

# The Budgetary and Economic Effects of S. 2488, the Raise the Wage Act of 2023

DECEMBER | 2023

If enacted in April 2024, the Raise the Wage Act of 2023 (S. 2488, as introduced on July 25, 2023) would raise the federal minimum wage, in annual increments, to \$17 per hour by July 2029 (see Table 1). That amount would then be adjusted to increase at the same rate as median hourly wages. In this report, the Congressional Budget Office presents its estimates of the bill's effects on the federal budget and the economy.

CBO's estimates of the budgetary effects are as follows (see Table 2 on page 4):

- The cumulative budget deficit over the 2024–2033 period would increase by \$46 billion. Increases in annual deficits would be smaller before 2029, as the minimum-wage increases were being phased in, than in later years.
- Higher prices for goods and services—stemming from the higher wages of workers who are paid at or near the minimum wage (such as workers who provide long-term health care)—would contribute to increases in federal spending.
- Changes in employment and in the distribution of income would increase spending for some programs (such as unemployment compensation), reduce spending for others (such as nutrition programs), and reduce federal revenues (on net).
- The largest spending increases would be for the government's major health care programs and unemployment compensation; the largest revenue decreases would be from income taxes.

Those estimates were developed using CBO's conventional approach to estimating the costs of proposed legislation. In particular, they incorporate the assumption that nominal gross domestic product (GDP)—that

is, GDP with no adjustment to remove the effects of inflation—would not change. As a result, total income in the economy would be roughly unchanged.

Underlying the budgetary estimates are CBO's projections of how pay would change for workers directly or potentially affected by an increase in the minimum wage—that is, people who otherwise would have been paid hourly wages that were less than the proposed new minimum or slightly above it. In addition, CBO considered how changes in pay would affect the number of people who are employed. Among CBO's findings:

- From 2024 to 2033, the cumulative pay of affected workers would increase, on net, by \$151 billion—representing an increased labor cost for businesses that would be considerably larger than the net effect on the budget deficit during that period.
- That net increase would result from higher pay (\$238 billion) for people who were employed at higher hourly wages under the bill, partially offset by lower pay (\$86 billion) because of reduced employment under the bill.

In an average week in 2029, the year when the minimum wage would reach \$17 per hour, 8.9 million workers whose wages would otherwise be below \$17 per hour would be directly affected; many of the 9.7 million workers whose wages would otherwise be slightly above that wage rate would also be affected. Specifically, workers and their families would be affected in the following ways:

• Employment would be reduced because employers would respond by reducing their workforces. As a result, 0.7 million additional workers (or 0.4 percent of the overall workforce) would be jobless, according to CBO's average (or mean) estimate.

Table 1.

# Federal Minimum Wages Under S. 2488, the Raise the Wage Act of 2023

Date	Federal Min	Federal Minimum Wage					
July 1, 2024	\$9.50						
July 1, 2025	\$11.00						
July 1, 2026	\$12.50						
July 1, 2027	\$14.00						
July 1, 2028	\$15.50						
July 1, 2029	\$17.00						
July 1, 2030, and later	\$17.00	plus an indexing adjustment <sup>a</sup>					

Data source: Congressional Budget Office.

CBO analyzed the Raise the Wage Act of 2023 as introduced in the Senate on July 25, 2023. This analysis incorporates the assumption that the bill will be enacted at the end of April 2024.

Under current law, the federal minimum wage is \$7.25.

- Each year, as a result of the indexing adjustment, the minimum wage would equal the previous year's value plus the annual percentage increase, if any, in the median hourly wage of all employees.
- Because wages would increase for those workers who remained employed, the number of people in poverty would be reduced by 0.4 million.

CBO also estimated the effects of the Raise the Wage Act of 2023 using an alternative method—referred to as dynamic analysis—that allows nominal GDP to change. Under that method, CBO finds, the bill would increase the deficit by \$59 billion over the 2024–2033 period. That amount includes an increase of \$14 billion in net outlays for interest that would stem from the estimated effects of higher interest rates and changes in inflation under the bill. Those effects are not included in CBO's conventional analysis.

This report provides the following details about the Raise the Wage Act of 2023 and CBO's estimates of its effects on federal spending and revenues:

- Background on the bill;
- Basis of the estimate;
- Effects on direct spending for major health care programs;<sup>1</sup>
- Direct spending, often called mandatory spending, is generally governed by statutory criteria and is not normally constrained by the annual appropriation process.

- Effects on direct spending for unemployment compensation;
- Effects on direct spending for nutrition programs;
- Effects on direct spending for Social Security;
- Effects on other direct spending;
- Effects on revenues;
- Effects on discretionary outlays for wages of federal workers;<sup>2</sup>
- Effects on net spending for interest; and
- Uncertainty surrounding the budgetary estimates.

The report also provides the following information about the estimated economic effects underlying those estimates and about CBO's analytic methods:

- Effects on employment;
- Effects on the wages of affected workers;
- Effects on the distribution of family income;
- Effects on real output (that is, output adjusted to exclude the effects of inflation);
- Effects on prices;
- Effects on the distribution of labor and capital income;
- Effects on interest rates;
- Effects on employment and income, by section, of the Raise the Wage Act of 2023; and
- Comparisons with CBO's February 2021 analysis.

Finally, the report explains how CBO's results would change if dynamic analysis was used.

# Background on the Raise the Wage Act of 2023

For this report, CBO analyzed the budgetary and economic effects of the Raise the Wage Act of 2023, which would take effect on the first day of the third month after the date of enactment. If the bill was enacted in April 2024, the minimum wage would increase by a set amount each year, starting on July 1, 2024, until

Discretionary spending is controlled by appropriation acts that
provide funding or otherwise specify how much money can be
obligated for certain government programs in specific years. Such
appropriations fund a broad array of government activities.

it reached \$17 in July 2029. In subsequent years, an increase would be tied to the annual percentage increase, if any, in the median hourly wage of all employees.<sup>3</sup> The bill's provisions would cover most low-wage workers, but not the self-employed, casual babysitters, or certain seasonal workers.

