



# The Budgetary Effects of the Raise the Wage Act of 2021

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If enacted at the end of March 2021, the Raise the Wage Act of 2021 (S. 53, as introduced on January 26, 2021) would raise the federal minimum wage, in annual increments, to \$15 per hour by June 2025 and then adjust it to increase at the same rate as median hourly wages. In this report, the Congressional Budget Office estimates the bill's effects on the federal budget.

- The cumulative budget deficit over the 2021–2031 period would increase by \$54 billion. Increases in annual deficits would be smaller before 2025, 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 paid at or near the minimum wage, such as those providing 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 boost federal revenues (on net).

Those estimates are consistent with CBO's conventional approach to estimating the costs of legislation. In particular, they incorporate the assumption that nominal gross domestic product (GDP) would be unchanged. As a result, total income is roughly unchanged. Also, the deficit estimate presented above does not include increases in net outlays for interest on federal debt (as projected under current law) that would stem from the estimated effects of higher interest rates and changes in inflation under the bill. Those interest costs would add \$16 billion to the deficit from 2021 to 2031.

The estimates in this report are based on CBO's most recent economic forecast, which was released earlier this month. CBO estimated the budgetary effects using techniques that it has developed over the past two years. Those estimates are based on CBO's estimates of the bill's effects on the economic behavior of individuals and firms—which in this report refers to actions that change relative prices, the distribution of income, employment, and other economic factors.

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

- From 2021 to 2031, the cumulative pay of affected people would increase, on net, by \$333 billion—an increased labor cost for firms considerably larger than the net effect on the budget deficit during that period.

- That net increase would result from higher pay (\$509 billion) for people who were employed at higher hourly wages under the bill, offset by lower pay (\$175 billion) because of reduced employment under the bill.

In an average week in 2025, the year when the minimum wage would reach \$15 per hour, 17 million workers whose wages would otherwise be below \$15 per hour would be directly affected, and many of the 10 million workers whose wages would otherwise be slightly above that wage rate would also be affected. At that time, the effects on workers and their families would include the following:

- Employment would be reduced by 1.4 million workers, or 0.9 percent, according to CBO's average estimate; and
- The number of people in poverty would be reduced by 0.9 million.

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

- Background on the Raise the Wage Act of 2021;
- Effects on spending for major health care programs;
- Effects on spending for unemployment compensation;
- Effects on spending for Social Security;
- Effects on spending for nutrition programs;
- Effects on other mandatory spending;
- Effects on revenues;
- Effects on discretionary outlays for wages of federal workers;
- Effects on net spending for interest;
- Uncertainty surrounding the budgetary estimates; and
- How CBO's analysis of budgetary effects has changed.

The report also provides the following information about changes in economic behavior underlying those estimates and about CBO's analytical methods:

- Effects on employment;
- Effects on wages of affected workers;
- Effects on the distribution of family income;
- Effects on real (inflation-adjusted) output;
- Effects on prices;
- Effects on the distribution of labor and capital income;
- Effects on interest rates;
- CBO's economic modeling approach; and
- Comparisons with CBO's July 2019 analysis.

## Background on the Raise the Wage Act of 2021

In this report, CBO analyzes the Raise the Wage Act of 2021 as introduced in the Senate on January 26, 2021. It would take effect on the first day of the third month after the date of enactment. If it was enacted at the end of March 2021, the minimum wage would increase by a set amount each year, starting in June 2021, until it reached \$15 in June 2025 (see Table 1 on page 15). In subsequent years, it would increase by the annual percentage increase, if any, in the median hourly wage of all employees. The bill's provisions would cover most low-wage workers, but they would not cover the self-employed, casual babysitters, and certain seasonal workers. The bill would also increase the minimum wage for teenagers and disabled workers, and it would increase the share of the minimum wage for tipped workers that must be paid by their employers. (The minimum wage for those workers has long been different from the minimum wage for other workers. Tipped workers are those whose compensation depends primarily on tips.)

## Effects on Spending for Major Health Care Programs

The Raise the Wage Act of 2021 would affect spending for the major federal health care programs. 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, there would be roughly 3 million such workers by 2025, many of whom would earn less than \$15 per hour. 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. The effect of changes in the distribution of income is another key factor. Those changes would put downward pressure on spending for Medicaid and increase spending for marketplace subsidies.

**Medicaid and CHIP.** Under the bill, Medicaid spending would increase because the effects of increases in the price of health care services and increases in enrollment by people who would be jobless as a result of the minimum-wage increase would outweigh the effects of decreases in enrollment by people with higher income (see Table 2 on page 16). Prices, such as those for long-term services and supports and medical services, would increase as a result of negotiations that accounted for higher costs of labor facing health care providers. The number of Medicaid enrollees would tend to rise because of increased enrollment among people who lost employment as a result of the minimum-wage increase and thus became eligible for the program. However, that tendency would be more than offset as the income of some enrollees rose above the thresholds for Medicaid eligibility, causing overall enrollment to decline.

