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## **Economic Effects of Five Illustrative Single-Payer Health Care Systems**

Jaeger Nelson  
Congressional Budget Office  
[jaeger.nelson@cbo.gov](mailto:jaeger.nelson@cbo.gov)

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# Abstract

This paper builds on previous studies published by the Congressional Budget Office about single-payer health care systems. It uses a general-equilibrium, overlapping-generations model to analyze the economic and distributional implications of five illustrative single-payer health care systems. The systems vary by their payment rates to providers, degree of cost sharing, and inclusion of benefits for long-term services and supports (LTSS). The economic effects of financing a single-payer system are beyond the scope of this paper. However, the results can be paired with some of CBO's previously published estimates of the economic effects of financing a large and permanent increase in government spending.

We analyze six channels through which a single-payer system would affect the economy:

- The composition of workers' labor compensation would change because employers would no longer provide health care benefits and would pass along the savings to employees, increasing their taxable wages.
- Households' health insurance premiums would be eliminated, and their out-of-pocket (OOP) health care costs would decline.
- Administrative expenses in the health care sector would decline, freeing up productive resources for other sectors and ultimately increasing economywide productivity.
- Reduced payment rates to providers would increase productivity and efficiency in providing health care; however, some of the reduction in payment rates would be passed through to workers' wages in the health care sector and throughout the supply chain.
- Longevity and labor productivity would increase as people's health outcomes improved.
- LTSS benefits would further reduce OOP spending, provide payments for care that is currently unpaid, increase wages among workers providing care, and allow some unpaid caregivers to increase their hours worked at their primary occupation.

In this analysis, we found that economic output would be between 0.3 percent lower and 1.8 percent higher than the benchmark economy 10 years after the single-payer system was implemented, without incorporating the effects of financing the system. Under a single-payer system, workers would choose to work fewer hours, on average, despite higher wages because the reduction in health insurance premiums and OOP expenses would generate a positive wealth effect that allowed households to spend their time on activities other than paid work and maintain the same standard of living. If the system was financed with an income or payroll tax, gross domestic product (GDP) would be between approximately 1.0 percent and 10 percent lower by 2030, depending on the specification of the single-payer system and the details of the financing policy.

Moreover, that wealth effect would boost households' disposable income, which they could then split between increased saving and nonhealth consumption. Although hours worked per capita would decline, the effect on GDP would be offset under most policy specifications by an increase in economywide productivity, an increase in the size of the labor force, an increase in the average worker's labor productivity, and a rise in the capital stock. Additionally, we found that average private nonhealth consumption per capita would rise by about 11.5 percent by 2030. The average rise in nonhealth consumption is larger than it would be if the effects of financing the system were included in the analysis. The effects of a single-payer health care system on nonhealth consumption would be felt differently by people of different ages and incomes. The percentage increase in lifetime nonhealth consumption would be largest among younger and lower-income households after the system was implemented. If the system was financed with an income or payroll tax, nonhealth consumption per capita would be between approximately 3 percent higher and 7 percent lower by 2030, depending on the specification of the single-payer system and the details of the financing policy.

*Keywords:* single-payer health care, general-equilibrium model, distributional analysis

*JEL Classification:* E62, H31, I10

## **Notes**

Numbers in the text, figures, and tables may not sum to totals because of rounding.

Unless this report indicates otherwise, all years referred to are calendar years, and all values are reported in nominal dollars.

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## Introduction

In the Congressional Budget Office’s projections from 2020, national health expenditures rise to \$6.6 trillion and federal subsidies for health care rise to \$2.8 trillion by 2030 under current law. Those figures represent 21.4 percent and 9.1 percent of gross domestic product (GDP), respectively. In a previously published working paper, CBO evaluated the effects of five illustrative single-payer health care systems on national health expenditures (NHE), the federal budget, and health care utilization.<sup>1</sup> A single-payer health care system would replace comprehensive private health insurance plans and Medicare. It would also replace all of the coverage provided by Medicaid—except that, under most of the options, Medicaid would continue to provide long-term services and supports (LTSS), which help people with functional or cognitive limitations perform routine daily activities for an extended period. The effect of the various policy specifications on NHE ranged from a \$0.7 trillion decrease to a \$0.3 trillion increase by 2030; they would also increase the federal budget deficit by \$1.5 trillion to \$3.0 trillion. Under all five options, health care utilization would rise relative to projections under current law. The rise in health care utilization accounts for 14 percent to 24 percent of the rise in federal subsidies for health care in the five options.

In this paper, we analyze the economic and distributional effects of the same five single-payer health care systems. Those systems vary by their payment rates to providers, degree of cost sharing, and inclusion of benefits for LTSS. Although this paper does not focus on the effects of financing such systems, CBO has previously analyzed the economic effects of financing a large and permanent increase in government spending.<sup>2</sup> The results presented in this paper presume that the single-payer system would be financed through resources external to the model economy. Specifically, we adjust noninvestment government purchases to ensure that the single-payer system is deficit neutral (that is, the path of government debt is unaffected by the policy change) in each year of analysis (accounting for budgetary feedback). In CBO’s assessment, when the increase in federal subsidies under a single-payer system is similar in magnitude to the increase in revenues described in that earlier paper, the effects on GDP and private consumption are approximately additive.

This paper uses a general-equilibrium, overlapping-generations (OLG) model to quantify and illustrate the effects of implementing single-payer health care systems. In the model, the systems affect households’ work and saving decisions through six primary channels. Changes in

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<sup>1</sup> CBO’s Single-Payer Health Care Systems Team, *How CBO Analyzes the Costs of Proposals for Single-Payer Health Care Systems That Are Based on Medicare’s Fee-for-Service Program*, Working Paper 2020-08 (Congressional Budget Office, December 2020), [www.cbo.gov/publication/56811](http://www.cbo.gov/publication/56811).

<sup>2</sup> See Jaeger Nelson and Kerk Phillips, *The Economic Effects of Financing a Large and Permanent Increase in Government Spending*, Working Paper 2021-03 (Congressional Budget Office, March 2021), [www.cbo.gov/publication/57021](http://www.cbo.gov/publication/57021).

households' choices over their lifetime in turn affect economic output and aggregate consumption, among other economic metrics. Moreover, the policies have distributional implications for households' lifetime consumption and hours worked that vary by age and income.

The first channel through which a single-payer system would affect the economy is the redistribution of households' labor income from health insurance benefits to wages and salaries. Under current law, approximately 7.0 percent of households' labor compensation comes in the form of health insurance benefits provided by their employer. Under a single-payer system, employers would no longer provide such benefits; in their place, the government would provide a similar benefit package. In CBO's assessment, employers would pass along those savings to their workers through increases in their taxable wages and salaries.<sup>3</sup> Through this channel, households' labor supply (hours worked) would tend to increase following the increase in after-tax wage rates because of the substitution effect whereby workers traded off activities other than paid work for more paid hours. The increase in hours worked would further increase households' disposable income and, ultimately, their consumption and saving.

The second channel would affect households' budgets through reductions in premiums and out-of-pocket (OOP) health care costs. Those changes include households' lower financial obligations for health insurance premiums, medical expenses, copayments, and coinsurance. Because the majority of medical expenses over a households' lifetime occur at older ages, on average, the reduction in premiums and OOP spending would also reduce the incentive for households to save for old-age medical costs. That effect, which varies by the payment rates to providers, is stronger when LTSS benefits are included as part of the single-payer system (see Option 5). In addition to reducing households' saving—which reduces the capital stock—the reduction in premiums and OOP expenses would generate a positive wealth effect that allowed people to increase their nonhealth consumption, work fewer hours, and spend more time on nonpaid activities.

The third channel is the single-payer system's effect on economywide productivity.<sup>4</sup> In CBO's assessment, administrative costs within the health care sector reduce the sector's productivity. By CBO's estimate, a single-payer system would reduce administrative costs within the health care sector by approximately 1.8 percent of GDP in 2030 and ultimately boost productivity. A transition to a single-payer health care system would constitute a major change in health care administration. The reduction in the administrative expenses of private insurers and health care providers would reflect efficiency gains as health care utilization increased but fewer resources

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<sup>3</sup> See CBO's Single-Payer Health Care Systems Team (December 2020), p. 111.

<sup>4</sup> In this paper, the term "economywide productivity" is analogous to total factor productivity.

were used to administer those services.<sup>5</sup> That efficiency gain would increase the productivity level of the economy at large as productive resources were redistributed to other sectors of the economy.

The fourth channel is the change in payment rates to providers. In CBO's assessment, providers might respond to lower payment rates by improving their capital utilization and labor productivity so that they use fewer resources to provide care. Furthermore, in this paper, the reduction in payments made to providers would also be partially passed through the health care sector to workers' wages and the supply chain. In the short run, reduced payment rates to providers would have offsetting effects on households' disposable income, holding hours worked fixed. Increased labor productivity would increase workers' wages, whereas the pass-through of reduced payment rates to costs throughout the supply chain would reduce wages. Over time, labor markets would adjust, and the effect on average wages economywide would reflect only enhancements from increased productivity, in CBO's assessment. In the long run, productivity enhancements brought on by lower payment rates to providers would increase the effective labor supply and, ultimately, GDP. However, although the use of health care services would rise under all five single-payer options in this paper, the increase would be smaller in the options with lower payment rates than in those with higher payment rates.

The fifth channel is the single-payer system's effect on health outcomes. Under each of the single-payer systems that CBO analyzed, almost all U.S. residents would be enrolled, resulting in greater insurance coverage than under current law.<sup>6</sup> Insurance coverage has been shown to improve health outcomes and reduce mortality among people in their prime working years (ages 25 to 54). Those improvements would increase individuals' longevity, which in turn would increase the size of the labor force over time. Moreover, improved mental and physical health would increase workers' labor productivity and, ultimately, their earnings.