The bill would also increase the minimum wage for newly hired teenagers and disabled workers, and it would increase the share of the minimum wage that employers must pay tipped workers. (The minimum wage for those workers has long differed from that for other workers. Tipped workers are those whose compensation regularly includes at least \$30 a month in gratuities.<sup>4</sup>)

#### **Basis of the Estimate**

DECEMBER 2023

All of the estimates in this report are relative to the baseline budget projections that CBO published in May 2023.5 (CBO's baseline projections incorporate the assumption that current laws governing federal taxes and spending generally remain unchanged.) Those projections, in turn, are based on the agency's economic forecast that was released in February 2023.6 For the most part, CBO's estimates are consistent with the agency's conventional approach to estimating the costs of legislation (see Table 2).7 In particular, they reflect the assumption that nominal GDP would not change. As a result, total income would be roughly unchanged. (That contrasts with the estimates presented in the

- The bill references "the median hourly wage of all employees as determined by the Bureau of Labor Statistics," which defines the median hourly wage as "the estimated 50th percentile of the distribution of wages based on data collected from employers in all industries; 50 percent of workers in an occupation earn less than the median wage, and 50 percent earn more than the median wage." Bureau of Labor Statistics, "Occupational Employment and Wage Statistics: About May 2022 National, State, Metropolitan, and Nonmetropolitan Area Occupational Employment and Wage Estimates" (April 25, 2023), www.bls.gov/oes/current/oes\_abo.htm.
- Department of Labor, "Fact Sheet #15: Tipped Employees Under the Fair Labor Standards Act (FLSA)," (accessed December 15, 2023), https://tinyurl.com/bddhv7m6.
- 5. See Congressional Budget Office, An Update to the Budget Outlook: 2023 to 2033 (May 2023), www.cbo.gov/ publication/59096.
- See Congressional Budget Office, The Budget and Economic Outlook: 2023 to 2033 (February 2023), www.cbo.gov/ publication/58848.
- 7. See Congressional Budget Office, CBO Describes Its Cost-Estimating Process (April 2023), www.cbo.gov/publication/59003.

section titled "How CBO's Results Would Change Under Dynamic Analysis.")

The set of effects incorporated in this estimate is more extensive than the set incorporated in most of CBO's cost estimates. That is because the effects on economic behavior that would affect the federal budget would be broader for minimum-wage increases than for most policies that CBO examines. Furthermore, because the effects of the bill are complex, many of the estimates shown in Table 2 and described below are the net effect of the multiple ways in which the bill would affect each program or revenue source.

#### Effects on Spending for **Major Health Care Programs**

The Raise the Wage Act of 2023 would boost spending for the major federal health care programs by an estimated \$27 billion over the 2024-2033 period. Some of the effects would involve workers employed in the home health care and nursing care industries. CBO projects that if current laws did not change, roughly 2.7 million such workers would be in the labor force by 2029, and a disproportionate share, relative to all workers, would earn less than \$17 per hour.8 Federal programs, such as Medicaid and Medicare, pay for much of the care supplied by those industries. The effect of increases in the prices of health care stemming from a higher minimum wage is a key factor contributing to an increase in spending for those programs.

Changes in the distribution of income would also affect spending for federal health care programs. Those changes would reduce spending for Medicaid (because fewer people would qualify for such benefits) and increase spending for subsidies for health insurance obtained through the marketplaces established by the Affordable Care Act (because more people would qualify for such benefits).

Medicaid and CHIP. Under the bill, Medicaid spending would increase because the effects of increases in the price of health care services would outweigh a net decrease in enrollment. Prices, such as those for longterm services and supports and for medical services, would increase as a result of negotiations among states, providers, and managed care insurance companies that

The labor force is the number of people age 16 or older in the civilian noninstitutionalized population who have jobs or who are available for work and are actively seeking jobs.

Table 2.

<b>Estimated Budgetary</b>	LIIECL	3 UI 3.	2700	, uie	KdISE	tne w	age A	CL OI 2	2023			
Millions of dollars												
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2024– 2028	2024- 2033
				Increases	or decre	ases (-) ir	n direct sp	ending (	outlays)			
Major health care programs												
Medicaid	236	542	1,090	738	1,726	1,989	1,071	1,465	2,416	2,682	4,332	13,955
CHIPª	28	73	164	175	323	393	561	720	-1,728	0	763	709
Marketplace subsidies <sup>b</sup>	*	121	49	342	215	125	949	783	1,636	2,494	727	6,714
Medicare	48	86	200	313	441	579	855	905	978	1,395	1,088	5,800
Unemployment compensation	20	185	430	740	1,105	1,840	2,710	2,790	2,580	2,585	2,480	14,985
Nutrition programs												
SNAP	-1	-70	-190	-380	-640	-810	-1,040	-1,000	-1,070	-1,120	-1,281	-6,321
Child nutrition programs	*	*	1	1	-8	-26	-24	-8	4	13	-6	-47
Social Security (off-budget)	*	10	-126	-73	19	151	429	845	1,312	1,831	-170	4,398
Other												
Earned income, child,												
and other tax credits	1	7	19	10	-45	-132	-349	-492	-551	-600	-8	-2,132
Supplemental Security Income	*	3	10	23	43	68	102	131	143	141	79	664
Federal civilian and military retirement	0	2	5	8	14	17	25	37	45	51	29	204
Veterans' disability	U	2	3	O	14	17	23	37	43	31	23	20-
compensation and pension												
programs	0	2	5	9	15	21	30	43	55	63	31	243
Student loans <sup>c</sup>	-60	-5	-5	*	10	20	35	25	15	5	-60	40
Other retirement programs <sup>d</sup>	0	*	*	1	1	2	2	3	4	5	2	18
Postal Service (off-budget) <sup>e</sup>	*	*	*	*	*	*	0	0	0	0	*	(
Total changes in												
direct spending	272	956	1,652	1,907	3,219	4,237	5,356	6,247	5,839	9,545	8,006	39,230
On-budget	272	946	1,778	1,980	3,200	4,086	4,927	5,402	4,527	7,714	8,176	34,832
Off-budget	*	10	-126	-73	19	151	429	845	1,312	1,831	-170	4,398
	Increases or decreases (-) in revenues											
Revenues from income and												
payroll taxes <sup>f</sup>	Г4	200	CEO	1 201	2 225	2 200	2 772	2.002	2.020	1 200	4 507	17.00
On-budget Off-budget	-51 7	-300 62	-650	-1,361	-2,225 857		-3,772			-1,206		,
-												
Marketplace subsidies <sup>b</sup>	0	*	-32	-32	-204	-333	-412	-622	-597	-566	-268	-2,798
Total changes in revenues	-44	-238	-484	-980	-1,572	-2,030	-1,984	-1,068	158	1,197	-3,318	-7,045
On-budget	-51	-300	-682	-1,393	-2,429	-3,623	-4,184	-3,615	-2,633	-1,772	-4,855	-20,682
Off-budget	7	62	198	413	857	1,593	2,200	2,547	2,791	2,969	1,537	13,637
	Net increase or decrease (-) in the deficit from changes in direct spending and revenues											
Effect on the deficit	246	1 104	2,136		_		-			0 240	11,324	46,275
On-budget	<b>316</b> 323	<b>1,194</b> 1,246	<b>2,136</b> 2,460	<b>2,887</b> 3,373	<b>4,791</b> 5,629	<b>6,267</b> 7,709	<b>7,340</b> 9,111	<b>7,315</b> 9,017	<b>5,681</b> 7,160	•	13,031	<b>46,27</b> 5 55,514
Off-budget	323 -7	-52	-324	-486	-838	-1,442	-1,771	-1,702	-1,479		-1,707	-9,239
on budget	,	52	J27						1,773	1,130	1,707	5,25
					Increases	in discre	-	_				
Federal workers' pay	*	*	*	*	1	1	2	2	2	2	1	10

Continued

Table 2. Continued

#### Estimated Budgetary Effects of S. 2488, the Raise the Wage Act of 2023

Data source: Congressional Budget Office.