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 and the Basic Health Program. Some of the people whose wages increased under the bill would be in lower-income families that, as their income increased, gained eligibility for tax credits to cover part of their premiums. (People in families with income between 100 percent and 400 percent of the federal poverty guidelines are generally eligible for those tax credits.) That change in income and eligibility would cause net increases in enrollment in health insurance and in the number of people claiming premium tax credits to purchase that coverage. Some people who would become ineligible for Medicaid because of increases in their income would use those tax credits instead, offsetting some of the reduction in spending that would stem from declines in Medicaid enrollment. (Those tax credits are

refundable, and they affect revenues as well as outlays; the revenue effects are included in the revenue totals discussed below.)

**Medicare.** A higher minimum wage would increase Medicare spending because Medicare's payment rates for health care providers would be higher. In contrast to 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. A higher minimum wage would change some of those variables, resulting in increased spending.

### **Effects on Spending for Unemployment Compensation**

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. (Both 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 eventually equaled 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 deficit effect from 2021 to 2031 would be larger than the total eventual effect. (The effects on revenues are included in the revenue totals discussed below.)

### **Effects on Spending for Social Security**

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

A minimum-wage increase would also affect Social Security spending in less significant ways. The reduction in employment resulting from a minimum-wage increase, for example, would induce some workers with serious health conditions to claim disability benefits and some older workers to claim retirement benefits earlier than they would have otherwise. (Social Security includes both kinds of benefits.) However, increases in earnings among low-wage workers would lead some people who would otherwise have claimed Social Security benefits to delay claiming them. Also, higher earnings would exert downward pressure on Social Security spending because some claimants' benefits are reduced when their 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, which are discussed below) because those budgetary accounts are designated by law as excluded from budget totals used for certain purposes.

### **Effects on Spending for Nutrition Programs**

Spending on the Supplemental Nutrition Assistance Program and child nutrition programs would decline, on net, because increases in income for low-income households would reduce both the number of beneficiaries and their average benefit amount. Those effects would be partially offset

under the bill by increases in enrollment stemming from reductions in employment and by increases in price indexes used to calculate benefit amounts.

## Effects on Other Mandatory Spending

Other mandatory spending would be affected in a variety of ways. (Such spending is generally governed by statutory criteria and is not normally constrained by the annual appropriation process.) Spending would be affected for refundable tax credits, student loans, Supplemental Security Income (SSI), various retirement programs, certain programs for veterans, 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). Those higher labor earnings would also reduce net spending on student loans by increasing the amounts repaid by borrowers enrolled in income-driven repayment plans. The increase in inflation 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. (For SSI, that increase 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.)

## Effects on Revenues

The bill would increase revenues, on net, from 2021 to 2031. That net effect would be the result of a number of factors that worked in opposite directions. Although total nominal income would be roughly unchanged in CBO's estimate, labor income would increase while capital income would decrease. Labor income tends to be more heavily taxed. Income would also shift toward lower-income people and away from higher-income people under the bill. 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 factors would tend to increase revenues. Higher labor earnings among low-wage workers are one. 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, as this report discusses above. 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. That 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 the tax brackets and standard deduction amounts, are adjusted for inflation. Revenues would also fall because of larger premium tax credits, as this report discusses above.

## 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 would see a pay increase under the bill. That estimate is based on information from the Office of Personnel

Management. (Using information from the Postal Service, CBO also estimates that a small number of postal workers would see a pay increase under the bill. Unlike spending for wages of other federal workers, such spending for postal workers is not discretionary and is shown in Table 2 under other mandatory outlays.)

## 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 inflation would change. Net spending for interest largely depends on interest rates and the amount of debt that the Treasury issues to the public. The effect of the bill on the deficit that is shown in Table 2 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.

## Uncertainty Surrounding the Budgetary Estimates

The effects of the Raise the Wage Act of 2021 on the budget and other outcomes are uncertain, and there is a wide range of possible outcomes on either side of the estimates shown in this report. For example, the effects depend on how quickly wages would grow 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 in its baseline projections, the bill's effects on employment would be larger, and the bill would probably increase the deficit by a larger amount. (CBO's baseline projections incorporate the assumption that current laws generally do not change.) If wage growth in the absence of the policy proved faster than CBO currently projects, the opposite would be the case.

To take 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 spending affected by the prices of the goods and services they produce.

