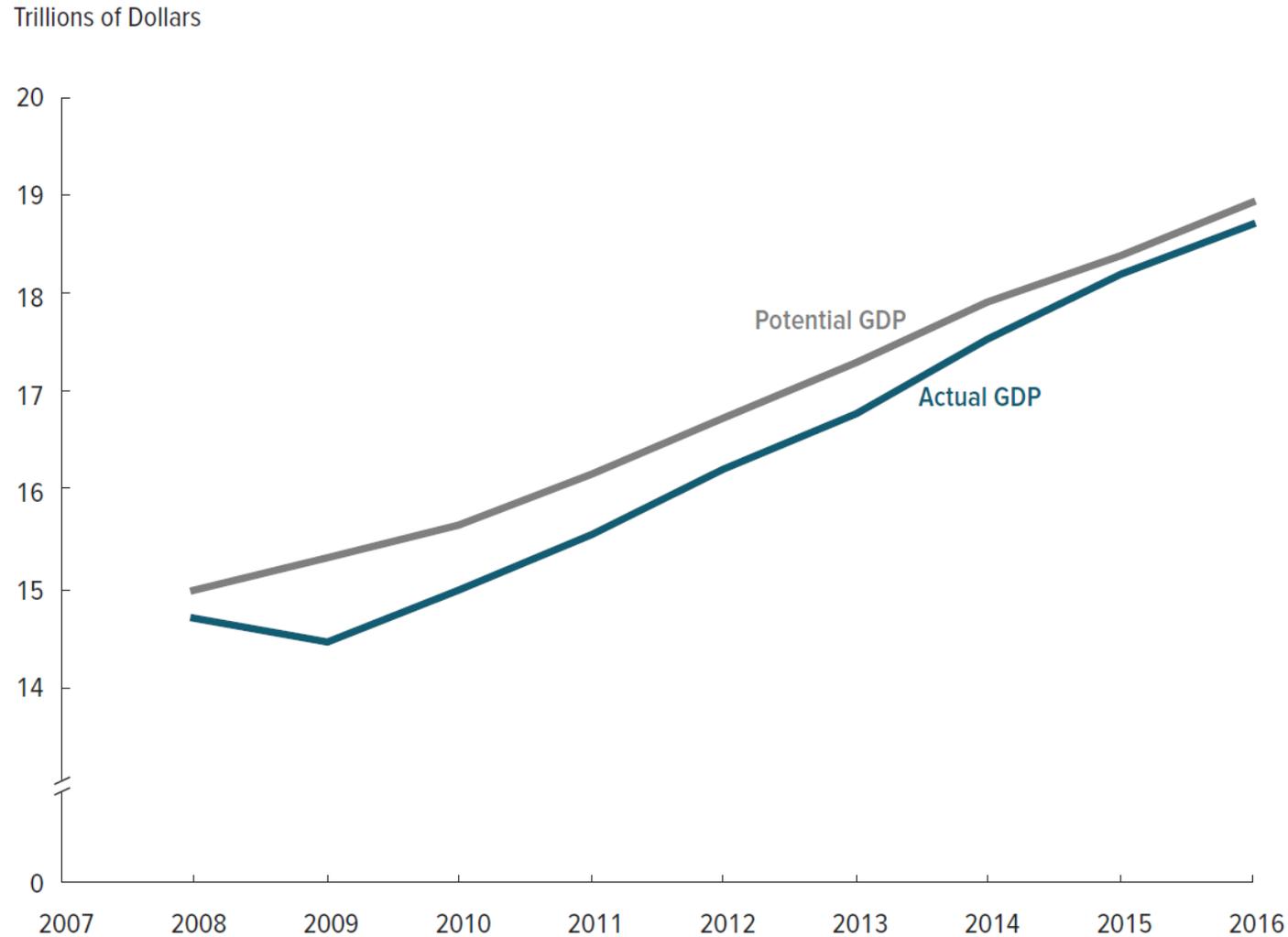
* = between -\$500 million and zero.

Increase in GDP Projected to Stem From the Illustrative Policies Under Baseline Economic Conditions, 2020 to 2029