CBO analyzed the Raise the Wage Act of 2023 as introduced in the Senate on July 25, 2023. This analysis incorporates the assumption that the bill will be enacted at the end of April 2024.

Components may not add up to totals because of rounding.

Off-budget effects are designated by law as excluded from budget totals. The revenues and outlays of the two Social Security trust funds (the Old-Age and Survivors Insurance Trust Fund and the Disability Insurance Trust Fund) and the transactions of the Postal Service are off-budget.

All effects in this table are on-budget unless otherwise noted.

This table does not include increases in net outlays for interest on federal debt (as projected under current law) that would stem from estimated changes to interest rates and inflation under the bill.

CHIP = Children's Health Insurance Program; SNAP = Supplemental Nutrition Assistance Program; \* = between -\$500,000 and \$500,000.

- a. In CBO's baseline budget projections (which incorporate the assumption that current law would generally remain unchanged), funding for CHIP would be insufficient to fund benefits after 2031. CBO estimates that higher spending under the bill would cause funding to be insufficient sooner, leading to an estimated reduction in spending in 2032.
- b. Marketplace subsidies are premium tax credits for health insurance purchased through the marketplaces established by the Affordable Care Act.
- c. Costs for federal student loan programs are estimated using the procedures established in the Federal Credit Reform Act of 1990. Changes to the estimated costs of outstanding loans are shown in 2024, the assumed year of enactment.
- d. Includes retirement programs for the Coast Guard and for workers in railroads, the Foreign Service, and the Public Health Service.
- e. In CBO's baseline projections, the Postal Service (USPS) exhausts its available budgetary resources in 2029 and consequently reduces its costs in that year to the amount that CBO estimates it would collect in receipts. Because this legislation would increase the costs of the USPS by less than \$500,000 in several years but would not increase its receipts, CBO estimates that the USPS would be forced to reduce its expenses by an equal amount in 2029, resulting in no significant net cost to the agency over the 2024–2033 period.
- f. Includes changes to the earned income tax credit and the child tax credit. The revenue and outlay effects together represent a reduction of \$1,784 million for the earned income tax credit and an increase of \$354 million for the child tax credit. Also includes an increase in revenues that partially offsets the increase in outlays for unemployment compensation. States would increase their tax revenues to maintain a positive balance in their unemployment trust funds over time, and those revenues are reflected in the federal budget.
- g. Estimates are based on the assumption that appropriations of the necessary amounts would be provided in each year.

accounted for the higher labor costs facing health care providers. The number of Medicaid enrollees would decline as the income of some enrollees rose above the thresholds for Medicaid eligibility. That decline in enrollment would be partially offset by increased enrollment among people who lost employment because of the minimum-wage increase and thus became eligible for the program.

The effects on spending for the Children's Health Insurance Program (CHIP) would similarly reflect higher prices for medical services as well as a shift in enrollment from Medicaid to CHIP. That shift would occur because some families would become ineligible for Medicaid as their income increased and would enroll their children in CHIP, which has higher income thresholds for eligibility.

**Marketplace Subsidies.** A minimum-wage increase would boost federal subsidies for health insurance offered through the marketplaces established by the

Affordable Care Act and the Basic Health Program.<sup>9</sup> People who are lawfully present in the United States and who are in families with income between 100 percent and 400 percent of the federal poverty guidelines—commonly known as the federal poverty level, or FPL—are eligible for those subsidies (in the form of premium tax credits) if they are not eligible for public coverage such as Medicaid and do not have an affordable offer of employment-based coverage.<sup>10</sup> The American Rescue

- 9. States can establish a Basic Health Program intended primarily for people with income between 138 percent and 200 percent of the federal poverty guidelines; the federal government provides the state with funding equal to 95 percent of the marketplace subsidy for which an enrollee in the program would otherwise have been eligible. Only Minnesota and New York currently operate such programs.
- For a description of federal poverty guidelines, see Department of Health and Human Services, "U.S. Federal Poverty Guidelines Used to Determine Financial Eligibility for Certain Programs" (January 19, 2023), https://tinyurl.com/2767tvpa.

Plan Act of 2021 (Public Law 117-2) and the 2022 reconciliation act (P.L. 117-169) extended eligibility to people with income of more than 400 percent of the FPL through 2025.

Some workers whose wages increased under S. 2488 would be from lower-income families that, as their income increased, would gain eligibility for tax credits to cover part of their premiums. That change would cause net increases in enrollment in health insurance obtained through the marketplaces and in the number of people claiming premium tax credits to purchase such coverage. Those people would include some who became ineligible for Medicaid because of increases in their income and who, consequently, would use those tax credits instead, offsetting some of the reduction in spending that would stem from declines in Medicaid enrollment. (Those tax credits affect outlays as well as revenues because they are refundable and therefore can result in net payments from the federal government.)

Medicare. A higher minimum wage would increase Medicare spending because that program's payment rates for health care providers would be higher. In contrast with Medicaid payments, which are the result of negotiations among states, providers, and managed care insurance companies, many Medicare payments are calculated by taking base payment rates and updating them each year according to a set of statutory formulas. Those updates depend, in turn, on the value of various economic variables, such as price indexes, which are a measure of broad changes in prices. A higher minimum wage would change some of those variables, resulting in increased federal spending.

#### Effects on Spending for Unemployment Compensation

Federal spending for unemployment compensation would increase under the bill because more workers would be unemployed. That increase would be partially offset when states increased their tax revenues to maintain a positive balance in their unemployment trust funds. (Benefits paid out and tax revenues credited to state unemployment trust funds are reflected in the federal budget.) In a given year, any increase in spending for unemployment compensation would be offset by an increase in revenues that would eventually equal about 80 percent of the increased spending. Thus, the net effect on the deficit over time would equal about 20 percent of the increase in unemployment compensation. The

increases in revenues would occur several years later than the increases in spending, so the total deficit effect, including in the years after 2033, would be smaller than the deficit effect from 2024 to 2033. (See "Revenues from income and payroll taxes" in Table 2 and see the section of this report titled "Effects on Revenues.")