## How CBO's Analysis of Budgetary Effects Has Changed

In April 2019, CBO produced a cost estimate for H.R. 582, the Raise the Wage Act, as ordered reported by the House Committee on Education and Labor on March 6, 2019. The policy specifications in that bill differ somewhat from the specifications in the Raise the Wage Act of 2021. Under the assumptions about dates of enactment that CBO used, the minimum wage would reach \$15 per hour in 2025 under either bill. The step increases toward that new minimum would have started on January 1, 2020, under the 2019 bill, but they start on June 1, 2021, under the 2021 bill. The step increases in the 2021 bill are thus larger and would reach \$15 per hour more quickly.

At the time of its April 2019 estimate, CBO's most recent economic forecast had been released in January 2019.<sup>1</sup> Earlier this month, CBO released the economic forecast that underlies both the baseline budget projections used in this report and this report's estimates of the effects of the

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1. See Congressional Budget Office, *The Budget and Economic Outlook: 2019 to 2029* (January 2019), [www.cbo.gov/publication/54918](http://www.cbo.gov/publication/54918).

Raise the Wage Act of 2021.<sup>2</sup> That forecast reflects the current state of the economy and includes the impact that the 2020–2021 coronavirus pandemic is projected to have on the economy.

The April 2019 estimate included only the effects of raising the pay of federal employees whose wages would be below the new minimum. CBO estimated that those increases in pay would have led to a \$76 million increase in discretionary outlays over the 2019–2029 period, subject to appropriation of the necessary amounts.<sup>3</sup> That estimate did not include budgetary impacts stemming from any behavioral effects by firms or individuals.

The estimates in this report include behavioral effects on the budget in a broad set of federal programs and in revenues.<sup>4</sup> Over the past two years, CBO has developed the capacity to analyze such behavioral effects for minimum-wage legislation. Increasing the minimum wage induces a number of behaviors among businesses and people that result in changes in relative prices, the distribution of income, employment, and other economic factors. CBO has incorporated those effects in this estimate because the analytical approach is ready for use, is more comprehensive, and provides a consistent basis for estimates during this Congress as it considers legislation that would change the minimum wage.

In this report, CBO used its customary process for estimating the budgetary effects of a legislative proposal.<sup>5</sup> For example, the agency examined how eligibility for subsidies for health insurance coverage would be affected by the bill and estimated the resulting effects on the budget.<sup>6</sup> To estimate the effects on various types of revenues stemming from changes in the distribution of income, CBO used its microsimulation tax model.<sup>7</sup> CBO included behavioral effects—such as changes in the likelihood that people will claim a government benefit or changes in subsidies for health insurance resulting from changes in the prices of health care—that it has included in past cost estimates for other types of legislation.<sup>8</sup>

The set of effects incorporated in this estimate is more extensive than the set incorporated in most 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. Behavioral effects stemming from increases in the minimum wage were not included in the April

2. See Congressional Budget Office, *An Overview of the Economic Outlook: 2021 to 2031* (February 2021), [www.cbo.gov/publication/56965](http://www.cbo.gov/publication/56965), and *The Budget and Economic Outlook: 2021 to 2031* (forthcoming).
3. See Congressional Budget Office, cost estimate for H.R. 582, the Raise the Wage Act (April 22, 2019), [www.cbo.gov/publication/55152](http://www.cbo.gov/publication/55152). By comparison, raising the pay of federal employees whose wages would be below the new minimum under the Raise the Wage Act of 2021 would lead to a \$130 million increase in discretionary outlays over the 2021–2031 period, CBO estimates, subject to appropriation of the necessary amounts.
4. The set of affected programs is broader than those included in some other analyses; for example, this report includes effects on spending for major health care programs, unemployment compensation, and Social Security. Two other analyses are Ben Zipperer, David Cooper, and Josh Bivens, *A \$15 Minimum Wage Would Have Significant and Direct Effects on the Federal Budget* (Economic Policy Institute, February 2021), <https://tinyurl.com/xx4q2ria>; and Michael Reich, *Effect of a Federal Minimum Wage Increase to \$15 by 2025 on the Federal Budget* (Institute for Research on Labor and Employment, February 2021), <https://tinyurl.com/232c9cg1>.
5. See Congressional Budget Office, *How CBO Prepares Cost Estimates* (February 2018), [www.cbo.gov/publication/53519](http://www.cbo.gov/publication/53519).
6. See Congressional Budget Office, “How CBO and JCT Analyze Major Proposals That Would Affect Health Insurance Choices” (January 2020), [www.cbo.gov/publication/56053](http://www.cbo.gov/publication/56053).
7. See Congressional Budget Office, “An Overview of CBO’s Microsimulation Tax Model” (June 2018), [www.cbo.gov/publication/54096](http://www.cbo.gov/publication/54096).
8. For examples of estimates including such effects, see Congressional Budget Office, cost estimate for H.R. 1425, the State Health Care Premium Reduction Act (August 20, 2019), [www.cbo.gov/publication/55566](http://www.cbo.gov/publication/55566), and cost estimate for H.R. 3, the Elijah E. Cummings Lower Drug Costs Now Act (December 10, 2019), [www.cbo.gov/publication/55936](http://www.cbo.gov/publication/55936).