The sixth channel operates through the inclusion of LTSS benefits in a single-payer system. Including those benefits would reduce OOP spending and reimburse beneficiaries for some care—provided by family, friends, and nonprofit organizations—that is unpaid under current

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<sup>5</sup> The percentage of spending on administration under the single-payer systems that CBO analyzed would be smaller than that under current law for several main reasons: A single-payer system would not face the fragmentation, complexity, and duplication that stem from complying with different state regulations, providing different employment-based benefits, and negotiating different payment rates with many groups of providers; it would not pay state taxes and regulatory fees, incur costs for salespeople and brokers, or earn profits; and it would experience greater economies of scale than most private insurers from spreading the fixed costs of information technology over a larger total amount of spending and from being able to specialize more in its claims processing. For additional discussion, see CBO's Single-Payer Health Care Systems Team (December 2020), pp. 144–156.

<sup>6</sup> The main exception, CBO projects, is that about 2 million of the roughly 10 million U.S. residents not lawfully present in the country in 2030 would not enroll in the single-payer system because of fears about providing information to the federal government or challenges related to language or literacy.

law. Along with expanding access to home- and community-based services (HCBS), the benefits would increase the number of paid hours worked in the HCBS sector. Under CBO's illustrative option, the payment rates for those paid hours would also be 7 percent higher than under current law. Furthermore, the expanded LTSS benefit would allow some previously unpaid caregivers to increase their hours worked at other—often higher-paying—occupations in the economy. That effect would increase private saving, nonhealth consumption, and GDP through an increase in disposable income and the effective labor supply.

CBO estimates that, under a single-payer system, the increase in the demand for care would exceed the increase in supply, resulting in more unmet demand. Overall access to care would rise at the same time that congestion increased. The effects on access to care differ for different groups of people. For example, those who were uninsured or had high cost sharing under current law would experience an increase in their access to care. Access would decline for some people who had private insurance with low cost sharing under current law. Ultimately, patients' satisfaction with their health care could increase or decrease under a single-payer system, and access to care would be a major contributing factor.

In the long run, policymakers would need to consider how the single-payer system and payment rates to providers would affect the supply of care and medical innovation. The effects of a single-payer system on innovation are highly uncertain because profitability would probably increase for some types of innovations but decrease for other types, and the net effect on innovation as a whole is unclear. Although the government would set payment rates for providers and update them over time, it would do so without market signals from the private sector to guide those updates. Because payment rates to providers have long-term effects on the number of providers in the health care system, policymakers would need to consider the balance between budgetary pressures and the supply of care.

Under a single-payer system, households would increase their private saving over their life cycle and, on average, choose to work fewer hours over the course of their career. We estimate that GDP would be between 0.3 percent lower and 1.8 percent higher for the five single-payer health care systems analyzed in this paper relative to current law in 2030. Total nonhealth consumption under the single-payer system would increase by approximately 11.5 percent in 2030 relative to current law. Those effects do not reflect the implications of any financing mechanism and therefore reflect only the effects of the single-payer system itself. The change in GDP and nonhealth consumption is driven by the policies' effect on households' saving behavior and work decisions.

Although the health insurance coverage provided by the single-payer systems is similar for all households, the policy change from current law results in differential effects on households' decisions to work and save for people of different ages and incomes, in part because of asymmetries that exist under current law. For example, under current law, the prevalence of

employment-based health insurance varies by age and income. Those differences result in heterogeneous changes in the hourly wage rate households would receive under a single-payer system as employers passed along their savings from no longer paying for private health insurance premiums on behalf of their employees. We find that older households would experience an increase of between 1.3 percent and 4.7 percent in their total lifetime nonhealth consumption, and younger households would experience an increase of between 10.9 percent and 22.4 percent in their nonhealth consumption levels relative to current law. Lower-income households across the age distribution would see the largest percentage increases in their consumption levels.

On average, households would choose to work fewer hours and retire at younger ages under a single-payer health care system. The increase in after-tax wage rates would generate a substitution effect whereby workers would choose to work more hours in response to the higher return on working additional hours. However, that effect would be dominated by the positive income and wealth effects generated by the single-payer system as disposable income increased and OOP expenses were reduced and premiums eliminated. The reduction in hours worked would be largest among lower- and middle-income households because those groups would see the largest percentage increase in wage rates and reductions in OOP expenses and premiums. Hours worked in the bottom tercile of the income distribution would rise, however, when LTSS benefits were included and the provision of care by previously unpaid caregivers became part of the economy's labor supply. The decline in hours worked among the top tercile of earners would be comparably smaller because the increase in wages and reductions in OOP expenses and premiums would be comparably smaller among higher-income and higher-wealth households as a percentage of income.

The effects of the five single-payer systems presented above do not include the effects of financing the system. In CBO's analysis of the economic effects of financing a large and permanent increase in government spending, the type of financing mechanism used significantly alters the magnitude of the effects and the distribution of those effects across households.<sup>7</sup> Additionally, the payroll and income tax policies analyzed in that paper reflect only a subset of possible financing mechanisms. Options 2 and 5 correspond to the smallest and largest increase in federal subsidies for health care of the five single-payer options. As a share of GDP, the increase in federal subsidies by 2030 are estimated to be 4.9 percent and 9.7 percent, respectively. Those increases in federal subsidies are similar in magnitude to the 5 percent and 10 percent increases in spending projected in CBO's earlier analysis.<sup>8</sup> By combining the effects from the two papers, we can approximate the effects of a fully financed single-payer system

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<sup>7</sup> See Nelson and Phillips (2021).

<sup>8</sup> Ibid.

when the system is financed by either a payroll tax or an income tax. CBO estimates that, depending on the specifications of the single-payer system and the tax policy used to finance it:

- GDP would be approximately 1.0 percent to 10.0 percent lower by 2030 relative to current law, and
- Aggregate nonhealth consumption per capita could increase by 3.0 percent or decline by 7.0 percent.

Finally, in CBO's assessment—regardless of the system's specification or the tax used to finance it—a fully funded single-payer system would result in higher lifetime nonhealth consumption among lower-income households and lower lifetime nonhealth consumption among higher-income households. Moreover, hours worked would be lower for most households across the income distribution.

The effect of switching to a single-payer health care system on the economy would be complex, and this paper does not aim to quantify every factor of that transition. Factors of a single-payer system that are explicitly not reflected in this paper's results include the effects of financing such a system and the system's effect on business dynamism, workers' job mobility, states' budgets and their policy response, as well as some of the effects on unpaid caregivers when the system includes an LTSS benefit. For example, if the system was financed through government borrowing, an increase in tax rates, or reductions in other types of government spending, the net effect on the economy and the distributional implications would be different. We discuss those important effects qualitatively, but they fall beyond the scope of the quantitative analysis presented in this paper. Future research into the economic effects of those factors would be valuable.

## **Timing of Policy Changes in CBO's Simulations**

Relative to the baseline economy including current law, the single-payer system as analyzed in this paper and its measures are announced at the end of 2020 and implemented in the beginning of 2021.<sup>9</sup> We adjusted noninvestment government purchases beginning in 2021 to ensure that the single-payer system is deficit neutral (that is, the path of government debt is unaffected by the policy change) in each period of analysis (accounting for budgetary feedback).<sup>10</sup> That financing assumption simplifies the analysis because it does not alter households' saving and work

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<sup>9</sup> CBO's 2020 analysis implemented the policy beginning in 2025; see CBO's Single-Payer Health Care Systems Team (2020). Implementing the policy immediately in 2021 allows this paper's results to be more easily compared with those in CBO's 2021 analysis that used the same timing; see Nelson and Phillips (2021).

<sup>10</sup> All existing Medicare payroll taxes remain in place following the implementation of the single-payer system.

decisions.<sup>11</sup> However, this analysis does not reflect any economic effects that would result from an alternative financing mechanism, which could be significant in size.

In the benchmark economy—that is, the economy under current law—debt as a share of GDP follows CBO’s projection through the year 2030.<sup>12</sup> In 2031, for all simulations, noninvestment government spending begins to adjust to stabilize the debt-to-GDP ratio by 2040. Although the long-run debt-to-GDP ratio differs across simulations, the level of the debt remains the same through 2030 to ensure that the economic effects captured reflect the single-payer system and not changes in the path of government debt.

## **Five Illustrative Single-Payer Health Care Systems**

The five single-payer systems analyzed in this paper are based on Medicare’s fee-for-service (FFS) system under current law.<sup>13</sup> The five options differ by their degree of cost sharing, payment rates to providers, and the inclusion of LTSS benefits:

- Option 1 has higher payment rates, higher cost sharing, and no LTSS benefits;
- Option 2 has lower payment rates, higher cost sharing, and no LTSS benefits;
- Option 3 has lower payment rates, lower cost sharing, and no LTSS benefits;
- Option 4 has higher payment rates, lower cost sharing, and no LTSS benefits; and
- Option 5 has higher payment rates, lower cost sharing, and LTSS benefits.

Health insurance coverage would be nearly universal under the program. Under each of the five options, the single-payer system would replace comprehensive private health insurance plans and Medicare. It would also replace all of the coverage provided by Medicaid—except that under most of the options, Medicaid would continue to provide LTSS, which help people with functional or cognitive limitations perform routine daily activities for an extended period.

All five of the options that CBO analyzed have some major features that are consistent with proposals for single-payer systems introduced in the 116th Congress (2019–2020). Those features include coverage and eligibility, payment method, and administration.

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<sup>11</sup> See Nelson and Phillips (2021) for a discussion of how financing a large and permanent increase in government spending affects the economy.

<sup>12</sup> See Congressional Budget Office, *The 2020 Long-Term Budget Outlook* (September 2020), [www.cbo.gov/publication/56516](http://www.cbo.gov/publication/56516).

<sup>13</sup> A comprehensive description of the scenarios can be found in CBO’s Single-Payer Health Care Systems Team (2020).

## **Coverage and Eligibility**

Each option would cover a broad range of medical services, including services provided by hospitals, physicians, and other health care providers; prescription drugs; dental, vision, and hearing care; and school-based health services. In addition, each option would cover nearly all residents of the United States, including those who were not lawfully present in the country. Private insurance would not be allowed to cover services that are covered under the single-payer system.