#### Effects on Spending for Nutrition Programs

Spending for the Supplemental Nutrition Assistance Program and child nutrition programs under the bill would decline, on net, because increases in income for low-income households would reduce both the number of beneficiaries and their average benefit amounts. Those effects would be partially offset by increases in enrollment stemming from reductions in employment and by increases in price indexes used to calculate benefit amounts.

# Effects on Spending for Social Security

Spending for Social Security would rise with a higher minimum wage, mainly because of increases in average benefits. Those benefits would increase in part because initial benefits are indexed to economywide average wages, which would be boosted by a higher minimum wage. In CBO's assessment, those benefits would also increase because raising the minimum wage would increase prices, which would in turn boost annual cost-of-living increases for Social Security recipients.

A minimum-wage increase would also affect Social Security spending in other ways—the net effects of which would be less significant. The reduction in employment resulting from a minimum-wage increase, for example, would induce some older workers to claim retirement benefits earlier than they would have otherwise and some workers with serious health conditions to claim disability benefits. (Social Security includes both kinds of benefits.) However, increases in earnings among low-wage workers would lead some people who otherwise would have claimed Social Security benefits to delay claiming them. Also, higher earnings would exert downward pressure on Social Security spending because, for some people who continue to work after claiming benefits, benefits are reduced when earnings increase.

Spending from the two Social Security trust funds—the Old-Age and Survivors Insurance Trust Fund and the Disability Insurance Trust Fund—is categorized

as off-budget (as are the program's revenues) because those budgetary accounts are designated by law as excluded from totals used for certain budget enforcement purposes.

#### Effects on Other Direct Spending

DECEMBER 2023

Other direct spending would be affected in a variety of ways. Such spending includes outlays for refundable tax credits, Supplemental Security Income (SSI), various retirement programs, certain programs for veterans, student loans, and the Postal Service (which is categorized as off-budget).

Higher labor earnings among low-wage workers would reduce spending on the refundable portion of the earned income tax credit (and have effects on revenues, which are discussed in the next section). The increase in prices resulting from a higher minimum wage would result in larger cost-of-living increases for benefits in various programs, including retirement programs, veterans' programs, and SSI. (Spending on SSI would also increase because some people who lost their jobs under the bill would newly enroll in SSI. Those increases would be partially offset by the effects of a boost to the average earnings of working SSI recipients, which would either lower their benefits or make them ineligible for benefits.)

Higher labor earnings also would increase the amounts repaid by borrowers of federal student loans who are enrolled in income-driven repayment plans. However, the reduction in costs from those larger payments would be more than offset over the 2024–2033 period by increased costs from higher interest rates, which would reduce the value to the federal government of future repayments of all student loans as calculated under the Federal Credit Reform Act of 1990.11

#### **Effects on Revenues**

The bill would reduce revenues, on net, from 2024 to 2033. That net effect would be the result of several factors that work in opposite directions. Although the estimates in Table 2 are based on total nominal income that would be roughly unchanged (reflecting the assumption that nominal GDP is held constant), labor income would increase and capital income would decrease. (Labor income consists of the wages that workers earn while employed. Capital income is income people receive from dividends, interest, a business, or farming.) Labor income tends to be more heavily taxed. Under the bill, income would also shift toward lower-income people and away from higher-income people. Revenues from payroll taxes for Social Security (which are categorized as off-budget) would increase. Other revenues would decline, on net, because lower-income people face lower tax rates, on average, than higher-income people do.

Several other factors, including higher labor earnings among low-wage workers, would tend to increase revenues. Those higher earnings would be subject to payroll taxes and individual income taxes and would reduce the net amount of refundable credits, such as the earned income tax credit. In addition, revenues would rise in response to increased spending on unemployment insurance as states increased their tax revenues to maintain a positive balance in their unemployment trust funds. Also, a higher economywide average wage would cause revenues to increase by raising the earnings threshold below which workers owe Social Security taxes.

Other factors would tend to decrease revenues. Higher labor costs would cause business income to be lower under the bill than under current law. (Business income is the income a person receives from a nonfarm business or professional practice.) Less business income in turn would reduce revenues from individual and corporate income taxes. In addition, higher inflation would cause revenues to decline because certain aspects of the individual income tax, such as tax brackets and standard deduction amounts, are adjusted for inflation. Revenues would also fall because of larger premium tax credits.

#### **Effects on Discretionary Outlays for Wages of Federal Workers**

CBO estimates that discretionary outlays would increase under the bill, provided that the necessary amounts were appropriated, because a small number of federal workers who are directly affected by the minimum-wage increase would receive a pay increase. (CBO also estimates that a small number of postal workers would receive a pay increase under the bill. Unlike spending for the wages of other federal workers, such spending for postal workers is not discretionary.)

<sup>11.</sup> Under that act, the costs of direct federal student loans are recorded in the budget as the present value of all cash flows associated with the loan, including disbursement of the loan to the borrower and principal and interest paid by the borrower. (A present value is a single number that expresses the flow of current and future income or payments in terms of an equivalent lump sum received or paid at a specific time.) The present value is calculated by discounting future cash flows using the rate on Treasury securities with similar terms to maturity.

#### **Effects on Net Spending for Interest**

A higher minimum wage would increase net spending for interest because interest rates would increase slightly under the bill, in CBO's assessment, and prices would increase as well (boosting the cost of inflation-protected securities). Following long-standing practice, those changes are not reflected in CBO's estimate of the bill's effects on the deficit that is shown in Table 2, nor are the interest costs stemming from the deficit increases that would result from the legislation. Net spending for interest largely depends on interest rates and on the amount of debt that the Treasury issues to the public.

# Uncertainty Surrounding the Budgetary Estimates

The effects of the Raise the Wage Act of 2023 on the budget and the economy are uncertain; consequently, there is a wide range of possible outcomes. For example, the effects depend on how quickly wages would rise in the absence of the policy and how employment would respond to higher wages. If wage growth in the absence of the policy proved slower than CBO currently projects, the bill's effects on employment would be larger, and the bill would probably increase the deficit by a larger amount. If wage growth in the absence of the policy proved faster than CBO currently projects, the opposite would be the case.

As another example, if employment proved less responsive to a higher minimum wage than CBO projects, a larger-than-projected number of people would be lifted out of poverty, which would tend to reduce spending on programs that provide services or benefits to them. If more people were employed than CBO projects, total wages for affected workers would be higher than CBO estimates, which would tend to increase federal spending affected by the prices of the goods and services those workers produce.

#### **Effects on Employment**

Increasing the minimum wage would affect employment in several ways:

Higher wages would increase employers' costs for producing goods and services. Employers would pass some of those increased costs on to consumers in the form of higher prices, and those higher prices, in turn, would lead consumers to purchase fewer goods and services. Employers would consequently produce fewer goods and services, and as a result, they would tend to reduce their employment of workers at all wage levels.