2019 estimate because those effects were complex and would have required further analysis, as CBO explained at the time.

## Effects on Employment

Increasing the minimum wage would affect employment in several ways.

- Higher wages would increase the cost to employers of 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 toward those substitutes and reducing their employment of low-wage workers.
- In some limited circumstances, increasing the minimum wage could boost employment if employers had what is known as monopsony power—that is, bargaining power that allows them to set wages below the rates that would prevail in a more competitive market.<sup>9</sup>
- Because increasing the minimum wage would shift income toward families with lower income, it would boost overall demand in the short term. Lower-income families spend a larger proportion of any additional income on goods and services than do families with higher income. That increased demand for goods and services 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 2021 would reduce employment by increasing amounts over the 2021–2025 period. In 2025, when the minimum wage reached \$15 per hour, employment would be reduced by 1.4 million workers (or 0.9 percent), according to CBO’s average estimate. In 2021, 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 2025, however, half of the 1.4 million people who would be jobless because of the bill would have dropped out of the labor force, CBO estimates. Young, 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, and the budgetary effects in this analysis depend on whether the hourly wages of affected workers would otherwise have been below or near the new minimum wage. The effects are asymmetric—that is, they would not be the same size if wage growth was faster than in the baseline projections or equally slower than in the baseline projections—because the effects differ when wages rise above the minimum wage. In addition, the responsiveness of employment to changes in the minimum wage is uncertain, and that uncertainty is also asymmetric. According to the agency’s assessment of the research literature, responsiveness is unlikely to be much lower than CBO’s median

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9. For a more detailed discussion, see Congressional Budget Office, “The Minimum Wage in Competitive Markets and Markets With Monopsony Power” (supplemental material for *The Effects on Employment and Family Income of Increasing the Federal Minimum Wage*, December 2019), [www.cbo.gov/publication/55410](http://www.cbo.gov/publication/55410).



estimate (which is equally likely to be too high or too low), but it could be much higher. CBO has formed distributions of values for both wage growth and responsiveness.<sup>10</sup>

To generate an average estimate, CBO simulated a distribution of possible changes in employment by drawing randomly from those distributions. The average estimate is a weighted average of the possible employment outcomes in the simulation, with each outcome assigned a weight on the basis of the probability that it occurs. Those probabilities reflect the different effects of upward and downward variations from CBO's baseline projections.

For 2025, the average estimate is that employment would be reduced by 1.4 million workers; the median estimate is 1.0 million workers. The mean 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 of that effect's being between about zero and 1.0 million workers and a one-third chance of its being between 1.0 million and 2.7 million workers.

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

CBO estimated the amounts by which labor costs for firms would change because of wages paid to people directly or potentially affected by an increase in the minimum wage—that is, people who would otherwise have been paid hourly wages that were less than the proposed new minimums or only slightly above them. Specifically, from 2021 to 2031, cumulative pay would increase by \$509 billion for people who were employed at higher hourly wages under the bill. Pay would decline by \$175 billion because employment would be reduced in that period under the bill. Therefore, the cumulative pay of directly and potentially affected workers would increase, on net, by \$333 billion.

CBO also estimated the number of affected workers who would experience those changes in pay. If the Raise the Wage Act of 2021 is not enacted, 17 million workers (or 10 percent of the labor force as it is projected under current law) will have wages below the minimums proposed by the bill, CBO estimates, during an average week in 2025. That is therefore the number of workers who would be directly affected by the bill. Also, 10 million workers during that average week will have wages that are only slightly higher than the proposed minimums; that is the number who would be potentially 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 2021 on income would vary considerably among families. In 2025, 0.9 million fewer people would have income below the federal poverty thresholds, CBO estimates. Families' real income 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 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 it would be smaller than the increase in real income just described.

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10. See Congressional Budget Office, *The Effects on Employment and Family Income of Increasing the Federal Minimum Wage* (July 2019), [www.cbo.gov/publication/55410](http://www.cbo.gov/publication/55410).