## **Payment Method**

Each option would use a fee-for-service approach—similar in many ways to the Medicare FFS program—in which health care providers would be paid for each service or bundle of services they performed. Under that approach, the federal government would set payment rates for health care administratively, including prices for prescription drugs, and would pay providers directly. Providers would not be owned or operated by the single-payer system. Providers would be allowed to furnish covered services outside the single-payer system, and be paid only by patients, if those providers opted not to receive any payment from the system during a given year. Private insurance for such services would not be allowed. (Seeing a provider outside the single-payer system would not preclude patients from receiving care from providers within the system.) CBO estimates that spending on care outside the single-payer system would range from \$47 billion to \$124 billion in 2030, depending on the policy option being considered.<sup>14</sup>

## **Administration**

Under each option, the single-payer system would use the administrative processes of the Medicare FFS program, including tools to manage enrollees' use of health care and monitor providers only to the extent that the Medicare FFS program does in CBO's baseline budget projections. CBO assumed that such utilization management would be less intensive, on average, under the single-payer system than it is projected to be under private insurance in CBO's baseline. If the single-payer system was structured differently and included more utilization management and fraud detection, administrative spending would also be higher than CBO estimates, but use of and spending for health care would be lower.

CBO differentiated the five options it analyzed by varying three key features: payment rates to providers, degree of cost sharing, and the inclusion of LTSS as a benefit.

## **Payment Rates**

CBO developed two scenarios for payment rates (higher and lower) that have different payment rates for providers and different prices for prescription drugs. In the scenario with higher payment rates, the average payment rates for health care providers under the single-payer system would be close to the average of the rates that CBO projects for all payers (including government

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<sup>14</sup> See Exhibit 13-1 in CBO's Single-Payer Health Care Systems Team (2020), p. 142.

programs and private insurers) in 2030 under current law. Those single-payer rates would be the same as or higher than Medicare's projected average payment rates, and they would be lower than the average rates projected to be paid by private health insurers. In 2030, prescription drug prices would be lower than the prices that Medicare would pay in 2030 under current law, CBO estimates, and lower than the average prices that private insurers would pay.

In the other scenario, average payment rates for providers would be lower than the average of the rates that CBO projects for all payers in 2030 under current law. Those single-payer rates would be the same as or higher than Medicare's projected average payment rates, and they would be considerably lower than the average rates projected to be paid by private health insurers. In 2030, prices for retail prescription drugs would be lower than under the scenario with higher payment rates.

Under all five options, providers would be allowed to furnish covered services outside the single-payer system if they agreed not to receive any payment from the system during a given year.<sup>15</sup> Private insurance would not be available to cover the cost of those services under the five options, so patients would have to pay the full price of those services out-of-pocket.

### **Cost Sharing**

CBO developed two scenarios for cost sharing (higher and lower), which includes copayments and other out-of-pocket spending. In the higher cost-sharing scenario, people with income below 150 percent of the federal poverty level would pay nothing out of pocket for covered medical services or retail prescription drugs. Everyone else would pay 7.5 percent of the total amount spent on those services, on average, but certain preventive services would be exempt from cost sharing. (That 7.5 percent share would be about one-third less than the average cost sharing for enrollees in private health insurance plans and Medicare under current law.) As a result, out-of-pocket payments would cover about 5 percent of total spending on covered services and retail prescription drugs in the higher scenario, on average. In the lower scenario, no one would pay out of pocket for covered medical services. People with low income would also pay nothing out of pocket for prescription drugs, whereas other people would pay about 3 percent of drug costs. As a result, out-of-pocket payments would cover about 2 percent of total spending on retail prescription drugs in the lower scenario, on average.

### **Long-Term Services and Supports**

In the option that includes LTSS coverage, benefits would be much broader than those provided under current law through Medicaid or private insurers. The single-payer system would cover all services that are currently available through any state Medicaid program, including institutional

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<sup>15</sup> CBO estimates that, depending on the option, between 0.7 percent and 1.8 percent of physicians would choose to opt out. For more information, see CBO's Single-Payer Health Care Systems Team (2020), pp. 76–77.

and community-based care. Home- and community-based care services would be provided by professional caregivers, by family members or friends, and by nonprofit organizations (such as Meals on Wheels). Eligibility for LTSS benefits would be less restrictive than it is projected to be under Medicaid. Services would be available to anyone requiring assistance with one or more activities of daily living, such as bathing or dressing, or with instrumental activities of daily living, such as managing finances or home maintenance. In the options without an LTSS benefit, current federal and state funding of LTSS would continue. Additionally, under CBO's illustrative option, the payment rates for HCBS workers would be 7 percent higher than projected under current law.

### **National Health Expenditures and Federal Subsidies for Health Care**

The five options also differ in their effect on NHE and federal subsidies for health care relative to current law (see [Table 1](#)). Options 2 and 3, which have lower payment rates to providers, result in the largest reductions in NHE among the five programs and smaller increases in federal subsidies for health care. The decline in NHE under Options 2 and 3 is driven by reduced payment rates and smaller administrative expenses for health care providers and payers. However, Options 2 and 3 have the smallest increase in the use of care among the five options.

If payment rates to providers are kept fixed, an increase in cost sharing within the single-payer system further reduces NHE and federal subsidies for health care. Options 1 and 2 have higher cost-sharing requirements than the other three options, and they result in a smaller increase in the use of care and a smaller reduction in out-of-pocket spending on health care than options with the same benefits and payment rates to providers.

### **Analytic Method and Model Details**

To illustrate the economic effects of the various single-payer options, CBO uses its life-cycle growth model (also known as an overlapping-generations model). In the model, a period is equal to one year, and the economy is populated with heterogeneous households, perfectly competitive firms, and a government that collects tax revenues and makes purchases and transfers. The environment is a large open economy in which foreign investors purchase a fixed proportion of the domestic government's debt in each period. We first run a benchmark simulation of the economy in which annual government spending is adjusted so that the level of federal debt held by the public as a share of GDP matches CBO's projections.<sup>16</sup> We then simulate the economy under the policy changes that occur following the implementation of a single-payer system and compare the model's results with those from the benchmark simulation.

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<sup>16</sup> See Congressional Budget Office (2020).

## Households

Households are modeled as heterogeneous individuals, and they differ by age, wealth, labor productivity, average lifetime earnings, and ability to save.<sup>17</sup> Individuals in households become economically active at age 21 and live for a maximum of 80 periods. Each successive generation is larger than the last as the population grows over time. In each period of life, households face age-dependent mortality risk. From ages 21 to 75, households' labor productivity is uncertain and idiosyncratic. All households start receiving old-age and survivors' insurance benefits at age 65; however, households optimally choose their labor supply until age 75, at which point everyone retires. In each period, households also make a consumption-saving decision.

Households are altruistic and derive utility from leaving bequests to younger households when they die. All bequests in each period are collected and redistributed to surviving households in accordance with their age and income level.

In each period, households can receive income through their labor and asset holding, in addition to receiving transfers from the government and bequests from older generations. Households pay taxes on their taxable income and consumption and are required to pay for their OOP health care expenses, which vary by age and income and include cost-sharing payments, spending on services not covered by insurance, and payments covered by health savings accounts.

Households also pay for their share of health insurance premiums. Households' OOP expenses and premiums are exogenous to the model, and therefore households' work and saving decisions do not affect their expenses. The remainder of households' resources are then split between consumption and saving among households that have access to financial markets. Nonsaver households that do not have access to financial markets spend the remainder on consumption.

## Firms

In CBO's model, the economy has one sector, and firms are perfectly competitive and have access to a constant-returns-to-scale Cobb-Douglas production technology that uses capital and labor as inputs. In addition to the endogenous factors of production, exogenous growth occurs in both economywide productivity and population size.

## Government

In the benchmark simulation, the government collects revenues from a progressive income tax on labor, a flat tax on asset income, payroll taxes, excise taxes, and a lump-sum tax on households. The government operates an old-age and survivors' insurance program that follows the current law's benefit formula for the primary insurance amount. The program uses households' average labor income as a proxy for households' average indexed monthly earnings. The government also makes lump-sum transfers to households on a per capita basis that account for outlays for

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<sup>17</sup> An exogenous proportion of households is precluded from accumulating wealth in the model. Although those nonsavers can still choose how much to work in each period, they consume their disposable income in each period of life.

other transfer programs. All bequests are redistributed to households; however, bequest amounts vary by households' age and level of labor productivity. The government purchases goods and services, but those purchases are valued independent of consumers' private consumption and therefore do not affect households' behavior. The government is free to operate a budget surplus or deficit in any given period, and it pays an interest rate on its debt that is proportional to the rate of return on capital.

### **Fiscal Closure**

In CBO's OLG model, a necessary condition for economic growth to converge on its balanced growth path is that government debt as a share of output must stabilize at some point in the future. The current-law benchmark scenario already shows that, absent adjustments, the primary deficit as a share of GDP would increase perpetually. As a result, at some future point, the model will require a policy adjustment either through changes in spending or through revenues to stabilize the debt-to-GDP ratio. That restriction is often referred to as a closure rule or fiscal closure.<sup>18</sup> To limit the effects of the fiscal closure assumption on the analysis, the model begins reducing noninvestment government purchases in 2031 to stabilize the debt-to-GDP ratio by 2040.<sup>19</sup>

### **Model Calibration and Policy Design**

The benchmark model reflects fiscal policy under current law in 2020 and CBO's projection of the debt-to-GDP ratio from 2020 through 2030. The model takes households' premiums and OOP health care expenses—households' share of health insurance premiums, medical expenses, and LTSS expenses—as exogenous. The series follows CBO's current-law projections by age and income level (see [Figure 1](#)). In addition to matching the household-level age and income distribution for health care expenses, the model targets CBO's projection of aggregate OOP expenses and households' share of health insurance premiums as a share of GDP (see [Table 2](#)).