Billions of Dollars

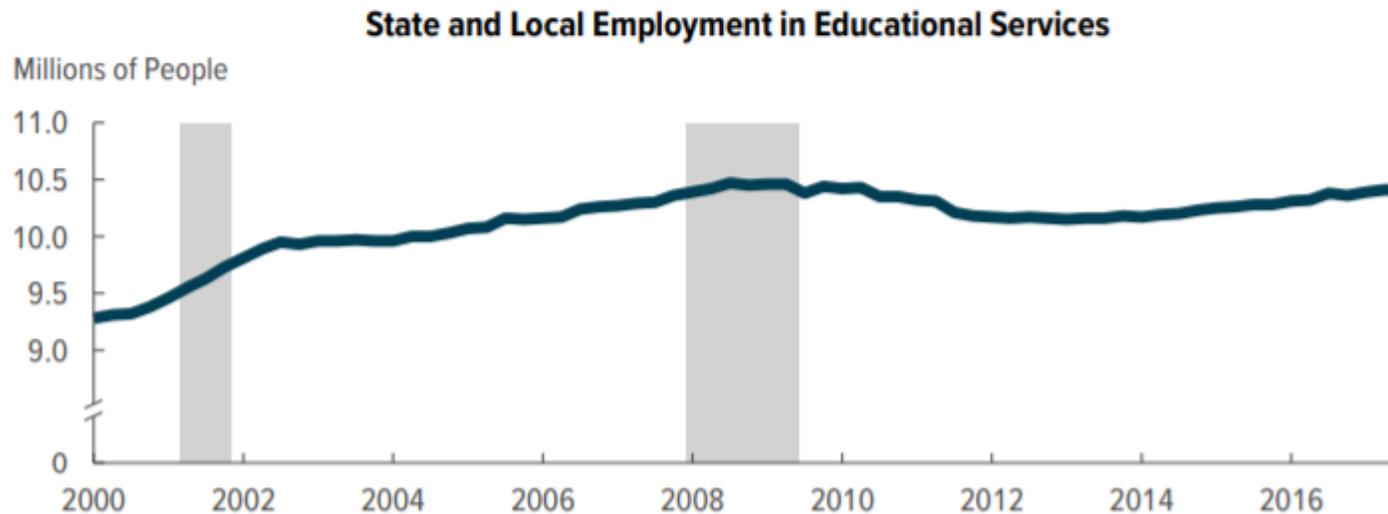
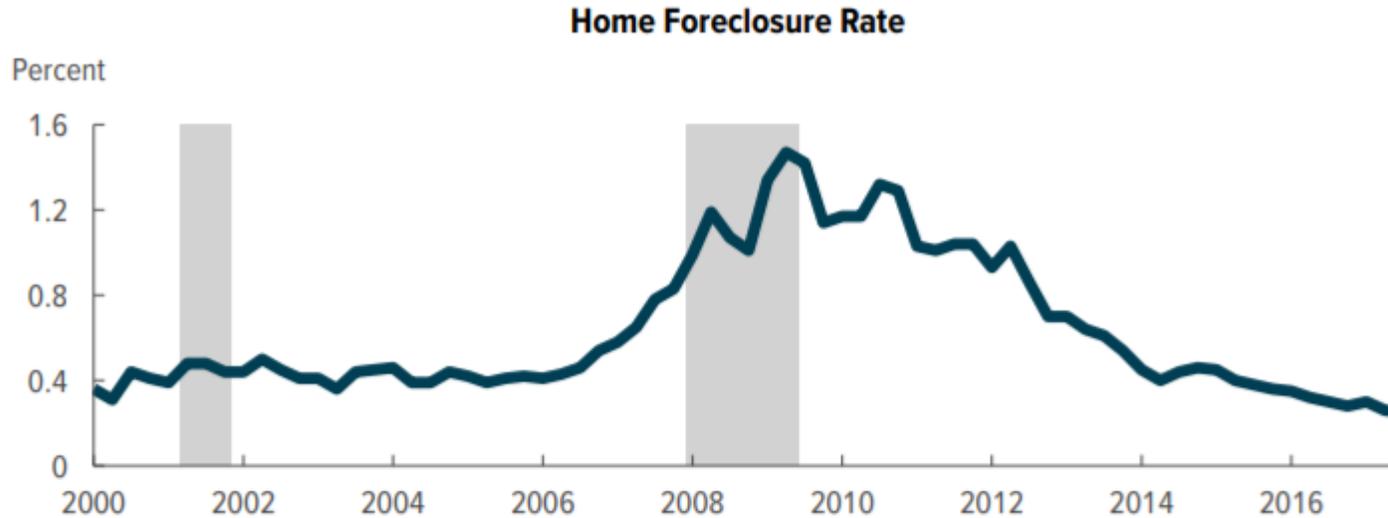
	Lower Capital Requirements by 1 Percentage Point	Repeal the Ability-to-Repay Mortgage Rule
2020	0.4	0
2021	2.7	2.6
2022	2.3	5.9
2023	1.4	5.0
2024	1.1	2.8
2025	1.5	3.4
2026	1.9	4.6
2027	2.3	5.7
2028	2.8	6.8
2029	3.2	8.0