- When the cost of employing low-wage workers goes up, the relative cost of employing higher-wage workers or investing in machines and technology goes down. Some employers would therefore respond to a higher minimum wage by shifting their means of production toward using more machines and technology and reducing their employment of lowwage workers.
- In some circumstances, increasing the minimum wage could boost employment if employers had what is known as monopsony power—that is, bargaining power that would allow them to set wages below the rates that would prevail in a more competitive market.<sup>12</sup>
- Because increasing the minimum wage would shift income toward families with lower income, it would boost overall demand in the short term. Lowerincome families spend a larger proportion of any additional income on goods and services than do families with higher income. That increased demand would reduce the drop in employment for several years after the implementation of a higher minimum wage, CBO projects.

Taking those factors into account, CBO projects that, on net, the Raise the Wage Act of 2023 would reduce employment by increasing amounts over the 2024–2029 period. In 2029, when the minimum wage would reach \$17 per hour, employment would be reduced by 0.7 million workers (or 0.4 percent), according to CBO's average estimate. In 2024, most workers who would not have a job because of the higher minimum wage would still be looking for work and hence be categorized as unemployed; by 2029, however, half of the 0.7 million people who would be jobless because of the bill would have dropped out of the labor force, CBO estimates. Younger, less educated people would account for a disproportionate share of those reductions in employment.

This report focuses on the average (or mean) estimated change in employment because that measure captures the different effects of upward and downward variations from CBO's baseline projections. In particular, the growth of wages in CBO's baseline projections is uncertain. The budgetary effects in this analysis depend on

<sup>12.</sup> For a more detailed discussion, see Congressional Budget Office, "The Minimum Wage in Competitive Markets and Markets With Monopsony Power" (https://tinyurl.com/yxutebup), published as supplemental material for *The Effects on Employment and Family Income of Increasing the Federal Minimum Wage* (December 2019), www.cbo.gov/publication/55410.

whether the hourly wages of workers would otherwise be below the new minimum wage. Consequently, when variations from CBO's baseline projections push wages above the minimum wage, the effects differ from those that would occur if the opposite was the case. Thus, those effects are asymmetric—that is, they would not be the same size if wage growth was faster or slower (by the same amount) than in the baseline projections.

DECEMBER 2023

In addition, the responsiveness of employment to changes in the minimum wage is uncertain, and that uncertainty is also asymmetric. According to CBO's assessment of the research literature, responsiveness is more likely to be much greater than the median estimate—which is equally likely to be too high or too low-than it is to be much less. CBO has formed distributions of values both for wage growth and for responsiveness.13

To generate an average estimate, CBO simulated a distribution of possible changes in employment by drawing randomly from the distributions for wage growth and the responsiveness of employment.<sup>14</sup> That estimate averages the employment outcomes in the simulations.

For 2029, the average estimate is that employment would be reduced by 0.7 million workers; the median estimate is a reduction of 0.5 million workers. The average exceeds the median in this case because there is a significant possibility of large reductions in employment. CBO estimates that there is a one-third chance that the effect would be between about 0.5 million and 1.4 million workers and a one-third chance that it would be between zero and 0.5 million workers.<sup>15</sup>

#### **Effects on Wages of Affected Workers**

CBO estimated the amounts by which labor costs for businesses would change because of wages paid to people directly or potentially affected by an increase in the minimum wage—that is, people who otherwise would have been paid hourly wages that were less than or only

slightly above the proposed new minimums. Specifically, from 2024 to 2033, cumulative pay would increase by \$238 billion for people employed at higher hourly wages under the bill. That increase would be partially offset by a decline in pay of \$86 billion because employment would be reduced over that period. Therefore, the cumulative pay of directly and potentially affected workers would increase, on net, by \$151 billion.

CBO also estimated the number of affected workers who would experience those changes in pay. If the Raise the Wage Act of 2023 was not enacted, 8.9 million workers (or 6.1 percent of the projected labor force) would have wages below the minimum wages specified in the bill during an average week in 2029, CBO estimates. That is the number of workers who would be directly affected by the bill. (Most of them would receive higher wages, but some would become unemployed.) Also, 9.7 million workers during that average week would have wages that were only slightly higher than the proposed minimums; that is the number of workers who potentially would be affected. If the bill was enacted and the minimum wage rose, wages for many of those workers would increase as employers sought to retain some of the differences in pay that had previously existed among those workers.

#### Effects on the Distribution of **Family Income**

The net effect of the Raise the Wage Act of 2023 on income would vary considerably among families. In 2029, 0.4 million fewer people would have income below the FPL, CBO estimates. Families' real income (that is, income adjusted to exclude the effects of inflation) would change in three main ways:

- For families with workers earning wages at or near the federal minimum, real income would increase. That effect would be concentrated in the lowest quintile, or bottom fifth, of the distribution of family income.
- For families that lost employment because of the increase in the minimum wage, real income would fall. That effect would also be concentrated in the lowest quintile of the income distribution, but in total it would be smaller than the increase in real income for those receiving higher wages.
- For families that experienced a decline in business income or saw no change in their labor income but faced higher prices for goods and services, real income

<sup>13.</sup> See Congressional Budget Office, The Effects on Employment and Family Income of Increasing the Federal Minimum Wage (July 2019), www.cbo.gov/publication/55410.

<sup>14.</sup> CBO ran 1,000 simulations, with each simulation using randomly drawn estimates from distributions of wage growth and responsiveness of employment.

<sup>15.</sup> The remaining one-third chance is that the effect would be an increase in employment or a reduction of more than 1.4 million workers.

would fall. That effect would be concentrated in the highest quintile of the income distribution.

#### **Effects on Real Output**

Raising the minimum wage would slightly reduce real GDP, primarily because of reduced employment. However, following its conventional practice for cost estimates, CBO incorporated the assumption that the bill would not change nominal GDP from the amounts in the agency's baseline budget projections. <sup>16</sup>

In addition to its effect on real output through employment, the bill would cause the stock of capital goods to be smaller than it would be otherwise. (Capital goods are assets that businesses use to produce goods and services; they include tools, buildings, vehicles, machinery, and equipment.) Some businesses would invest in capital goods to replace workers. Other businesses, however, would be discouraged from constructing new buildings or buying new machines if they anticipated having fewer employees to use them. On average, over the 2024–2033 period, real investment would be slightly lower than it would be if current laws did not change, CBO estimates. That reduction in investment would reduce workers' productivity and lead to further reductions in employment.

The higher minimum wage would also shift income toward lower-income families, which tend to spend a larger portion of their income. As a result, the total demand for goods and services would increase for several years, boosting overall real output. After that initial increase, however, CBO expects that the economic effects from a rise in demand would disappear.