The single-payer system is reflected in the model through its effects on employment-based health insurance benefits, OOP expenses, economywide productivity, payment rates to health care providers, the health of households, and the inclusion of self-directed services when LTSS is an included benefit (see [Figure 2](#)). Modeling those effects relies on external estimates of the single-payer system's effect on various outcomes.<sup>20</sup>

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<sup>18</sup> For a discussion of the effects of fiscal closing assumptions, see Rachel Moore and Brandon Pecoraro, "Dynamic Scoring: An Assessment of Fiscal Closing Assumptions," *Public Finance Review*, vol. 48, no. 3 (April 2020), pp. 340–353, <https://doi.org/10.1177/1091142120915759>.

<sup>19</sup> Changes in noninvestment government purchases do not have any short-run multiplier effects and therefore do not affect aggregate demand.

<sup>20</sup> See CBO's Single-Payer Health Care Systems Team (2020).

The first effect of the single-payer system comes from eliminating employment-based health insurance benefits. In the model, workers' wages are increased so that their total compensation remains unchanged if they continue to work the same number of hours. That effect on households' wage rate differs by age and income groups to maintain the age and income profile of health insurance benefits as an aspect of total labor compensation.

Total labor compensation is composed of taxable wages and salaries as well as the cost of employee benefits, including health insurance. As a result, the redistribution of health insurance benefits to taxable wages does not change total labor compensation; however, it does show up in the effects on nonhealth consumption and capital investment (see [Table 3](#)). Under a single-payer system, benefits that were provided by employers are instead provided by the government. In this paper, the cost of the single-payer system is financed through a reduction in noninvestment government purchases, which may lead the government to pull resources from sources outside of domestic production. Although that approach results in the change in aggregate expenditures exceeding the change in GDP, it allows the model to better capture household behavior in response to a shift to a single-payer system that abstracts from the effects of the financing of the program.<sup>21</sup>

The second effect of a single-payer system is a reduction in households' expenses for health insurance premiums and OOP health care, which vary among the five options. Within each option, the reduction in premiums and OOP expenses varies by age, income, and birth cohort. Although the change in insurance coverage among Medicare recipients is unaffected by the single-payer system, they do experience reductions in expenses because they no longer have to pay premiums they do under current law. The change in expenses among people who are eligible for Medicaid under current law is relatively small.<sup>22</sup> However, the reduction for those with marginally higher incomes is larger because they are ineligible for Medicaid, and expenses make up a larger proportion of their disposable income. As households' income rises, the percentage reduction in expenses declines. By contrast, because of the higher rates of insurance coverage among higher-income households, the average reduction in health insurance premiums is largest among middle- and high-income households. In addition to tracking the variance across the income distribution, the reduction in OOP expenses is consistent with CBO's estimate of the aggregate drop in OOP spending under the five illustrative single-payer systems. The average

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<sup>21</sup> This approach is analogous to the government's providing firms with a subsidy that exactly offsets their health insurance labor costs and that is passed through 100 percent to workers' wages. The subsidy is then financed by a reduction in noninvestment government purchases so that it does not affect the path of government debt or the behavior of households. In this case, noninvestment government purchases become negative, so resources must be pulled from a source outside of domestic production.

<sup>22</sup> Households below 150 percent of the federal poverty line are subject to zero cost sharing, whereas higher-income households maintain the degree of cost sharing specified in the policy.

reduction in premiums and OOP spending across the five policy options ranges from -35 percent to -71 percent of current-law levels (see [Table 4](#)).

The third effect of the single-payer system is the increase in economywide productivity that comes from the reduction in administrative expenses within the health care sector. Under the five single-payer systems, the reductions in aggregate administrative expenses within the health care sector (for both payers and providers) are between \$533 billion and \$562 billion in 2030—or approximately 1.8 percent of CBO’s projection of current-law GDP in 2030. In the model, the economywide productivity level is scaled up by the dollar value of the reductions in administrative costs relative to CBO’s current-law GDP projection (see [Table 5](#)).

The fourth effect is the change in payment rates to providers, which varies among the five single-payer options. When payment rates to providers are reduced, wages are reduced and productivity is increased as providers make changes to provide care using fewer resources. Under the options with lower payment rates, the reduction in NHE attributable to the change in payment rates under the single-payer system is between \$508 billion and \$530 billion in 2030. In this paper, we split the reduction in NHE that comes from a cut in payment rates evenly between changes in wages and productivity in the short run; however, over time the effect on the economywide wage rate dissipates, and only the effect on productivity remains.

The fifth effect of the single-payer system modeled in the OLG framework is on the health of individuals, which enters the model in two ways. First, higher levels of insurance coverage have been shown to reduce the mortality rate of some demographic groups. To incorporate that aspect of the policy change into the model, we use a central estimate from the empirical literature so that, for each percentage point reduction in the rate of uninsured people within a given age and income group, the mortality rate is reduced by 0.5 percent for those ages 45 to 64.<sup>23</sup> The second way that improved health outcomes affect the economy is through increases in workers’ labor productivity. Like the effect on mortality, the increase in workers’ productivity depends on their age, income level, and the proportion of workers within that group that gain insurance coverage through the single-payer system. Using the empirical literature as a guide, for each percentage point reduction in the rate of uninsured workers, we find that the average worker’s productivity

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<sup>23</sup> The central estimate was derived from experimental and quasi-experimental studies, including Amy Finkelstein and others, “The Oregon Health Insurance Experiment: Evidence From the First Year,” *Quarterly Journal of Economics*, vol. 127, no. 3 (August 2012), pp. 1057–1106, <https://doi.org/10.1093/qje/qjs020>; Jacob Goldin, Ithai Z. Lurie, and Janet McCubbin, “Health Insurance and Mortality: Experimental Evidence From Taxpayer Outreach,” *Quarterly Journal of Economics*, vol. 136, no. 1 (February 2021), pp. 1–49, <https://doi.org/10.1093/qje/qjaa029>; Bernard Black and others, *Simulated Power Analyses for Observational Studies: An Application to the Affordable Care Act Medicaid Expansion*, Working Paper 25568 (National Bureau of Economic Research, March 2021), <https://doi.org/10.3386/w25568>; Sarah Miller, Norman Johnson, and Laura R. Wherry, “Medicaid and Mortality: New Evidence From Linked Survey and Administrative Data,” *Quarterly Journal of Economics*, vol. 136, no. 3 (August 2021), pp. 1783–1829, <https://doi.org/10.1093/qje/qjab004>; and Robert Kaestner, “Mortality and Science: A Comment on Two Articles on the Effects of Health Insurance on Mortality,” *Econ Journal Watch*, vol. 18, no. 2 (September 2021), pp. 192–211, <https://tinyurl.com/4yywp79t>.

increases by 0.015 percent.<sup>24</sup> On average, improvements in health increase wages the most among younger and lower-income households because of the lower rates of insurance coverage among those groups under current law.

The final effect applies only to Option 5. The inclusion of LTSS benefits not only reduces OOP expenses but also allows a portion of care hours that are currently being provided without compensation by family, friends, and nonprofit organizations to transition to paid care (through self-directed services). The increase in taxable income is distributed uniformly across the working-age population through a lump-sum source of taxable income. In CBO’s assessment, approximately 1,400 hours of unpaid care per user that are being provided under current law would transition to paid care under a single-payer system that includes LTSS benefits.<sup>25</sup> In aggregate, for the 14 million LTSS users under current law, the transition from unpaid to paid care would directly increase aggregate hours worked in the economy by around 3.0 percent.<sup>26</sup> Although LTSS caregivers receive a 7 percent increase in their wage rate under the fifth single-payer option, those hours are still concentrated among workers in the bottom tercile of the income distribution, so that the increase in hours worked results in a comparably smaller increase in effective labor. Moreover, the increased access to HCBS allows some previously unpaid caregivers to increase their hours worked at other occupations in the economy. Those other jobs often have higher wages than the average wage earned by paid HCBS workers.

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<sup>24</sup> CBO’s central estimate of the effect of a change in health insurance coverage and health outcomes on wages reflects the range of estimates found in the empirical literature. See Robert Jäckle and Oliver Himmler, “Health and Wages: Panel Data Estimates Considering Selection and Endogeneity,” *Journal of Human Resources*, vol. 45, no. 2 (2010), pp. 364–406, <http://jhr.uwpress.org/content/45/2/364.short>; Jodi Messer Pelkowski and Mark C. Berger, “The Impact of Health on Employment, Wages, and Hours Worked Over the Life Cycle,” *Quarterly Review of Economics and Finance*, vol. 44, no. 1 (2004), pp. 102–121, <https://doi.org/10.1016/j.qref.2003.08.002>; Kerwin Kofi Charles, “The Longitudinal Structure of Earnings Losses Among Work-Limited Disabled Workers,” *Journal of Human Resources*, vol. 38, no. 3 (2003), pp. 618–646, <https://doi.org/10.3368/jhr.XXXVIII.3.618>; YoonKyung Chung, “Chronic Health Conditions and Economic Outcomes” (draft, Korea Energy Economics Institute, October 2013), [www.sole-jole.org/assets/docs/14225.pdf](http://www.sole-jole.org/assets/docs/14225.pdf) (1 MB); Bruce D. Meyer and Wallace K. C. Mok, “Disability, Earnings, Income and Consumption,” *Journal of Public Economics*, vol. 171 (2019), pp. 51–69, <https://doi.org/10.1016/j.jpubeco.2018.06.011>; Renuka Tipirneni and others, “Association of Expanded Medicaid Coverage With Health and Job-Related Outcomes Among Enrollees With Behavioral Health Disorders,” *Psychiatric Services*, vol. 71, no. 1, pp. 4–11, <https://doi.org/10.1176/appi.ps.201900179>; Renuka Tipirneni and others, “Changes in Health and Ability to Work Among Medicaid Expansion Enrollees: A Mixed Methods Study,” *Journal of General Internal Medicine*, vol. 34, no. 2 (2019), pp. 272–280, <https://tinyurl.com/2pxrd73y>; Benjamin D. Sommers and others, “Three-Year Impacts of the Affordable Care Act: Improved Medical Care and Health Among Low-Income Adults,” *Health Affairs*, vol. 36, no. 6 (2017), pp. 1119–1128, <https://tinyurl.com/23ubxa8p>; and John Cawley, Aparna Soni, and Kosali Simon, “Third Year of Survey Data Shows Continuing Benefits of Medicaid Expansions for Low-Income Childless Adults in the U.S.,” *Journal of General Internal Medicine*, vol. 33, no. 9 (2018), pp. 1495–1497, <https://tinyurl.com/n2t4dhr2>.