Actual and Potential GDP During and After the Financial Crisis of 2007 to 2009

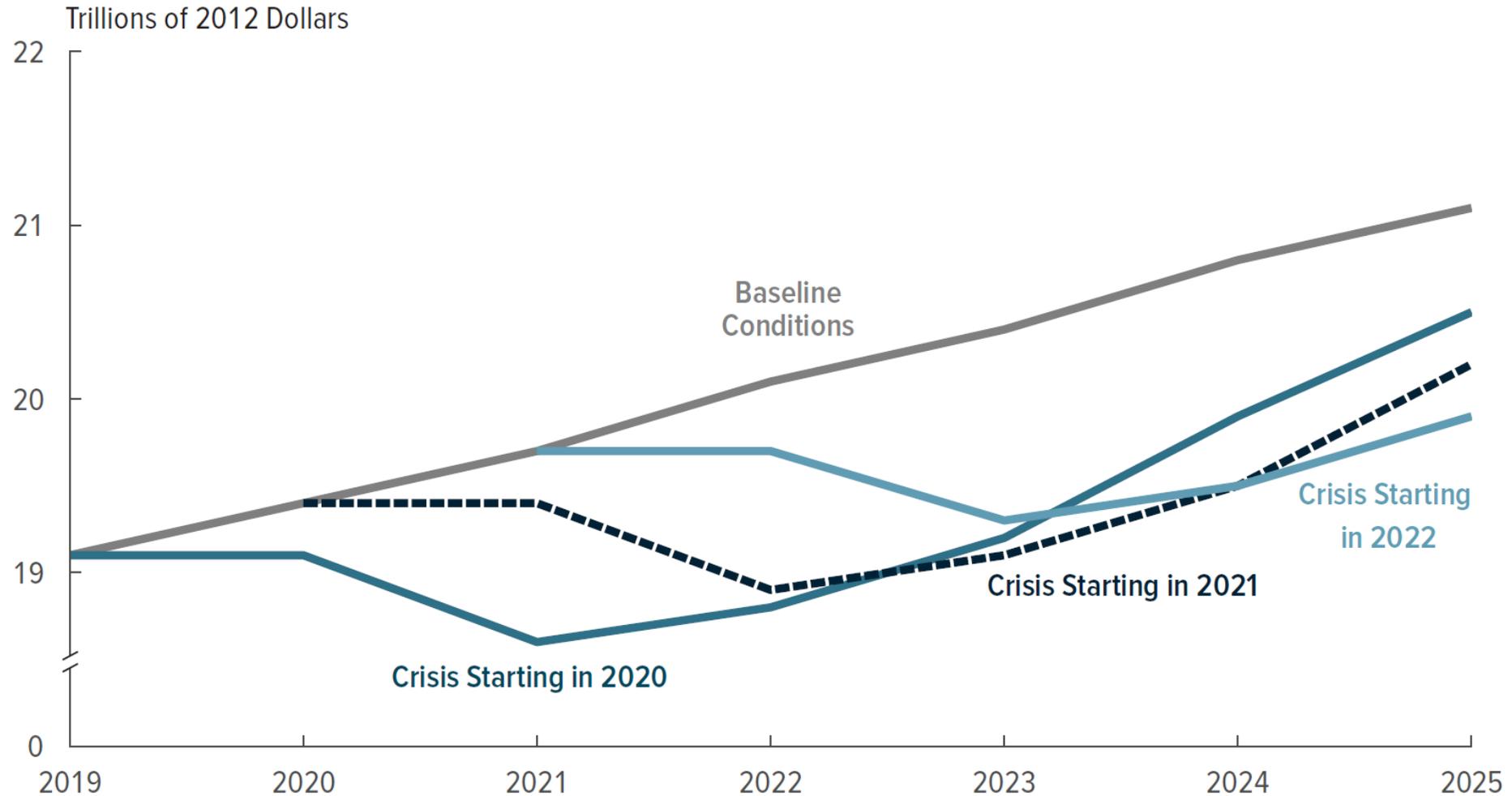


Potential GDP is CBO's estimate of the maximum sustainable output of the economy.