#### **Effects on Prices**

In CBO's assessment, the Raise the Wage Act of 2023 would change the relative prices of goods and services. The largest price increases, relative to the average increase, would be for goods and services—such as food prepared in restaurants—whose production required a larger-than-average share of low-wage work. For goods and services that depended less on low-wage labor in their supply chains, prices would rise less. CBO adjusted the projected levels of price indexes under the bill to incorporate the assumption that nominal GDP would remain unchanged.

# Effects on the Distribution of Labor and Capital Income

Because this analysis incorporates the assumption that the bill would not change nominal GDP from the amounts in the agency's baseline budget projections, total nominal income would be roughly unchanged. However, the share of total income derived from labor would rise, on net, and the share derived from capital would fall.

Labor income would increase under the bill primarily because most people who would have earned wages at or near the federal minimum under current law would receive higher labor income. However, some people who would have been employed under current law would be jobless under the bill, at least for a while, and their annual labor income would be lower.

Capital income would fall under the bill because of higher labor costs and the reduced productivity of capital. For example, corporate profits would be lower, reducing dividend income. Other types of nonwage personal income, such as proprietors' income, would also decline.

#### **Effects on Interest Rates**

In CBO's assessment, the Raise the Wage Act of 2023 would cause interest rates to be slightly higher than they otherwise would have been over the 2024–2033 period. The Federal Reserve would adjust short-term interest rates to counteract the increase in overall demand and inflation stemming from the rising minimum wage. The rates on securities with longer-term maturities would also respond slightly. CBO adjusted the projected interest rates so that the real interest rates are the same as in the alternative approach in which CBO allows nominal GDP to change.

# Effects on Employment and Income, by Section, of the Raise the Wage Act of 2023

The Raise the Wage Act of 2023 contains a general provision and specific provisions that would affect minimum wages for tipped workers, newly hired employees who are less than 20 years old, and disabled workers. The following sections discuss the effects of the general provision and of each specific provision.

<sup>16.</sup> For a discussion of how allowing nominal GDP to change would affect the budgetary and macroeconomic estimates, see the section "How CBO's Results Would Change Under Dynamic Analysis."

#### **Section 2: Minimum-Wage Increases**

This section would mandate wage increases for about 7.9 million workers, the bulk of the 8.9 million workers who would be directly affected by the bill. According to CBO's average estimate, about 0.5 million of those workers who otherwise would be employed would be jobless in an average week in 2029, the year in which the minimum wage reached \$17 per hour. The implication is that, in an average week in 2029, this section would increase the wages of about 7.4 million workers whose wages otherwise would be below \$17 per hour. Those gains in earnings would be larger than the aggregate earnings losses from higher rates of joblessness. Thus, the income of families with low-wage workers would increase, on average, and the number of families below the FPL would decrease. Higher-income families would experience a decline in purchasing power because prices for goods and services would increase.

#### **Section 3: Tipped Employees**

Under current law, employers are allowed to pay tipped workers \$2.13 per hour if their total hourly earnings (including tips) equal or exceed the regular minimum wage. By phasing out that subminimum wage, this section would mandate wage increases for an additional 0.8 million workers, CBO estimates. It would boost the earnings of most of those workers through higher wages but also reduce the earnings of some through higher rates of joblessness. Part of the increase in earnings through higher wages would be offset by lower income from tips.

Cumulatively, sections 2 and 3 accounted for about 8.7 million of the 8.9 million workers who would be directly affected by the bill. The remainder, 0.2 million, would be directly affected by sections 4 and 6.

### Section 4: Newly Hired Employees Who Are Less Than 20 Years Old

Under current law, employers are allowed to pay teenage workers \$4.25 per hour during their first 90 days of employment. However, few teenagers with that tenure are paid less than the regular minimum wage, in CBO's assessment. Thus, by phasing out the subminimum wage for those workers, this section would mandate large wage increases for a small group of workers. Because their increases would be larger than those for workers who are subject only to section 2, the increase in earnings (per affected worker) from higher wages would be larger (for workers who would not become jobless).

However, the larger mandated increase might cause a larger reduction in earnings from higher rates of joblessness. Larger mandated wage increases would cause proportionally larger increases in joblessness for teenage workers earning less than the regular minimum wage than for other teenagers who would earn above the current-law minimum wage. The increase in joblessness would also be proportionally larger than that for adults because teenage employment is more responsive to minimum-wage increases than adult employment is. However, the resulting loss of earnings might be relatively small because the workers affected by this section would have earned less than the regular minimum under current law.

## Section 6: Promoting Economic Self-Sufficiency for People With Disabilities

Under section 14(c) of the Fair Labor Standards Act of 1938, the Department of Labor may permit employers to pay wages below the regular minimum to workers with disabilities that limit their productivity. By phasing out the section 14(c) program, section 6 of the Raise the Wage Act of 2023 would mandate large wage increases for the small group of disabled people employed under a 14(c) exemption.<sup>17</sup> Because the mandated wage increases are larger than those for adult workers who are subject only to section 2, the increase in earnings (per affected worker) from a higher minimum wage would be larger for workers who would not become jobless, but the larger mandated wage increases would cause larger increases in joblessness. The increase in joblessness might also be relatively large because the disabled workers affected by this section are less productive than the adults who are subject only to section 2.18 However, the resulting loss of earnings might be relatively small because most of the workers affected by this section

<sup>17.</sup> In recent years, about half of the workers in that program were paid less than \$3.50 per hour. See Government Accountability Office, Subminimum Wage Program: DOL Could Do More to Ensure Timely Oversight, GAO-23-105116 (January 2023), https://tinyurl.com/nw5pnrj6.

<sup>18.</sup> Under current law, employers of section 14(c) workers are required to establish that workers' wages are commensurate with their productivity. Thus, the lower wages those workers earn indicate that they tend to be less productive than adults who are subject only to section 2. Employers who are trying to maximize profits would respond to an increase in the minimum wage by first laying off the least productive workers. However, many section 14(c) workers are employed by nonprofit organizations, and there is little research on how those organizations respond to increasing the minimum wage.

would have earned less than the regular minimum under current law.

# Comparisons With CBO's February 2021 Analysis

In February 2021, CBO produced an estimate of the budgetary effects of implementing the Raise the Wage Act of 2021.<sup>19</sup> The results in this report are not directly comparable to those presented in the February 2021 report because the increases in the minimum wage specified under the two bills are different. CBO has also updated its modeling approach since 2021. (Before that, the last time CBO had updated its modeling approach was in 2019. That method was used for a report, published in July 2019, on the effects on employment and family income of increasing the federal minimum wage.<sup>20</sup> It was also used for the analysis underlying the 2021 report.) In addition, the economy evolved differently over the past two years than CBO projected in 2021, and the agency's current economic projections are therefore different.