<sup>25</sup> The transition of unpaid to paid hours under a single-payer system includes the increase in care use following the expansion of LTSS benefits and the transition of existing unpaid care hours to paid care. In CBO’s assessment, some unpaid care will persist under such a system, but it will make up a smaller share of total care hours.

<sup>26</sup> See Exhibit 8-3 in CBO’s Single-Payer Health Care Systems Team (2020), p. 105.

## Economic Effects of the Single-Payer Health Care Systems

Our analysis of the effects of the five illustrative single-payer health care systems on economic aggregates through 2030 reflects a limited set of channels through which such a large policy change would operate (see [Table 6](#); for additional channels not reflected in the model, see the section “Other Economic and Distributional Effects of Single-Payer Health Care Systems”). The five options vary by payment rates to providers, the degree of cost sharing, and the inclusion of LTSS benefits. In general, the options with lower payment rates result in a larger increase in nonhealth consumption and a smaller increase in health care utilization than the options with higher payment rates. Options with lower cost sharing result in a larger increase in nonhealth consumption and health care utilization than options with a higher degree of cost sharing. However, options with lower cost sharing also result in a smaller increase in the capital stock and a larger reduction in effective labor, resulting in a smaller increase in real GDP. Finally, the inclusion of LTSS benefits increases nonhealth consumption and health care utilization while resulting in the smallest increase in the capital stock and the largest reduction in effective labor of the five options.

The single-payer health care options affect the economy through six primary channels:

- Households’ total labor compensation is redistributed away from employment-based health care benefits to taxable wages and salaries.
- Households’ OOP health care costs are reduced, and their share of health insurance premiums is eliminated. Those reductions in OOP costs vary with the degree of cost sharing in the system and the inclusion or exclusion of LTSS benefits.
- Administrative costs within the health care sector are reduced, and that increased efficiency boosts productivity economywide, which in turn increases wages and interest rates.
- Lower payment rates to providers reduce workers’ wages and increase productivity.
- Reduced mortality rates and improved health affect households’ labor productivity, which in turn affects their earnings.
- For Option 5 only, expanded LTSS benefits affect the labor market and caregivers’ earnings.

Implementing a single-payer health care system would have different effects on households’ nonhealth consumption and hours worked depending on their income and age. Effects on other aspects of the economy and other demographic groups are beyond the scope of this paper.

### Labor

Effective labor under a single-payer system is lower than in the benchmark economy (see [Figure 3](#)). Effective labor includes two main components: the labor supply measured by the quantity of hours worked in the economy, and the productivity of those hours worked. Under a single-payer system, households choose to work fewer hours, on average, and retire at younger

ages (see [Figure 4](#)). The reduction in hours worked is partially offset by a rise in the average productivity level of workers (see [Figure 5](#)).

**Hours Worked.** Under a single-payer system, wages are affected through several channels. On average, after-tax wages are higher under a single-payer system that produces two countervailing pressures on households' willingness to work. Increased after-tax wages make work more attractive than other uses of a person's time, which encourages households to work more hours. However, increases in disposable income over the life cycle from higher after-tax wages, the elimination of premiums, and reduced OOP spending allow people to maintain the same standard of living while working fewer hours, which tends to decrease the number of hours that households work. Additionally, households tend to reduce their hours worked because of an increase in the marginal tax rate paid on labor income following the redistribution of employment-based health insurance benefits toward taxable wages. Under Option 5, a portion of unpaid LTSS performed by family, friends, and nonprofit organizations under current law would begin to be compensated and would thus constitute an increase in paid hours worked. Moreover, the expanded access to HCBS allows some previously unpaid caregivers to reduce unpaid care hours and increase their hours worked at other occupations in the economy. The net effect under all five single-payer options is a reduction in hours worked (see [Figure 4](#)).

**Average Labor Productivity.** Although aggregate hours worked under a single-payer system are lower than under current law, the average productivity level of those hours increases. The increase in productivity is driven by improvements in health outcomes and workers' efficiency. That effect is partially offset by a shift in the distribution of hours worked by workers with different levels of productivity. Under the first four single-payer options, higher-productivity workers reduce their hours worked less, on average, than their lower productivity counterparts. The wealth effect is smaller among workers with very high productivity than among those with lower productivity because the change in premiums and OOP expenses makes up a smaller portion on their disposable income. In response to lower reimbursement rates (Options 2 and 3), health care providers will probably improve capital utilization and labor productivity within their operations in addition to reducing wages. Because the one-time reductions in prices are so large relative to output, productivity improvements are likely to be realized throughout the supply chain of the health care sector. In our analysis, 50 percent of the reduction in NHE due to the lower payment rates to providers is made up for by increases in productivity. Lastly, under Option 5, the increase in paid hours worked due to the shift from unpaid care to paid care is concentrated in the bottom third of the income distribution. Although hours worked in higher-paying occupations also increases as caregivers are able to reduce unpaid care hours and increase hours worked at other, often higher-paying occupations, the former effect dominates and results in a smaller increase in the average productivity of the labor force than in the other four options.

**Distributional Effects on Hours Worked.** Following the switch to a single-payer health care system, households choose to work fewer hours over the course of their career and retire at

younger ages, on average. The reduction in hours worked is largest among low- and middle-income households in younger birth cohorts (see [Table 7](#)). The reduction in hours worked among the bottom third of the income distribution under Option 5 is dampened by the boost to hours worked from caregivers who were previously unpaid for their provision of LTSS. The reduction in hours worked is driven by the positive wealth effect generated by a single-payer system. Low- and middle-income households experience the largest percentage increase in disposable income and largest reduction in premiums and OOP expenses as a share of their gross earnings. Households in the top few percentages of the income distribution increase their hours worked over their lifetime, which partially offsets the reduction in hours worked among the remainder of the top tercile. For those very high income households, the substitution effect from the increase in the after-tax wage rate is large enough to dominate the wealth effect, resulting in an increase in their hours worked.

The reduction in hours worked reflects the optimal choices of households. Fewer hours worked increases the amount of time households have for other activities outside the labor market, such as home production, sleep, and leisure activities.

### **Capital Stock**

The productive capital stock rises relative to the benchmark economy under the single-payer scenarios (see [Figure 6](#)). Changes in the capital stock are driven solely by changes in households' private saving decisions because the policies are designed to be deficit neutral in each year. That design ensures that the capital investment is not being crowded in or out by changes in government borrowing. Under current law, a portion of households' private saving is driven by medical expenses that rise with age. Households save during their career to smooth nonhealth consumption over their lifetime and into their retirement. Under a single-payer health care system, health insurance premiums are eliminated and OOP expenses are reduced, which lowers the incentive to save among younger households. However, that effect is offset by the increase in households' disposable income earlier in their lives under a single-payer system, which increases both their nonhealth consumption and their private saving. Finally, the capital stock rises as households' health outcomes improve under a single-payer system and their life expectancy increases, which further increases households' saving.

### **Total Factor Productivity**

In CBO's assessment, a single-payer health care system will result in reductions in administrative costs among health care providers and payers (insurance companies). The reduction in administrative costs reflects a one-time increase in the productivity level of the economy as productive resources flow from the health care sector to other sectors of the economy. Under current law, the administrative costs of providing health care and paying for those services are decentralized. Transitioning to a single-payer system is projected to increase health care utilization at a lower cost through lower payment rates to providers and administrative expenses. The increase in productivity comes from an increase in services

provided with fewer inputs. However, the switch to a single-payer health care system constitutes a major change from the current system. Therefore, reductions in administrative costs under current law may not result in gains to efficiency within the health care sector or increases in economywide productivity.

### **Gross Domestic Product**

Three factors affect GDP (that is, as noted previously, without considering the economic effects of the mechanism used to finance the system). First, the increase in households' disposable income boosts their private saving and ultimately increases the aggregate capital stock. Second, effective labor declines under the single-payer system when both labor supply and labor productivity are considered. The average productivity per hour worked increases along with the size of the labor force as workers' health improves and the health care sector finds ways of providing care while utilizing fewer resources. However, the decline in hours worked dominates those effects. The final factor is the level of economywide productivity, which increases following the reduction in administrative costs in the health care sector.

Under the first four single-payer options, GDP is larger than GDP in the benchmark economy by 2030 (see [Figure 7](#)). The rise in the capital stock and economywide productivity outweighs the effect of the decline in hours worked on GDP. Under Option 5, which includes LTSS benefits, GDP is smaller than GDP in the benchmark economy through 2030; however, the difference gets smaller over time. The inclusion of LTSS benefits in Option 5 generates a positive wealth effect that induces workers to work fewer hours during their career. That effect is partially offset by two other factors. First, some care hours that are unpaid under current law become paid hours under a single-payer system. Second, the expanded access to HCBS allows some previously unpaid caregivers to increase their hours worked at other, often higher-paying occupations in the economy. Additionally, LTSS coverage under the single-payer system reduces the need for households to save for late-in-life LTSS expenses, which in turn offsets the rise in private saving due to increased disposable income under the single-payer system; the result is a smaller increase in the aggregate capital stock under Option 5 than under the other four options.