- 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 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, CBO incorporated the assumption that the bill would not change *nominal* GDP from the amounts in the agency's baseline budget projections, following a practice that is conventional for its cost estimates. As the next section describes, CBO's estimates of the effects of the bill on the GDP price index (and other price indexes) were adjusted to be consistent with that assumption.

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 2021–2031 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 their employment.

The higher minimum wage would also shift income toward lower-income families, which tend to spend a relatively larger fraction 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 boost, however, CBO expects that the economic effects from increases in demand would disappear.

## Effects on Prices

In CBO's assessment, the Raise the Wage Act of 2021 would change the relative prices of goods and services. The largest price increases, relative to the average increase, would be for goods or services whose production required a larger-than-average share of low-wage work, such as food prepared in restaurants. For goods and services that used less low-wage labor in their supply chains, prices would rise less.

CBO made adjustments to the projected levels of price indexes under the bill to incorporate the assumption that nominal GDP would be unchanged. If CBO had relaxed that assumption and allowed nominal GDP to change, the resulting budgetary effects would have been similar to those presented in this report. Also, if nominal GDP were allowed to change, inflation under the bill would return by 2029 to essentially the rate in CBO's baseline projections, although the level of prices would be higher than in the baseline projections.

## Effects on the Distribution of Labor and Capital Income

Because CBO incorporated 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 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 2021 would cause interest rates to be slightly higher than they would have been otherwise over the 2021–2031 period. CBO expects that from 2021 to 2023, regardless of whether the bill is enacted, real GDP will remain below its potential (that is, its maximum sustainable) level, and interest rates on securities with short-term maturities will remain near zero. The agency expects that those interest rates would increase very slightly for a few years after 2023 under the bill because of the increase in inflation stemming from the rising minimum wage. The rates on securities with longer-term maturities would also respond slightly. Because those rates depend on expected future rates on securities with shorter terms, they would change sooner than the rates on those short-term securities. For example, the interest rate on 10-year Treasury notes would rise before 2024 because it would reflect the anticipated rates on Treasury bills issued in 2024 and later.

## CBO's Economic Modeling Approach

In July 2019, CBO analyzed how various options for increasing the federal minimum wage—including a \$15 option based on the version of the Raise the Wage Act ordered reported in the House of Representatives earlier that year—would affect employment and family income.<sup>11</sup> To estimate the budgetary effects of the Raise the Wage Act of 2021, CBO started with the analysis of employment and the distribution of income underlying its July 2019 report, shifting it forward to cover the 2021–2031 period and updating it to account for changes in state laws. The agency also accounted for a larger range of economic variables, including real GDP, relative prices, the distribution of labor and capital income, and interest rates. CBO used its estimates of the bill's effects on those factors to estimate changes in federal spending and revenues.

In its 2019 report, CBO projected effects on employment and family income partly on the basis of a review of research on the responsiveness of employment to changes in the minimum wage.<sup>12</sup> In updating that analysis for this report, CBO reviewed recent research on how minimum wages affect employment; also, to account for declines in employment caused by the 2020–2021 coronavirus pandemic, the agency reviewed studies assessing whether those effects would be different during a period of high unemployment. Although the pandemic and associated increases in unemployment affected CBO's baseline projections of the budget and economy for the 2021–2031 period, they did not lead the agency to change its general approach to estimating how employment would respond to a higher minimum wage, for several reasons:

- Under the Raise the Wage Act of 2021, the minimum wage would rise incrementally, reaching \$15 per hour in 2025. In CBO's current baseline economic projections, employment in 2025 is near the level that it was in the baseline projections underlying the 2019 report.

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11. See Congressional Budget Office, *The Effects on Employment and Family Income of Increasing the Federal Minimum Wage* (July 2019), [www.cbo.gov/publication/55410](http://www.cbo.gov/publication/55410).

12. *Ibid.*, Appendix A.

- Only a limited number of empirical studies have considered whether employment responds differently to a higher minimum wage during a period of high unemployment, and those studies have yielded inconclusive results.
- Similarly, economic models yield conflicting conclusions. Some researchers have suggested that during and after periods of high unemployment, a larger-than-average share of firms open or go out of business, and employment might be more responsive to a higher minimum wage under such conditions.<sup>13</sup> But it is also possible that many of the workers who in normal times would be projected to lose their jobs because of a higher minimum wage, such as restaurant workers, have already lost their jobs because of the pandemic. In that case, the bill's effect on employment could be weaker.

To assess the effects of the Raise the Wage Act of 2021 on the economic behavior of individuals and firms, CBO used many of its standard methods of fiscal policy analysis.<sup>14</sup> Those methods incorporate different economic responses when the economy is weak, as it is currently, than when the economy is strong. CBO adjusted the GDP price index so as to hold nominal GDP unchanged from its level in CBO's baseline projections (an assumption consistent with the agency's conventional approach to estimating the costs of legislation). Thus, the estimates reflect effects on real economic behavior.