#### Differences in the Bill

The Raise the Wage Act of 2023 would phase in a minimum wage of \$17 that would be effective five years after enactment; in contrast, the Raise the Wage Act of 2021 would have phased in a minimum wage of \$15 over four years. Therefore, under the 2023 bill, businesses that pay workers the minimum wage would eventually face larger increases in wages than they would have under the 2021 bill.

#### **Differences in CBO's Modeling Approach**

CBO has reduced its estimate of how much employment would change in response to an increase in the minimum wage since it last estimated the effects of such a change. That reduction reflects recent research that suggests employment is less responsive to changes in the minimum wage than previously estimated.

The responsiveness of employment to a change in the minimum wage is generally represented by an employment elasticity—that is, the percentage change in employment that results from a certain percentage change in wages. CBO's approach converts employment elasticities from the literature to an "own-wage" elasticity, which measures how the employment of workers directly affected by the policy would respond to changes in their own wages. (Workers would be directly affected if they earned less than the new minimum wage in the absence of the policy.)

In CBO's assessment, the employment elasticity for teenage workers is –0.07, which implies that teenage employment declines by 0.7 percent, on average, for every 10 percent increase in the minimum wage. That value is CBO's median estimate of the elasticity that would apply to teenage employment in the short term (for one year) following a minimum-wage change that was close in magnitude to the average of past changes. That elasticity measures how employment for all teenage workers would respond to changes in the minimum wage. CBO converted that value to an own-wage elasticity of –0.46. In CBO's assessment, the research literature still supports that estimate of the elasticity for teenagers, but it also supports using a smaller (less negative) elasticity for other workers who are directly affected.

Based on the literature available when CBO was preparing its July 2019 and February 2021 reports, the agency estimated a median, own-wage elasticity for all directly affected workers (both teenagers and adults) of -0.25. The agency used that value to calculate the change in employment from a historically representative change in the short term. The employment elasticities for all directly affected adult and teenage workers implied a median, own-wage elasticity for adults of -0.148. CBO concluded that the range that would cover two-thirds of possible adult elasticities was asymmetric because the studies of most directly affected workers indicated the possibility of large negative elasticities. CBO concluded that there was a one-third chance that the own-wage, adult elasticity would be between about zero and -0.148, a one-third chance that it would be between -0.148 and -0.443, and roughly equal chances that it would be either positive or more negative than -0.443.

After reviewing studies that have recently become available, CBO changed its median estimate of the own-wage elasticity for all workers from -0.25 to -0.2 (for examples of those studies, see Appendix A in this report). Several recent studies have estimated employment elasticities that are less negative than the central

<sup>19.</sup> S. 53 in the 117th Congress. See Congressional Budget Office, *The Budgetary Effects of the Raise the Wage Act of 2021* (February 2021), www.cbo.gov/publication/56975.

<sup>20.</sup> For a more detailed description of CBO's modeling approach, see Congressional Budget Office, *The Effects on Employment and Family Income of Increasing the Federal Minimum Wage* (July 2019), www.cbo.gov/publication/55410.

value CBO used in its 2019 report. As a result of the change in the own-wage elasticity for all workers, CBO's median estimate of the adult elasticity fell to -0.073. The agency concluded that there was a one-third chance that the own-wage, adult elasticity would be between zero and -0.073, a one-third chance that it would be between -0.073 and -0.218, and roughly equal chances that it would be either positive or more negative than -0.218.

CBO also refined the approach it uses to extrapolate from those historically representative elasticities to elasticities for proposed policies that differ from past minimum-wage increases. To analyze such policies, CBO adjusted the own-wage elasticities to account for the following factors:

- The scope and size of the minimum-wage change under consideration—that is, the number of workers affected and the changes in their wages—relative to the average historical change to the minimum wage;
- Whether and how the new minimum wage would be indexed in the years after it reached its target amount;
- How long employers would have to adjust to the new minimum wage.

CBO uses more-negative employment elasticities for policies with more scope and size. For the 2019 report, the agency calibrated the extent to which the own-wage elasticities were more negative so that both the teenage and the adult elasticities were about 20 percent larger (that is, more negative) for the \$15 minimum wage analyzed in that report than for a policy similar to past federal increases. But the difference between the average elasticity among all affected workers under those two policies would be less than 20 percent because the mix of people who were affected would be different. The wages of teenagers tend to be lower than those of adults, and thus a smaller portion of directly affected workers would have been teenagers under the \$15 policy than under past federal increases. Because the elasticity for teenagers is greater than that for adults, that change in the mix reduces the average overall elasticity.

CBO now calibrates the model so that the average employment elasticity among workers of all ages is about 20 percent larger for the \$15 minimum wage analyzed in the 2019 report than for a policy that would be similar in size and scope to past federal increases. (The 20 percent increase is applied to the distribution of values for

the historical own-wage elasticity that has been updated.) That is achieved by increasing the elasticity for adults when a smaller share of the workers directly affected by the policy would be teenagers. For example, under a \$15 policy, the elasticity for adults would be more than 20 percent larger than for a policy similar to past federal increases because a smaller share of directly affected workers would be teenagers. Adult employment is probably more elastic when a greater share of affected workers are adults because employers would need to cut more adults from their workforce in response to lower demand for their goods and services. (Employers respond to the higher cost of low-wage workers by raising prices, which reduces their sales, and thus their desired output.)

The extent to which larger increases in the minimum wage lead to larger employment elasticities is uncertain because the evidence is mixed. Some studies show that employment elasticities become more negative than CBO projects, but others show that even a large increase in the minimum wage does not reduce employment. (For examples, see Appendix A.)

#### **Differences in the Economy**

CBO estimated the effects of the Raise the Wage Act of 2023 using updated data on how the economy has evolved since 2021 and updated projections of how it will evolve in the future. For instance, workers' wages have increased over the past two years by more than CBO projected in its 2021 report. In addition, CBO's projection of future wages is higher, and the agency has updated the data it uses to account for increases in the states' minimum-wage rates. Therefore, CBO now estimates that fewer workers earn below the minimum wage that would be implemented under the bill.

# How CBO's Results Would Change Under Dynamic Analysis

CBO also estimated the effects of the Raise the Wage Act of 2023 using an alternative method—dynamic analysis—that allows nominal GDP to change. Under that method, CBO finds that the bill would increase the deficit by \$59 billion over the 2024–2033 period, \$13 billion more than under CBO's conventional analysis. That difference is largely the result of counting \$14 billion in added interest costs that would stem from the estimated effects of higher interest rates and changes in inflation under the bill. (For that estimate, CBO calculated the change in interest on federal debt as if the

amounts of noninterest spending and revenues were as projected under current law.)