### **Aggregate Private Nonhealth Consumption**

Following the implementation of the single-payer system—notably, one not financed by any changes in tax policy or government borrowing—nonhealth private consumption per capita increases relative to the benchmark economy (see [Figure 8](#)). The elimination of households' share of their health insurance premiums and the reduction in OOP medical expenses account for approximately half of the rise in nonhealth consumption because they increase households' disposable income. Furthermore, under a single-payer system, employers would no longer provide their workers with health insurance because those benefits would now be covered by the single-payer system. As a result, employers' cost of providing health insurance benefits—including their share of insurance premiums—would be redistributed to taxable wages. However, the transition away from tax-advantaged health insurance premiums to taxable wages increases

households' taxes, which partially offsets the rise in pretax wages. The amount of the offset depends on the household's marginal tax rate. The reduction in payment rates to providers under Options 2 and 3 results in relatively smaller changes in nonhealth consumption because the lower wages are offset by higher labor productivity, which boosts labor income.

**Distributional Effects on Nonhealth Consumption.** Although aggregate lifetime nonhealth consumption is larger across all birth cohorts and income distributions following the implementation of a single-payer system, the effects vary only modestly among the five options (see [Table 8](#)). The percentage increase in lifetime consumption is larger for younger birth cohorts because a smaller proportion of their lifetime occurs before the policy implementation. Finally, the percentage increase is larger among lower-income households; however, the dollar increase is similar for the middle two-thirds of the income distribution, and high-income households experience the largest increase in nonhealth consumption over their lifetime.

The increase in nonhealth consumption is driven by the increase in households' disposable income and the reduction in premiums and OOP expenses over their life cycle. Under a single-payer system, the government pays for a larger proportion of health care. In this paper, those expenditures are financed by reductions in noninvestment government purchases that do not directly affect household behavior or the productive capacity of the economy.

### **Health Care Utilization**

Although private nonhealth consumption is higher under a single-payer system, this paper does not evaluate the effect on total health care spending or utilization. However, CBO has previously estimated that health care utilization—also referred to as use of care—would increase under all five single-payer options. The agency projected that, by 2030, real health care utilization would be higher by \$207 billion to \$718 billion (0.7 percent to 2.3 percent of GDP) than under current law. CBO also projects that, because of the reduced payment rates to providers and lower administrative costs in a single-payer system, national health expenditures would be between \$743 billion lower and \$290 billion higher than projected under current law (-2.4 percent and 0.9 percent of GDP, respectively). Real health care utilization could rise while NHE declined under some single-payer systems because the reduction in payment rates to providers and administrative expenses are larger than the increase in the use of care. Compared with single-payer options that have higher payment rates to providers, those with lower payment rates result in higher GDP and also result in lower health care utilization and more unmet demand for health care.

In addition to the increased access to and utilization of care, several factors could increase or decrease the quality of care, patients' satisfaction with their care, and patients' health, all of

which affect households' well-being.<sup>27</sup> Some of those effects are difficult to measure, however, and are likely to vary for different groups of people.

### **After-Tax Wage Rate**

CBO estimates that the after-tax wage rate would increase following the implementation of a single-payer health care system (see [Figure 9](#)). The change in the after-tax wage rate can be broken down into seven components. The first is the redistribution of employment-based health insurance benefits—which receive preferential tax treatment under current law—to taxable wages.<sup>28</sup> In CBO's assessment, employers' full cost savings will be fully passed through to employees' pretax wages. However, because the prevalence and value of employment-based health insurance benefits under current law vary by age and income, the change in the wage rate is not uniform for all workers. Middle-income households experience the largest percentage increase in their taxable wages. Employment-based health insurance is less common among lower-income workers and more common among higher-income workers. However, the value of health insurance benefits relative to total labor compensation is smaller among high-income households than among median earners, resulting in a smaller percentage increase in wages.

The second component comes from the offsetting effects of reduced payment rates to providers. Following an exogenous reduction in payment rates to providers, wages decline in the health care sector and throughout the supply chain, and providers use fewer inputs to provide health care, which results in an increase in labor productivity. In our analysis, the reduction in payment rates to providers is initially split evenly between reduced wages and improvements in labor productivity. Additionally, those changes are distributed evenly across the income distribution in percentage terms. In the long run, however, the effect on wages diminishes as labor markets adjust, so that only the effect on productivity within the health care sector remains.

The third component of the change in the after-tax wage rate applies only to Option 5, which includes an LTSS benefit that increases the wage rate among HCBS workers. In CBO's assessment, supply can fully meet the increased demand for HCBS under a single-payer system only if the wage rate for HCBS workers rises by 7 percent relative to current law. Because providing HCBS is among the lowest-income occupations in the economy, the effect of increased wages is concentrated in the bottom tercile of the income distribution.

The fourth component is the change in workers' labor productivity. As health outcomes improve with the expansion of insurance coverage, workers produce more output per hour worked than

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<sup>27</sup> For further discussion, see CBO's Single-Payer Health Care Systems Team (2020), pp. 157–164.

<sup>28</sup> Employers have many options available to them in response to no longer providing their workers with health insurance benefits. That includes changing wages, as done in this paper, but also other forms of compensation (such as retirement benefits). The effects of those alternative reactions are beyond the scope of this paper.

under current law. That effect is largest among those with lower rates of insurance coverage under current law, who tend to be younger and from lower-income households.

The fifth component is the change in the economywide capital-to-labor ratio, which drives the marginal product of labor. Under a single-payer system, the capital stock rises while the labor supply falls. That results in an increase in the marginal product of an additional hour of work, which is passed through to workers' wages across the income distribution.

The sixth component is the increase in economywide productivity following the reduction in administrative costs within the health care sector. The result is an increase in the wage rate across the income distribution.

Finally, the seventh component of the change in the after-tax wage rate is the average marginal tax rate on labor income. As workers' taxable labor income increases, households may move into higher tax brackets and pay a higher marginal tax rate on their next dollar of earnings. However, that effect is relatively small because our analysis does not include any changes in tax policy, and any change in revenues reflects only those that would occur under current-law tax policy.

### **After-Tax Rate of Return on Private Wealth**

The after-tax rate of return on private wealth declines marginally by 2030 under a single-payer health care system (see [Figure 10](#)). The rise in the capital-to-labor ratio reduces the marginal product of capital, which directly lowers the rate of return on private wealth. That effect is offset by the increase in economywide productivity, which increases the marginal product of capital, and the change in the composition of households' asset portfolio. Households' asset portfolio includes both productive capital and government debt. Government debt pays a lower rate of return than productive capital. Under a deficit-neutral policy change that induces an increase in household saving, a larger proportion of households' wealth is held in productive capital, which in turn increases the rate of return on private wealth.

## **Decomposing the Economic Effects Across the Five Channels**

The five channels through which a single-payer system affects the economy are complex and can push aggregates in the same or opposite direction. The net effect of the five channels discussed above can be approximated by adding the effects of the five channels on their own. The interaction between the five channels results in the total not being equal to the sum of its parts. Nevertheless, it can be useful to decompose the economic effects of the single-payer system to better understand the direction and magnitudes of the five main channels.

The decomposition of the five channels is similar in each of the five single-payer systems. In this section, we focus on Option 2, which has lower payment rates to providers, more cost sharing, and no LTSS benefit. To get a clearer picture of what is driving two aggregates, GDP and nonhealth consumption, we also look at the five channels' contributions to the changes in

economywide productivity, the labor supply, the capital stock, and the after-tax wage rate in 2030.

In 2030, under Option 2, GDP is 1.4 percent higher than projected under current law. The effect can be decomposed into five channels (see [Figure 11](#)):

- The redistribution of workers' compensation to taxable wages boosts real GDP by 1.2 percent because it increases both the labor supply, by increasing the after-tax wage rate, and the capital stock, because households save a share of the increase in their disposable income and accumulate new capital.
- The reduction in premiums and OOP expenses reduces GDP relative to current law by 3.0 percent. That reduction is driven by the positive wealth effect, which results in households' choosing to work fewer hours over the course of their career. Moreover, as households' OOP expenses late in life are lower under a single-payer system, they choose to reduce their saving, and the capital stock declines.
- The reduction in administrative costs increases GDP by 2.4 percent in 2030. The percentage increase in GDP is larger than the percentage increase in economywide productivity because the boost to after-tax wages increases households' disposable income and, ultimately, their saving and the capital stock.
- The reduction in payment rates to providers increases GDP by 0.9 percent in 2030. The effect of reduced payment rates on GDP is smaller from 2021 to 2025 because the payment rates are phased in over time. The increase in productivity that occurs when providers find ways to provide care with fewer resources is offset initially by reductions in labor costs throughout the supply chain in the health care sector. In the long run, the effect on wages diminishes as labor markets adjust.
- Lastly, improvements in people's health outcomes increase GDP in 2030 by 0.5 percent relative to current law, as the population and labor force grow and workers' average labor productivity increases.

The 11.3 percent increase in nonhealth consumption relative to current law is driven primarily by the first two channels. The redistribution of workers' labor compensation to taxable wages boosts their disposable income—even after accounting for the decline in hours worked and higher average marginal tax rates—which accounts for approximately 5.2 percentage points of the rise in consumption. The reduction in premiums and OOP spending directly reduces households' financial obligations, and OOP health care expenditures can now transition into nonhealth consumption (accounting for 4.0 percentage points of the rise in nonhealth consumption). The final three channels—reduced administrative expenses, reduced payment rates to providers, and improvements in health outcomes—account for 1.9 percentage points, 0.2 percentage points, and -0.1 percentage points of the change in consumption, respectively (see [Figure 12](#)).

## Other Economic and Distributional Effects of Single-Payer Health Care Systems

The transition to a single-payer health care system and its effect on households and the economy are complex. The model used in this paper and the policy effects generated by the illustrative single-payer systems quantify only some of the most salient features of such a system. Although the analysis is informative, it is necessarily incomplete. A single-payer health care system could affect the economy through a variety of other channels.