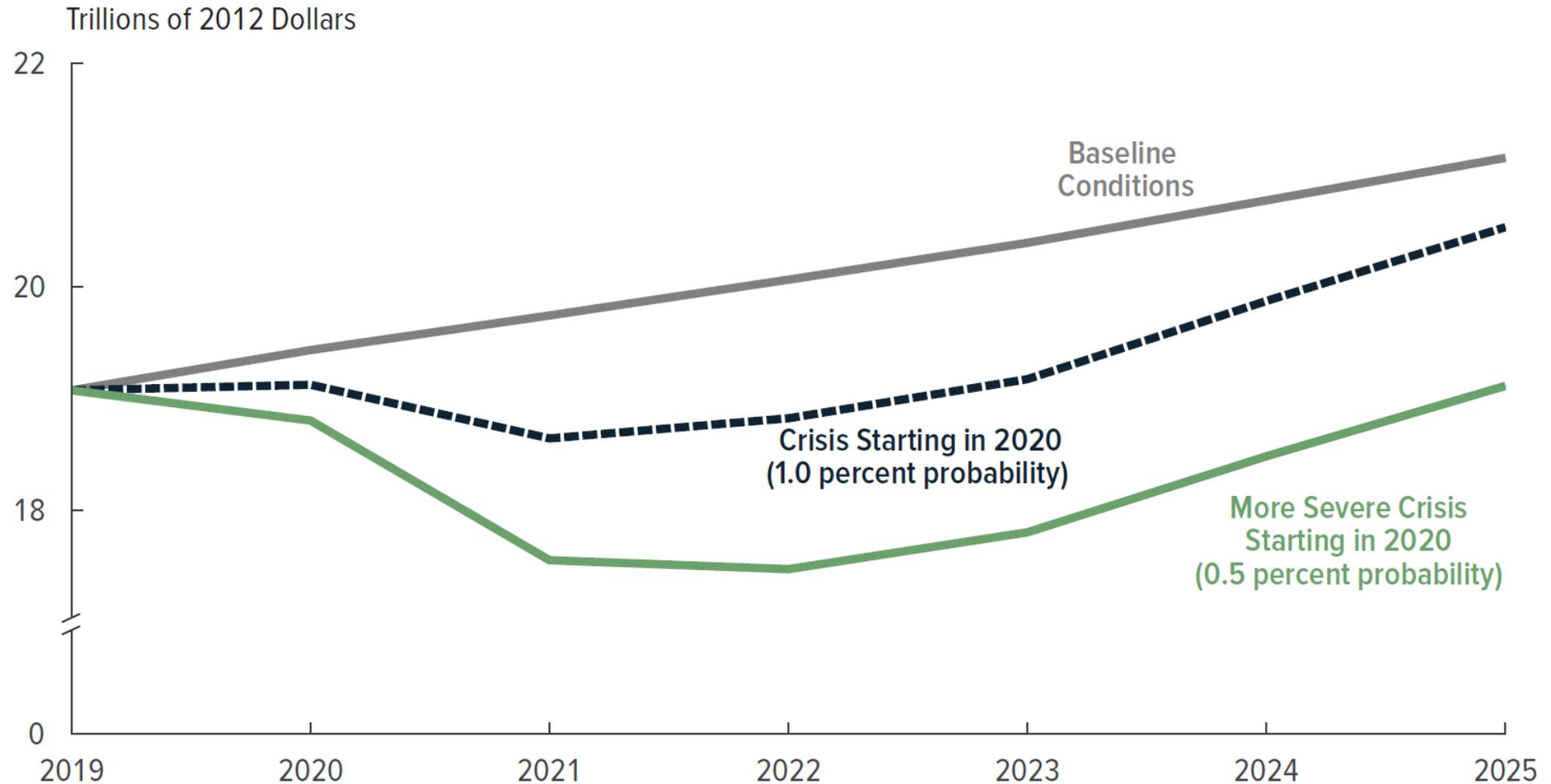
The Effects of the 2007–2009 Financial Crises on Households and on State and Local Services



CBO's Projections of Real GDP Under Baseline Economic Conditions and During Financial Crises



CBO's Projections of Real GDP Under Baseline Economic Conditions and During Financial Crises If Orderly Liquidation Authority Was Eliminated



Macroeconomic Feedback Under Baseline Economic Conditions, 2020 to 2029

Billions of Dollars	Lower Capital Requirements by 1 Percentage Point	Eliminate Orderly Liquidation Authority	Repeal the Ability-to-Repay Mortgage Rule
Effects on Revenues			
From change in financing mix	-18	0	0
From increase in gross domestic product	4	0	1
Total	<u>-14</u>	<u>0</u>	<u>1</u>
Effects on Outlays			
Noninterest outlays	1	0	0
Interest outlays	-1	0	0
Total	<u>0</u>	<u>0</u>	<u>0</u>
Increase or Decrease (-) in the Deficit	14	0	-1