Under dynamic analysis, the GDP price index and other price indexes are determined by the upward pressure on the prices of goods and services stemming from the rising minimum wage and the Federal Reserve's efforts to restrain inflation. According to CBO's estimates, under the bill, inflation would increase in the first several years and return by 2032 to essentially the rate in CBO's baseline projections. The price indexes would

be slightly higher than the adjusted price indexes using conventional analysis throughout the 2025–2033 period. Using dynamic analysis, CBO projects that inflation would be higher in early years but lower in later years. <sup>21</sup> The higher price levels would cause nominal GDP and nominal income to be higher than under conventional analysis. In addition, interest rates would be higher in early years but lower in later years than under conventional analysis, reflecting the path of inflation underlying the two analyses.

In 2024, price indexes and inflation are lower under dynamic analysis.

# Appendix A: Research About the Effects of Minimum-Wage Increases on Employment

In making changes to its estimates of employment elasticity, the Congressional Budget Office drew on the studies listed below. (Employment elasticity is the percentage change in employment that results from a certain percentage change in wages.) CBO's 2019 report, which served as the basis for an update published in 2021, provides a more comprehensive list of the studies the agency examined in determining the effects of the minimum wage on employment and family income.<sup>22</sup>

### Recent Research About the Effects of Minimum-Wage Increases on Employment

José Azar and others, "Minimum Wage Employment Effects and Labour Market Concentration," *Review of Economic Studies* (September 2023, available online only), pp. 1–41, https://doi.org/10.1093/restud/rdad091.

Jeffrey Clemens, Lisa B. Kahn, and Jonathan Meer, "Dropouts Need Not Apply? The Minimum Wage and Skill Upgrading," *Journal of Labor Economics*, vol. 39, no. S1 (January 2021), pp. S107-S149, https://doi.org/10.1086/711490.

Jeffrey Clemens and Michael R. Strain, *The Heterogeneous Effects of Large and Small Minimum Wage Changes: Evidence Over the Short and Medium Run Using a Pre-Analysis Plan*, Working Paper 29264 (National Bureau of Economic Research, September 2021), https://doi.org/10.3386/w29264.

Anna Godoey and Michael Reich, "Are Minimum Wage Effects Greater in Low-Wage Areas?" *Industrial Relations*, vol. 60, no. 1 (January 2021), pp. 36–83, https://doi.org/10.1111/irel.12267.

Loukas Karabarbounis, Jeremy Lise, and Anusha Nath, *Minimum Wages and Labor Markets in the Twin Cities*, Working Paper 30239 (National Bureau of Economic Research, revised August 2023), https://doi.org/10.3386/w30239.

David Neumark and Maysen Yen, "Effects of Recent Minimum Wage Policies in California and Nationwide: Results From a Pre-Specified Analysis Plan," *Industrial Relations*, vol. 61, no. 2 (April 2022), pp. 228–255, https://doi.org/10.1111/irel.12297.

Justin Wiltshire, Carl McPherson, and Michael Reich, *High Minimum Wages and the Monopsony Puzzle*, Working Paper 104-23 (Institute for Research on Labor and Employment, May 2023), https://tinyurl.com/5f4c99pd.

Jesse Wursten and Michael Reich, *Small Businesses and the Minimum Wage*, Working Paper 102-23 (Institute for Research on Labor and Employment, March 2023), https://tinyurl.com/2p9um7dh.

#### Research Addressing the Relationship Between the Employment Effect and the Size of the Minimum-Wage Increase

David W. Berger, Kyle F. Herkenhoff, and Simon Mongey, *Minimum Wages, Efficiency and Welfare*, Working Paper 29662 (National Bureau of Economic Research, January 2022), https://doi.org/10.3386/w29662.

<sup>22.</sup> See Congressional Budget Office, *The Effects on Employment and Family Income of Increasing the Federal Minimum Wage* (July 2019), www.cbo.gov/publication/55410, and *The Budgetary Effects of the Raise the Wage Act of 2021* (February 2021), pp. 11–12, www.cbo.gov/publication/56975.

Doruk Cengiz and others, "The Effect of Minimum Wages on Low-Wage Jobs," *Quarterly Journal of Economics*, vol. 134, no. 3 (August 2019), pp. 1405–1454, https://doi.org/10.1093/qje/qjz014.

Jeffrey Clemens and Michael R. Strain, *The Heterogeneous Effects of Large and Small Minimum Wage Changes: Evidence Over the Short and Medium Run Using a Pre-Analysis Plan*, Working Paper 29264 (National Bureau of Economic Research, September 2021), https://doi.org/10.3386/w29264.

Erik Hurst and others, *The Distributional Impact of the Minimum Wage in the Short and Long Run*, Working Paper 30294 (National Bureau of Economic Research, July 2022), https://doi.org/10.3386/w30294.

Justin Wiltshire, Carl McPherson, and Michael Reich, *High Minimum Wages and the Monopsony Puzzle*, Working Paper 104-23 (Institute for Research on Labor and Employment, May 2023), https://tinyurl.com/5f4c99pd.

This Congressional Budget Office report was prepared in response to a request by the Ranking Member of the Senate Committee on Health, Education, Labor, and Pensions. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

Nabeel Alsalam, Justin Falk, and Timothy Young prepared the report with assistance from Elizabeth Ash, Grace Berry, and Jada Ho and guidance from Xiaotong Niu, Emily Stern, and Julie Topoleski. Estimates of economic effects were prepared by Edward Gamber, Junghoon Lee, Chandler Lester, Jeffrey Schafer, and Matthew Wilson with guidance from Richard DeKaser and Devrim Demirel. Estimates of the budgetary effects were prepared by Susan Yeh Beyer, Jeremy Crimm, Meredith Decker, Nathaniel Frentz, Jennifer Gray, Julia Heinzel, Leah Koestner, Justin Latus, Avi Lerner, Noah Meyerson, Eamon Molloy, Hudson Osgood, Allison Percy, Dan Ready, Sarah Sajewski, Naveen Singhal, Delaney Smith, Robert Stewart, Emily Vreeland, Noah Zwiefel, and the staff of the Joint Committee on Taxation with guidance from Christina Hawley Anthony, Barry Blom, Chad Chirico, Elizabeth Cove Delisle, Sean Dunbar, Edward Harris, Justin Humphrey, Sarah Masi, John McClelland, Alexandra Minicozzi, H. Samuel Papenfuss, and Asha Saavoss. Tamara Hayford, Jaeger Nelson, and Brooks Pierce provided helpful comments.

Jeffrey Kling and Robert Sunshine reviewed the report. Loretta Lettner edited it, and Jorge Salazar formatted the tables and prepared the text for publication. The report is available on the agency's website at www.cbo.gov/publication/59833.

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

Phillip L. Swagel Director