### Financing a Single-Payer Health Care System

The effects of the five single-payer systems presented in this paper do not include the economic effects of financing the system. CBO estimates that the five systems would increase the federal government's subsidies for health care by between \$1.5 trillion and \$3.0 trillion in 2030 relative to current-law projections, or between 4.9 percent and 9.7 percent of GDP, respectively.<sup>29</sup> The type of financing mechanism used to fund the increase in outlays would significantly affect the system's effect on the economy and the distributional results. CBO's analysis of the economic effects of financing a large and permanent increase in government spending quantitatively examined three different tax policies: a payroll tax, a flat income tax, and a progressive income tax. In that paper, the three tax policies increased government revenues by either 5.0 percent or 10 percent of GDP, depending on the simulation. As a result, the effects of a fully financed single-payer system can be approximated by combining the results from the financing paper and the results presented in this paper for Options 2 and 5.<sup>30</sup>

A single-payer system—financed by a payroll tax or income tax—would reduce GDP by 2030 by between 1.0 percent and 10.0 percent, depending on the specification of the single-payer system and the tax policy used to finance it (see [Table 9](#)). The change in nonhealth consumption ranges from an increase of 3.0 percent to a decrease of 7.0 percent by 2030 across the range of policies. Additionally, in CBO's assessment—regardless of the system's specification or the tax used to finance it—a fully funded single-payer system would result in higher lifetime nonhealth consumption among lower-income households and lower lifetime nonhealth consumption among higher-income households. Moreover, hours worked would be lower for most households across the income distribution.

The payroll and income tax policies discussed above reflect only a subset of possible financing mechanisms. For example, the economic effects of raising a given amount of revenue through a consumption tax are generally smaller than those of raising the same amount through an income tax. That is because a consumption tax, such as a value-added tax, does not distort households' incentives to save and invest because it does not directly alter the after-tax return on investment.

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<sup>29</sup> See CBO's Single-Payer Health Care Systems Team (2020).

<sup>30</sup> See Nelson and Phillips (2021).

Moreover, a consumption tax reduces the cost of time spent not working for pay relative to other goods; as a result, it could reduce hours worked through a channel like that of a tax on labor. That effect is offset, however, because a consumption tax reduces the value of existing wealth, which may result in some people working more. Other financing mechanisms are also possible and could result in economic and distributional effects that differ significantly from those presented here.

## **Labor Markets**

Potential benefits associated with a single-payer system are a reduction in “job lock” and greater job vocational mobility and business dynamism. A persistent concern about the employment-based insurance system is that workers who rely on that health insurance may choose not to change jobs, switch between full-time and part-time work, leave the labor market, become self-employed, or retire when eligible, so that they can retain health insurance coverage.<sup>31</sup> Conversely, a worker may choose full-time over part-time work, choose large employers over small employers, or switch to a less-rewarding job to obtain health insurance. Even though economists largely agree that job lock exists, evidence about its prevalence and, therefore, its implications for the overall labor market is less clear, because job lock affects different populations in different ways and to varying degrees.

Furthermore, a single-payer system that disconnects health insurance access from employment could alleviate job lock for workers and better allow labor turnover to self-employment or other jobs with a higher marginal product, potentially leading to greater productivity and efficiency through increased vocational mobility. A single-payer system effectively lowers the opportunity cost of starting a new business or becoming self-employed. Additionally, untying health insurance and employment removes a relative disadvantage for small businesses, which currently pay a higher percentage of payroll to provide health benefits to employees. It also removes some administrative and labor costs that new businesses currently bear as they navigate a complex system to select and provide health insurance coverage. Although a single-payer system could improve business dynamism, the effects are empirically difficult to quantify.

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<sup>31</sup> Empirical studies have generally found compelling evidence for the presence of job lock. A report by the Government Accountability Office reviewed 31 empirical studies published between 2001 and 2011 and found that 29 of them presented evidence consistent with the existence of job lock; see Government Accountability Office, *Health Care Coverage: Job Lock and the Potential Impact of the Patient Protection and Affordable Care Act*, GAO-12-166R (December 2011), [www.gao.gov/assets/gao-12-166r.pdf](http://www.gao.gov/assets/gao-12-166r.pdf) (0.7 MB). An earlier review of the literature published between 1991 and 2001 on the relationship between health insurance, labor supply, and job mobility also found that health insurance is a central, or at least important, determinant in retirement decisions, job mobility decisions, and labor supply decisions for secondary earners in households; see Jonathan Gruber and Brigitte C. Madrian, *Health Insurance, Labor Supply, and Job Mobility: A Critical Review of the Literature*, Working Paper 8817 (National Bureau of Economic Research, March 2002), [www.nber.org/papers/w8817](http://www.nber.org/papers/w8817).

## **Health Care Sector**

The implementation of a single-payer health care system would significantly alter the structure of the health care sector in the United States. How the sector adapts to that new structure is highly uncertain and could alter the economic effects of the program. For example, the implementation of a single-payer health care system would nearly eliminate the health insurance industry, which employed approximately 400,000 people in 2020. Additionally, health care providers' response to increased demand for care and changes in their payments rates could affect the supply of care and the types of care provided.

Under the options with lower payment rates, some physicians and nurses who were already in the workforce might respond by retiring or working fewer hours. However, under the scenario with higher payment rates, not all physicians and nurses would receive lower payment rates than they do under current law. (For example, general practitioners might see rates similar to or higher than those under current law.) CBO also anticipates that providers would respond to increases in the demand for care by increasing their capacity and adapting practice patterns to accommodate more patients. There is also significant uncertainty about how providers would respond to the changes under the illustrative options. CBO expects that many of the services that would have been provided by physicians who retire would instead be provided by new medical graduates or by other less costly health care professionals, such as nurse practitioners and physician assistants, which would decrease spending. In addition, because the average reduction in payment rates would vary among specialties under both payment scenarios, the differential changes in rates might encourage more medical graduates to go into primary care rather than into medical specialties. The supply effects ultimately depend on the design of the overall health care system, as well as its implementation and regulation.

## **LTSS Caregivers**

A single-payer system that provides benefits for LTSS would affect individuals who provide paid and unpaid care under current law. Providing unpaid care can be costly to caregivers' physical and mental health. The increased access to HCBS reduces the number of hours of care provided by the population of unpaid caregivers under current law, because LTSS users could substitute paid caregivers and care services for unpaid ones. The effects on unpaid caregivers' well-being and any subsequent effects on their health and on labor market outcomes are not quantified in this paper.

Paid HCBS caregivers are among the lowest-paid workers in the economy. When LTSS benefits are included in the single-payer system, the demand for HCBS rises. In CBO's assessment, the increase in demand would be fully met by increases in the supply of HCBS providers, in part

because of higher wages.<sup>32</sup> Under Option 5, HCBS caregivers receive a 7 percent increase in their wage. That increase could affect other spending programs, such as means-tested programs and Social Security, and revenues. However, those effects on government spending are beyond the scope of this paper.

### **Other Government Programs**

The single-payer system would affect other large government programs that may affect the economy outside of the channels quantified earlier in this report. For example, Social Security Disability Insurance (DI) currently provides Medicare benefits to some people under age 65, but disability benefits would be covered by the single-payer system. That change would decrease outlays from the DI trust fund.

### **State-Level Policy**

The illustrative single-payer systems affect states' budgets by eliminating a large portion of the Medicaid program, the Children's Health Insurance Program, and some discretionary grants. Under current law, Medicaid is jointly financed by the federal and state governments. States' responses to the change would vary and could have broad economic implications that are not included in this analysis. For example, states could respond to the budget surplus by growing their rainy-day funds (at least temporarily), reducing state tax rates, increasing spending on government purchases or public services, or a combination of all three.

### **Relative Price of Health Services**

Reduced cost sharing in the health care sector would result in a significant decline in the relative price between health and nonhealth goods and services. How the reallocation of productive resources responded to this drop in relative prices could have economic effects in the decades that follow the implementation of a single-payer system.

## **Limitations and Uncertainty of the Analysis**

The analysis presented in this paper is highly uncertain and subject to several limitations. In practice, CBO uses a suite of economic models to evaluate fiscal policy; the OLG model used in this paper is not the only input into CBO's more comprehensive approach. Although the effects documented in this report are useful, it is important to understand the sources of uncertainty and limitations. Broadly, they can be divided into two categories. The first category pertains to the limitations of the model, methods, and the policy design used in this paper. They provide context for the analysis in this paper, but if they were changed, the economic effects could be different.

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<sup>32</sup> HCBS workers, whose jobs generally do not require postsecondary education, make up only a small percentage of low-income workers who earn less than \$15 per hour, so there is a broad population from which additional workers could be drawn.

The second category pertains to uncertainty about aspects of the illustrative single-payer systems and their effects on the behavior of households and firms included in the model.

### **Limitations of the Model, Methods, and Policy Design**

The economic effects of fiscal policies greatly depend on their design and implementation, and policies with alternative specifications would generally have effects different from those presented in this paper. For example, immediate implementation of the single-payer system would prevent households from adjusting their consumption and saving decisions in anticipation of the policy change. Moreover, the implementation of a single-payer system would likely phase in over time because the scale of the policy change is significant. If the policies were announced in advance, the economic effects would differ from those in this analysis, particularly in the short run.

Moreover, the behavior of households is modeled as though they all have perfect information and foresight. Because of that structure, the results we present are approximate predictions. If households' saving behaviors differed—due to different or imperfect information—from those predicted by the model in response to changes in the after-tax wage rate, premiums, or OOP expenses over their lifetime, the resulting change in the capital stock would reflect that disparity, and the economic effects would be different. Moreover, the model does not include the risk of medical expense, which would be reduced under a single-payer system. The risk present under current law increases households' private saving, on average, suggesting that a reduction in risk would put downward pressure on saving and, ultimately, the capital stock.

The model does not include involuntary unemployment or underemployment. Any change in hours worked is therefore the result of optimal choices made by households in the model and does not capture all potential adverse effects the policy may have on the labor market directly. Furthermore, because households are able to choose how many hours they wish to work in each year, the model does not include the effects of broader structural norms that limit the menu of labor choices made available to workers (such as part-time versus full-time work). Additionally, all markets are in equilibrium in the short run in the model. It does not reflect any changes in aggregate demand driven by the direct effects of increases in government purchases or in tax rates associated with short-run frictions in the labor, goods, or factor markets.