To project short-term effects on the demand for goods and services, the agency translated estimated changes in labor income caused by an increase in the minimum wage into changes in real purchases, using estimates of the fraction of additional income spent by households across the income distribution. CBO also used its estimates of effects on employment and wages to project effects on capital accumulation. Specifically, CBO used a dynamic general equilibrium model in which minimum-wage workers, other workers, and technology (such as machinery) are imperfect substitutes for one another. (A dynamic general equilibrium model is one in which households and businesses interact with each other in markets for goods and capital, responding to prices—such as wages and the rates of return on saving—that are themselves determined by those interactions.) Using that model, the agency examined how changes in labor income and profits stemming from an increase in the minimum wage would affect capital accumulation and business income.

To project the effects on relative prices, CBO estimated changes in labor costs for different industries and translated them into changes in the prices of goods and services, accounting for industries' dependence on each other. (A given industry's product uses other industries' products as inputs, and the price of the industry's product therefore reflects not only the costs of labor in that industry but also the costs of labor in other industries.)

## Comparisons With CBO's July 2019 Analysis

CBO's July 2019 report about an earlier version of the Raise the Wage Act included estimates of how economic behavior by individuals and firms would change as a result of the bill. It also included a qualitative discussion of how those changes in economic behavior would affect the budget, but it did not present quantitative estimates of those budgetary effects.

The results in this report differ from those in the July 2019 report, and there are several reasons for the differences. First, the distribution of hourly wages in 2025 in CBO's current baseline

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13. See, for example, Isaac Sorkin, "Are There Long-Run Effects of the Minimum Wage?" *Review of Economic Dynamics*, vol. 18, no. 2 (April 2015), pp. 306–333, <https://doi.org/10.1016/j.red.2014.05.003>.

14. See Congressional Budget Office, *How CBO Analyzes the Effects of Changes in Federal Fiscal Policies on the Economy* (November 2014), [www.cbo.gov/publication/49494](http://www.cbo.gov/publication/49494).

projections differs from that distribution in the agency's 2019 baseline projections. That difference arises partly because CBO projects that the pandemic will depress wages through 2025 and partly because the passage of Florida's Ballot Initiative 2 will raise the state minimum wage in Florida, on an incremental basis, to \$15 per hour by 2026. The Florida law reduces the number of workers who in 2025 would be substantially affected by the Raise the Wage Act of 2021.

Second, the timeline for the policy's implementation ran from January 1, 2020, to January 1, 2025, in the 2019 report, but it runs from June 1, 2021, to June 1, 2025, in this report. In this report, therefore, firms have less time to adjust to the policy's implementation than they did under the policy analyzed in the earlier report. That difference matters because the employment of low-wage workers is more responsive to higher minimum wages when firms have more time to respond to the higher cost.

Third, to capture the different effects of upward and downward variations from its baseline projections (as this report discusses above), CBO focuses here on the mean outcome of its simulations, rather than on an estimate calculated by using the median values of key inputs—specifically, projected wage growth and the responsiveness of employment to changes in the minimum wage.<sup>15</sup> Using the mean outcome results in larger central estimates of reductions in employment and real output.

Taken together, those differences led to differences in the reports' projected effects on employment and family income. In the 2019 report, CBO estimated that employment would fall by 1.3 million workers in 2025; in this report, the estimated reduction is 1.4 million workers. The most important analytical change that led to that difference was CBO's use of the mean rather than the median in determining its central estimates. The distribution of possible employment effects is asymmetric, and the mean is greater than the median. If CBO had used the median values of key inputs, as it did in the 2019 report, its central estimate of the employment effect in 2025 would have been a reduction of 1.1 million workers—a smaller amount than in the 2019 report.

The estimated number of people whose annual income would rise above the federal poverty thresholds in 2025 is smaller in the current report (0.9 million) than it was in the 2019 report (1.3 million). That difference stems from the changes in CBO's baseline projections, from the changes in the policies' timelines, and from the use of mean outcomes rather than outcomes generated by the median values of key inputs.

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15. For further discussion of issues that are related to mean outcomes and that involve the estimation of probability-weighted averages of possible costs, see Congressional Budget Office, *Estimating the Cost of One-Sided Bets: How CBO Analyzes the Effects of Spending Triggers* (October 2020), [www.cbo.gov/publication/56698](http://www.cbo.gov/publication/56698).

This Congressional Budget Office report was prepared in response to a request by the Chairman of the Senate Committee on the Budget. In keeping with CBO's mandate to provide objective, impartial analysis, the report contains no recommendations.