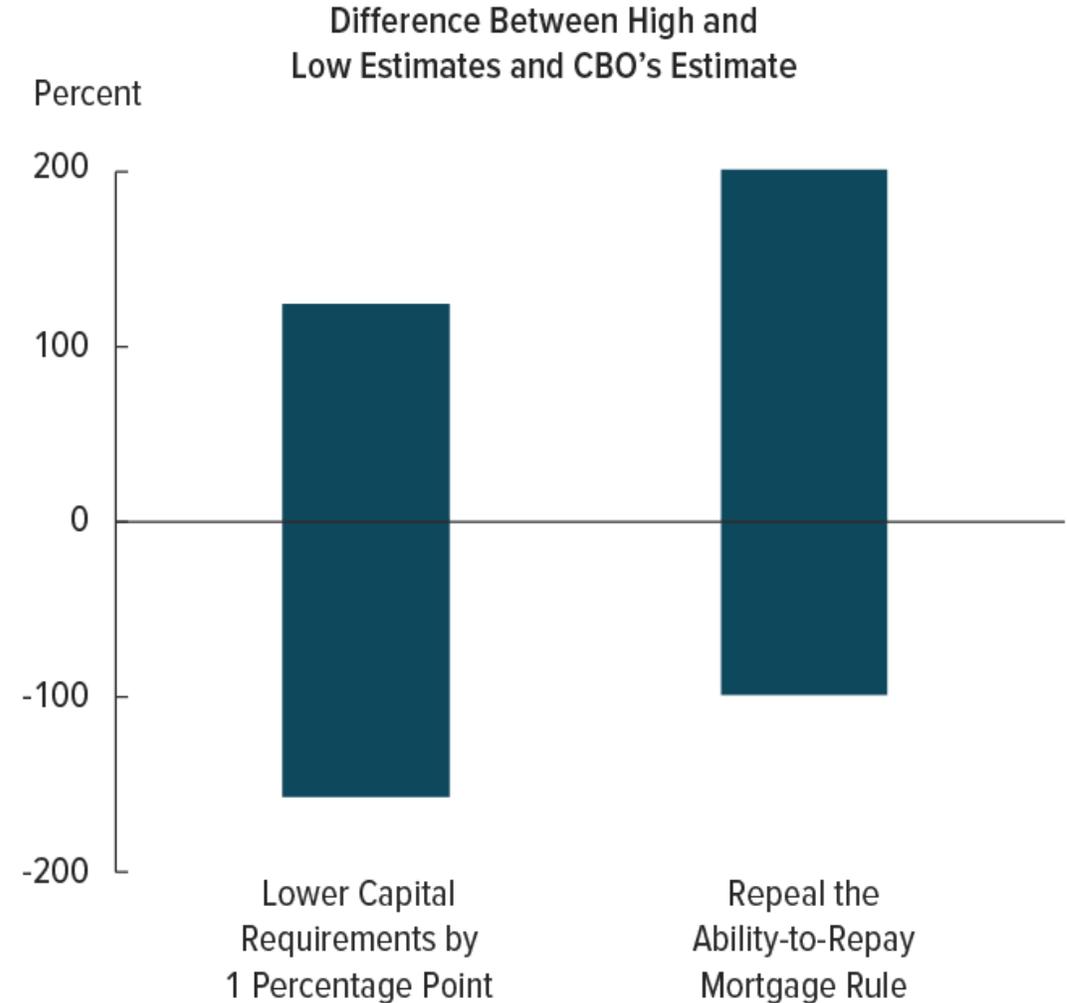
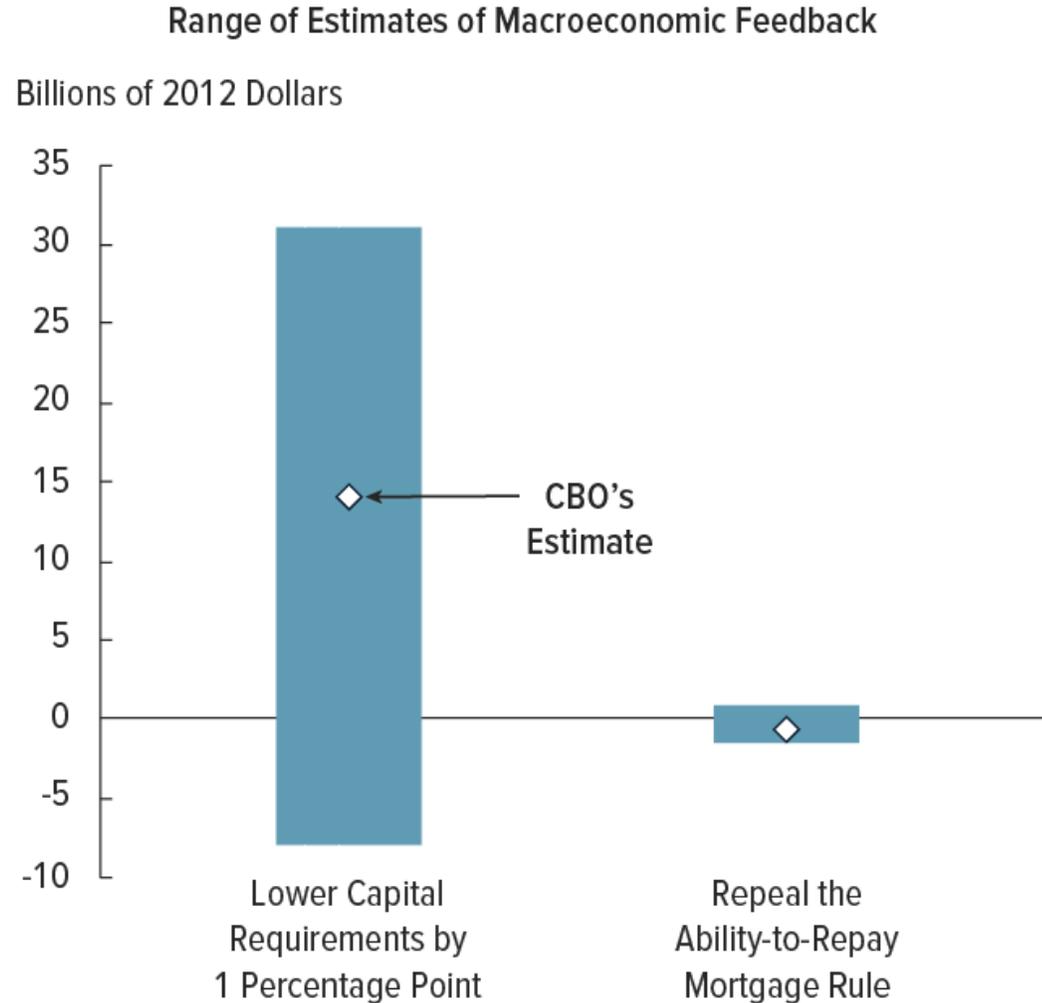
CBO estimates that the effects of eliminating orderly liquidation authority on risk-taking would be offsetting; thus, the agency projects that implementing that policy would have no effect on the economy under baseline conditions.