Nabeel Alsalam, William Carrington, Justin Falk, and Brooks Pierce prepared the report with assistance from Julia Heinzl and guidance from Molly Dahl, Joseph Kile, and Xiaotong Niu. Estimates of economic and budgetary effects were prepared by Susan Yeh Beyer, Yiqun Gloria Chen, Chad Chirico, Sheila Dacey, Meredith Decker, Devrim Demirel, Nathaniel Frenzt, Edward Gamber, Jennifer Gray, Cornelia Hall, Edward Harris, Lori Housman, Justin Humphrey, Nadia Karamcheva, Brian Klein-Qiu, Leah Koestner, Jamease Kowalczyk (formerly of CBO), Justin Latus, Junghoon Lee, Avi Lerner, Sarah Masi, Noah Meyerson, Alexandra Minicozzi, Eamon Molloy, Hudson Osgood, James Otterson, Allison Percy, Jeffrey Perry, Stephen Rabent, Dan Ready, Sarah Sajewski, Jeffrey Schafer, Kurt Seibert, John Seliski, Joshua Shakin, Naveen Singhal, Emily Stern, Robert Stewart, and Emily Vreeland. Helpful comments were received from Leigh Angres, Christina Hawley Anthony, Sheila Dacey, Wendy Edelberg (formerly of CBO), Heidi Golding, Theresa Gullo, Deborah Kilroe, Paul Masi, John McClelland, Sam Papenfuss, Julie Topoleski, and Jeffrey Werling.

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Mark Doms, Mark Hadley, Jeffrey Kling, and Robert Sunshine reviewed the report, and Christine Browne and Benjamin Plotinsky edited it. The report is available on the agency's website ([www.cbo.gov/publication/56975](http://www.cbo.gov/publication/56975)).

CBO continually seeks feedback to make its work as useful as possible. Please send any comments to [communications@cbo.gov](mailto:communications@cbo.gov).



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Director

**Table 1.**  
**Federal Minimum Wages Under S. 53, the Raise the Wage Act of 2021**

Date	Federal Minimum Wage
June 1, 2021	\$9.50
June 1, 2022	\$11.00
June 1, 2023	\$12.50
June 1, 2024	\$14.00
June 1, 2025	\$15.00
June 1, 2026 and later	\$15.00 plus an indexing adjustment <sup>a</sup>

Data source: Congressional Budget Office.

CBO analyzed the Raise the Wage Act of 2021 as introduced in the Senate on January 26, 2021. The analysis incorporates the assumption that the bill would be enacted at the end of March 2021.

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

a. Each year, the indexing adjustment would make the minimum wage equal the previous year's value plus the annual percentage increase, if any, in the median hourly wage of all employees.