Macroeconomic Feedback Stemming From the Illustrative Policies’ Effects on the Likelihood and Severity of Financial Crises, 2020 to 2029

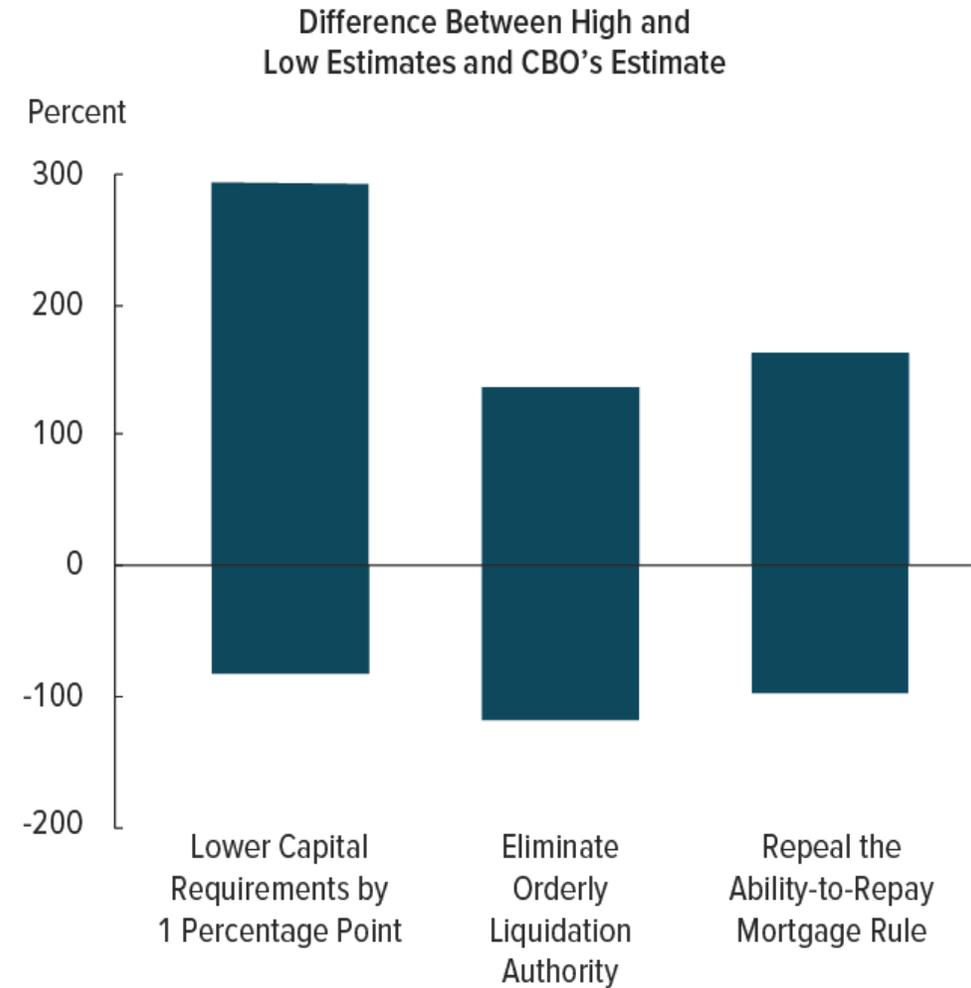
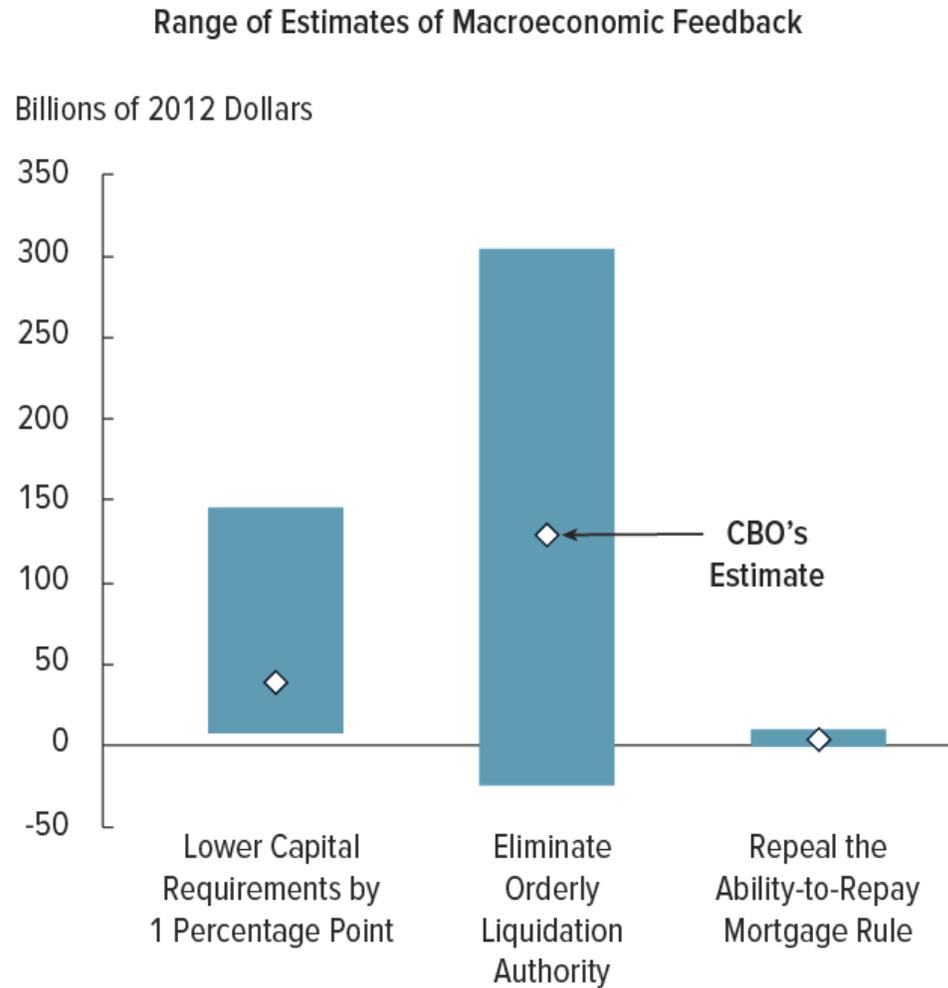
Billions of Dollars

	Lower Capital Requirements by 1 Percentage Point	Eliminate Orderly Liquidation Authority	Repeal the Ability-to-Repay Mortgage Rule
Effects on Revenues	-66	-141	-3
Effects on Outlays			
Noninterest outlays	1	7	0
Interest outlays	-31	-21	-2
Total	<u>-30</u>	<u>-14</u>	<u>-1</u>
Increase in the Deficit	37	128	2

Sensitivity of CBO's Estimates of the Illustrative Policies' Macroeconomic Feedback Under Baseline Economic Conditions, 2020 to 2029



Sensitivity of CBO's Estimates of the Macroeconomic Feedback Stemming From the Illustrative Policies' Effects on the Likelihood and Severity of Financial Crises, 2020 to 2029



Interactive Tool for Illustrating the Sensitivity of CBO's Projections

The screenshot displays an Excel spreadsheet with the following structure:

Parameter	Value		Lower Capital Requirements by 2 Percentage Points	Eliminate Orderly Liquidation Authority	Repeal the Ability-to-Repay Mortgage Rule
General Parameters					
Likelihood of Financial Crisis in Any Given Year	1.5 percent (central estimate)	Direct Budgetary Effects of the Three Illustrative Policies, 2020 to 2029			
Parameters for Capital Requirements		Billions of Dollars			
Change in Capital Requirements	1 Percentage Point Higher 1 Percentage Point Lower (central estimate) 2 Percentage Points Lower	Effects on Revenue	0	6	n.a.
Change in Bank Failure Rate for Each Percentage-Point Change in Capital	20 percent (central estimate)	Effects on Non-Interest Outlays	0	20	0
Change in Deposit Insurance Premium Rate for Each Percentage-Point Change in Capital	0.3 basis points (central estimate)	Increase or Decrease (-) in the Deficit	0	14	0
Effect on Tax Liability of a 1 Percentage Point Increase in Debt	-0.8 basis points (central estimate)	Macroeconomic Feedback Under Baseline Economic Conditions, 2020 to 2029			
Parameters for Orderly Liquidation Authority		Billions of Dollars			
Percentage of Financial Crises that Would be More Severe if Orderly Liquidation Authority Was Eliminated	33.3 percent (central estimate)	Effects on Revenues			
Effect of Orderly Liquidation Authority on Likelihood of Financial Crisis	0 percent (central estimate)	From change in financing mix	-36	n.a.	n.a.
Parameters for Ability to Repay Rules		From increase in gross domestic product	8	n.a.	1
Change in Bank Failure Rate if the Ability-to-Repay Rule was Eliminated	1 percent (central estimate)	Total	-27	n.a.	1
Effective Tax Rate on Services From Owner-Occupied Housing	4 percent (central estimate)	Effects on Outlays			
		Noninterest outlays	1	n.a.	0
		Interest outlays	-2	n.a.	0
		Total	-1	n.a.	0
		Increase or Decrease (-) in the Deficit	26	n.a.	-1
Macroeconomic Feedback Stemming From the Illustrative Policies' Effects on the Likelihood and Severity of Future Financial Crises, 2020 to 2029					
		Billions of Dollars			
		Effects on Revenue	-146	-142	-3
		Effects on Outlays			
		Noninterest Outlays	3	7	0
		Interest Spending	-69	-21	-2
		Total	-66	-14	-1
		Increase or Decrease (-) in the Deficit	80	128	2

Computer Code Used to Generate the Estimates

The image shows the Spyder Python IDE interface. The main editor window displays a Python script named `model.py`. The script defines a `Model` class with various attributes and methods for calculating financial estimates. The IPython console at the bottom shows the execution of the script, displaying the Python version and the IPython version.

```

1 """
2 Module contains the financial regulation Model object.
3 """
4
5 from finreg_classes import Macro_Experiment, Policy, CL_Baseline
6 from functions import likelihood_matrix, mkt_val_deposit_insurance, primary_deficit, total_deficit
7 import pandas as pd
8 from math import log, exp
9
10
11 class Model:
12     """
13     The Model class contains the input data used in the estimation, which is stored in
14     subsidiary objects of the Macro_Experiment and CL_Baseline classes.
15
16     Attributes:
17         CL: The Current Law projections
18         CR: The Capital Requirement projections
19         ML: The Mortgage Loosening projections
20         MC: The Moderate Crisis projections
21         SC: The Severe Crisis projections
22
23     Methods:
24         __init__(inputpath): Initiatlize an instance of the model and load all
25         input data from the specified inputpath
26
27         run(Parameters): Runs the model and generates the tables.
28     """
29
30 def __init__(self, input_path):
31
32     # KP: Why are these constructed as dictionaries?
33
34     # The macro projections for the capital requirements were based on a five basis
35     # point reduction in borrowing costs
36     CRdict = {'Basis Points': -5}
37
38     # The "ML" macroeconomic projections were developed based on a 5 percent
39     # change in origination volume. The policy of repealing Ability to Repay
40     # rule, however, was estimated to raise origination volumes by 2 percent.
41     # The factor scales the macroeconomic projections to be consistent with that
42     # increase
43     MLdict = {'Origination Factor': 0.4}
44
45     self.CL = CL_Baseline("May 2019 Baseline", input_path + "CL")
46
47     self.CR = Macro_Experiment("Lower Capital Requirements by One Percentage Point", input_path + "CR", CRdict)
48     self.ML = Macro_Experiment("Repeal Ability-to-Repay Rules", input_path + "ML", MLdict)
49
50     self.MC = Macro_Experiment("Moderate Crisis Scenario", input_path + "MC", {})
51     self.SC = Macro_Experiment("Severe Crisis Scenario", input_path + "SC", {})
52
53     self.CR.CalculatePrimary()
54     self.CR.CalculateDeficit()
55     self.CR.CalculateDeltas(self.CL)
56
57     self.ML.CalculatePrimary()

```

The IPython console output shows:

```

Python 3.7.1 (default, Dec 10 2018, 22:54:23) [MSC v.1915 64 bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 7.2.0 -- An enhanced Interactive Python.

In [1]:

```

The status bar at the bottom indicates: Permissions: RW | End-of-lines: CRLF | Encoding: UTF-8-GUESSED | Line: 1 | Column: 1 | Memory: 49 %

About This Document



The slides from this presentation were drawn from the report *Financial Regulation and the Federal Budget* (September 2019). That report, the interactive tool, and the computer code used to generate the estimates are available on CBO's website at www.cbo.gov/publication/55586.