**Table 2.**  
**Estimated Budgetary Effects of S. 53, the Raise the Wage Act of 2021**

Millions of Dollars

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2021– 2026	2021– 2031
<b>Increases or Decreases (-) in Mandatory Outlays</b>													
<b>Major Health Care Programs</b>													
Medicaid	0	1,378	1,416	1,527	1,121	1,463	1,457	1,147	1,140	2,063	3,283	6,905	15,995
Children's Health Insurance Program	0	106	196	424	626	632	686	842	905	970	1,041	1,984	6,427
Premium Tax Credits <sup>a</sup>	0	101	174	44	506	658	1,598	2,184	2,565	2,900	3,279	1,483	14,009
Medicare	0	28	137	310	857	1,049	1,128	1,250	1,222	1,357	1,486	2,381	8,824
<b>Unemployment Compensation</b>	0	695	1,630	2,615	3,405	3,905	4,360	3,990	3,375	3,175	3,365	12,250	30,515
<b>Social Security (Off-budget)</b>	*	6	34	206	625	1,178	1,597	2,040	2,524	3,108	3,841	2,049	15,159
<b>Nutrition Programs</b>													
Supplemental Nutrition Assistance Program	*	-240	-500	-890	-1,210	-1,140	-1,100	-1,130	-1,330	-1,410	-1,330	-3,980	-10,280
Child Nutrition Programs	0	*	-5	-38	-27	-24	-13	-6	-34	-46	-37	-94	-230
<b>Other</b>													
Earned Income, Child, and Other Tax Credits	7	52	74	-44	-360	-781	-1,036	-1,119	-1,190	-1,314	-1,383	-1,052	-7,094
Student Loans <sup>b</sup>	-600	-50	-45	-45	-40	-25	-30	-55	-70	-65	-70	-805	-1,095
Federal Civilian and Military Retirement	0	2	6	22	55	88	106	112	111	115	103	173	720
Veterans' Disability Compensation and Pension Programs	0	2	6	22	52	83	97	105	107	109	111	165	694
Supplemental Security Income	0	-10	-10	-10	0	20	30	40	30	30	30	-10	150
Other Retirement Programs <sup>c</sup>	0	*	*	1	5	9	10	12	12	13	13	15	75
Postal Service (Off-budget) <sup>d</sup>	0	0	0	*	*	*	*	*	*	*	*	*	0
<b>Total Changes in</b>													
<b>Mandatory Outlays</b>	<b>-593</b>	<b>2,070</b>	<b>3,113</b>	<b>4,144</b>	<b>5,615</b>	<b>7,115</b>	<b>8,890</b>	<b>9,412</b>	<b>9,367</b>	<b>11,005</b>	<b>13,732</b>	<b>21,464</b>	<b>73,869</b>
<b>On-budget</b>	<b>-593</b>	<b>2,064</b>	<b>3,079</b>	<b>3,938</b>	<b>4,990</b>	<b>5,937</b>	<b>7,293</b>	<b>7,372</b>	<b>6,843</b>	<b>7,897</b>	<b>9,891</b>	<b>19,415</b>	<b>58,710</b>
<b>Off-budget</b>	<b>*</b>	<b>6</b>	<b>34</b>	<b>206</b>	<b>625</b>	<b>1,178</b>	<b>1,597</b>	<b>2,040</b>	<b>2,524</b>	<b>3,108</b>	<b>3,841</b>	<b>2,049</b>	<b>15,159</b>
<b>Increases or Decreases (-) in Revenues</b>													
<b>Revenues From Income and Payroll Taxes<sup>e</sup></b>													
On-budget	-72	-288	-1,235	-2,342	-5,649	-3,021	-1,499	-519	301	771	889	-12,607	-12,664
Off-budget	58	356	1,061	2,247	3,601	4,439	4,919	5,142	5,335	5,420	5,352	11,762	37,930
Premium Tax Credits <sup>a</sup>	0	-25	-48	-155	-265	-328	-581	-831	-998	-1,092	-1,194	-821	-5,517



**Table 2.**  
**Estimated Budgetary Effects of S. 53, the Raise the Wage Act of 2021**

Millions of Dollars

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2021– 2026	2021– 2031
<b>Total Changes in Revenues</b>	-14	43	-222	-250	-2,313	1,090	2,839	3,792	4,638	5,099	5,047	-1,666	19,749
<b>On-budget</b>	-72	-313	-1,283	-2,497	-5,914	-3,349	-2,080	-1,350	-697	-321	-305	-13,428	-18,181
<b>Off-budget</b>	58	356	1,061	2,247	3,601	4,439	4,919	5,142	5,335	5,420	5,352	11,762	37,930
<b>Net Increase or Decrease (-) in the Deficit From Changes in Mandatory Outlays and Revenues</b>													
<b>Effect on the Deficit</b>	-579	2,027	3,335	4,394	7,928	6,025	6,051	5,620	4,729	5,906	8,685	23,130	54,120
<b>On-budget</b>	-521	2,377	4,362	6,435	10,904	9,286	9,373	8,722	7,540	8,218	10,196	32,843	76,891
<b>Off-budget</b>	-58	-350	-1,027	-2,041	-2,976	-3,261	-3,322	-3,102	-2,811	-2,312	-1,511	-9,713	-22,771
<b>Increases in Discretionary Outlays<sup>f</sup></b>													
Federal Workers' Pay	*	*	2	7	15	17	15	16	19	20	19	41	130

Data source: Congressional Budget Office.

CBO analyzed the Raise the Wage Act of 2021 as introduced in the Senate on January 26, 2021. The analysis incorporates the assumption that the bill would be enacted at the end of March 2021.

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. Those interest costs would add \$16 billion to the deficit over the 2021–2031 period.

\* = between –\$500,000 and \$500,000.

a. Premium tax credits are federal subsidies for health insurance purchased through the marketplaces established by the Affordable Care Act.

b. Costs for the federal student loan program 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 2021, the assumed year of enactment.

c. Includes retirement programs for the Coast Guard and for workers in railroads, the Foreign Service, and the Public Health Service.

d. In CBO's baseline projections, the Postal Service (USPS) exhausts its available budgetary resources in 2031 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 2031, resulting in no significant net cost to the agency over the 2021–2031 period.

e. Includes changes to the earned income tax credit and child tax credit. The revenue and outlay effects together represent a reduction of \$4,748 million for the earned income tax credit and an increase of \$2,257 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.

f. Estimates of discretionary outlays are based on the assumption that appropriations of the necessary amounts will be provided in each year.