### **Uncertainty**

A significant amount of uncertainty surrounds the economic effects quantified in this paper. The uncertainty can be decomposed across the six main channels through which the illustrative single-payer systems affect the economy in the OLG model.

First, the way employers respond to the reduced labor costs that result from no longer paying for a portion of their workers' health insurance benefits could differ from the treatment in this paper in a few ways. Employers could change other benefits, such as retirement contributions, that would shift total labor compensation into older ages. Furthermore, employers could redistribute

resources among their workers in a way that differs from the distribution of total compensation under current law. Finally, employers could pass through less than 100 percent of the savings to their workers, resulting in an increase in corporate profits and proprietors' income.<sup>33</sup>

Second, the way households respond to the elimination of health insurance premiums and reduced OOP expenses could deviate from the projection produced by the OLG model. Households in the OLG model have perfect information and perfect foresight over their expected future earnings and health care expenses. If households had less than perfect information or had more or less foresight, their saving and work decisions could be larger or smaller than the projection in this paper. Finally, the proportion of unpaid care that occurs under current law that transitions into paid work may be smaller or larger than CBO estimates.

Third, the reduction in administrative spending could result in less spillover of productive resources to other sectors. Furthermore, the effect could be more asymmetric across the relative productivity of capital and labor than is modeled in this paper. Additionally, the administrative cost reductions could be more or less than CBO projects, resulting in a different-sized effect on economywide productivity. Lastly, the effect could occur more slowly than projected in this paper, which passes through reductions in administrative spending to productivity immediately.

Fourth, the effects of reduced payment rates to providers could have larger or smaller effects on productivity within the health care sector. Additionally, a larger or smaller share of the reduced NHE due to reduced payment rates could get passed through to wages along the supply chain in the health care sector. For example, a portion of the effect could get realized in the form of lower rates of return on capital investment.

Fifth, the implications of increased health insurance coverage on health could be smaller or greater than projected in this paper. The single-payer system could have a smaller or larger effect on mortality than in CBO's assessment, which would result in slower or faster growth in the size of the population and the labor force. Those effects also have implications for households' life expectancy and therefore the saving rate during their career as they aim to smooth consumption over their life cycle. Additionally, a change in longevity has distributional implications because the effect of a single-payer system on mortality varies by age and income groups. Furthermore, improvements in health could affect workers' productivity in ways that differ from those modeled in this paper. It is also unclear how increases in workers' labor productivity would affect their earnings and if that pass-through would be the same across the income distribution.

Lastly, estimates about policy changes that affect access to LTSS benefits are subject to considerable uncertainty. The behavioral response of HCBS users and caregivers could differ

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<sup>33</sup> For more on the pass-through of policy changes to wages, see Dorian Carloni, *Revisiting the Extent to Which Payroll Taxes Are Passed Through to Employees*, Working Paper 2021-06 (June 2021), [www.cbo.gov/publication/57089](http://www.cbo.gov/publication/57089).

from those discussed in this paper. The rise in demand for HCBS could be higher or lower than CBO's estimate. Moreover, the way care is supplied and the subsequent labor market outcomes of HCBS workers and unpaid caregivers could differ from CBO's estimates.

# Figures

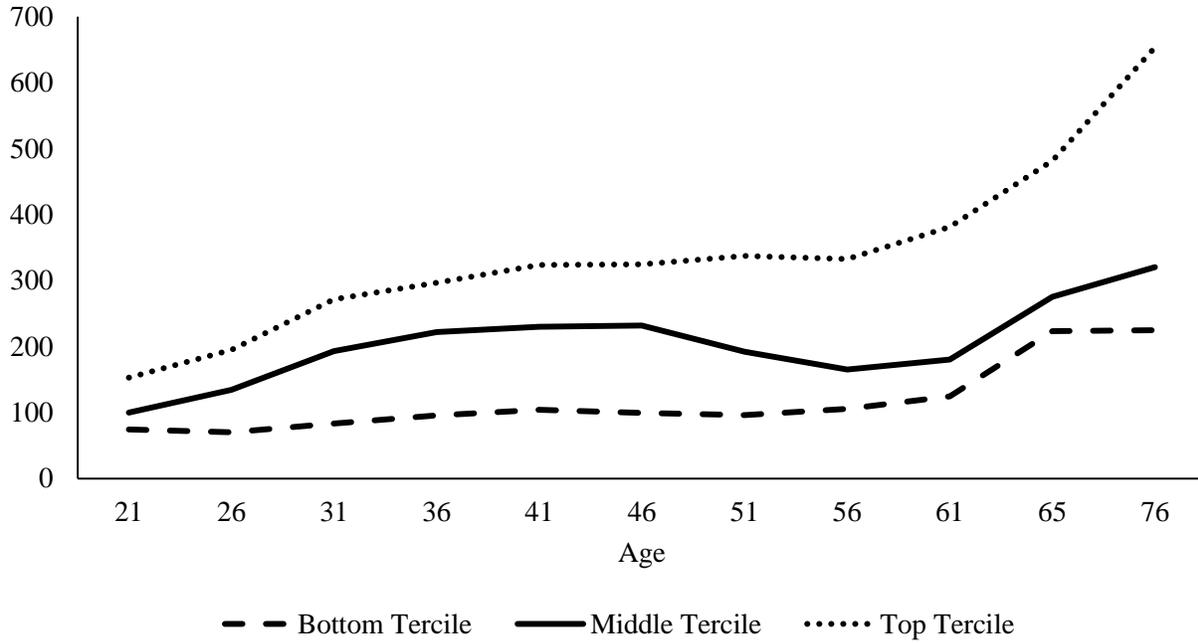
Figure 1.

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## Households' Average Out-of-Pocket Health Care Spending and Spending on Health Insurance Premiums Over the Life Cycle, by Income Group

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Index, 100 = Median Income at Age 21

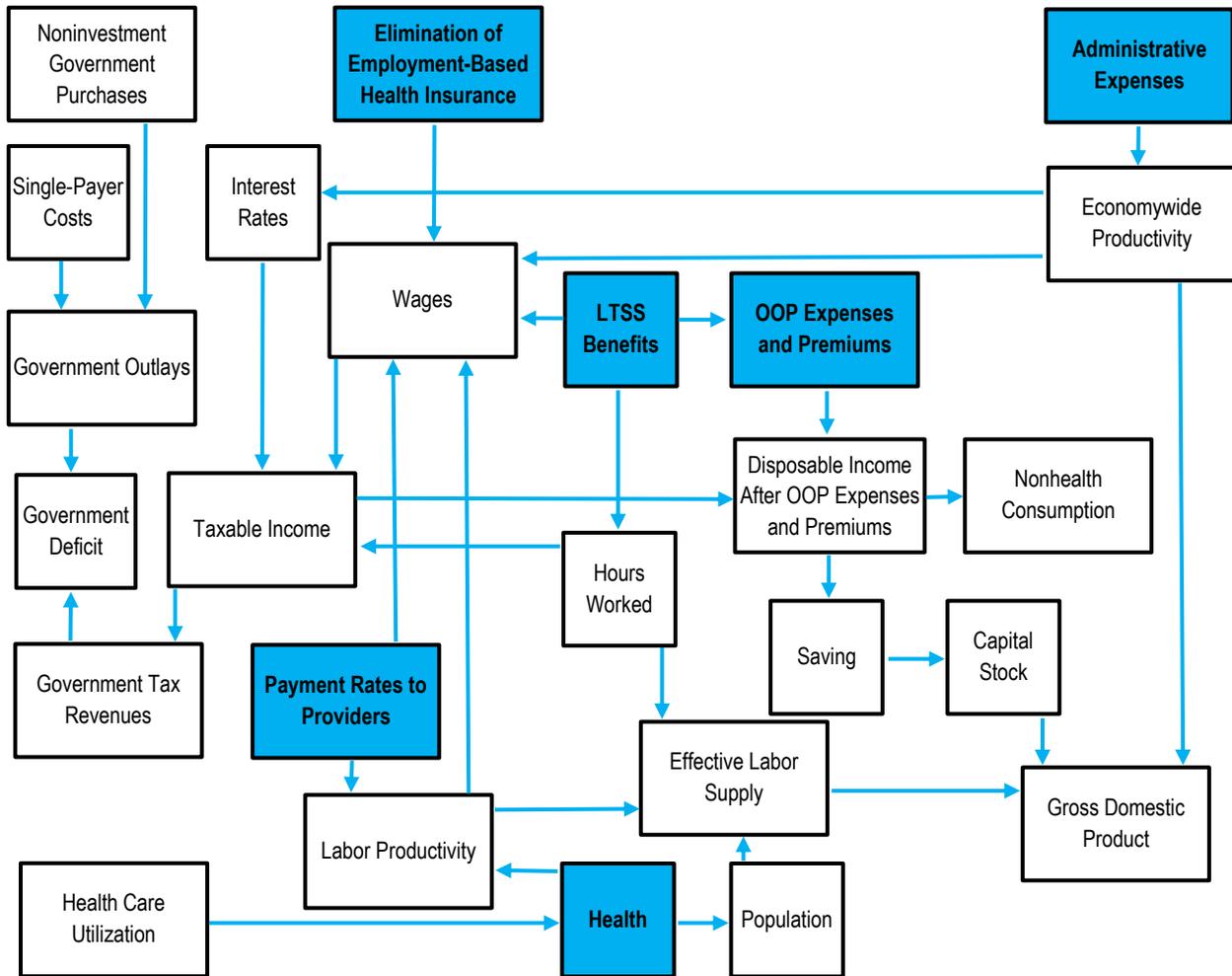


Data source: Congressional Budget Office.

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Figure 2.

## Diagram of How the Economic Effects of a Single-Payer Health Care System Are Modeled



Data source: Congressional Budget Office.

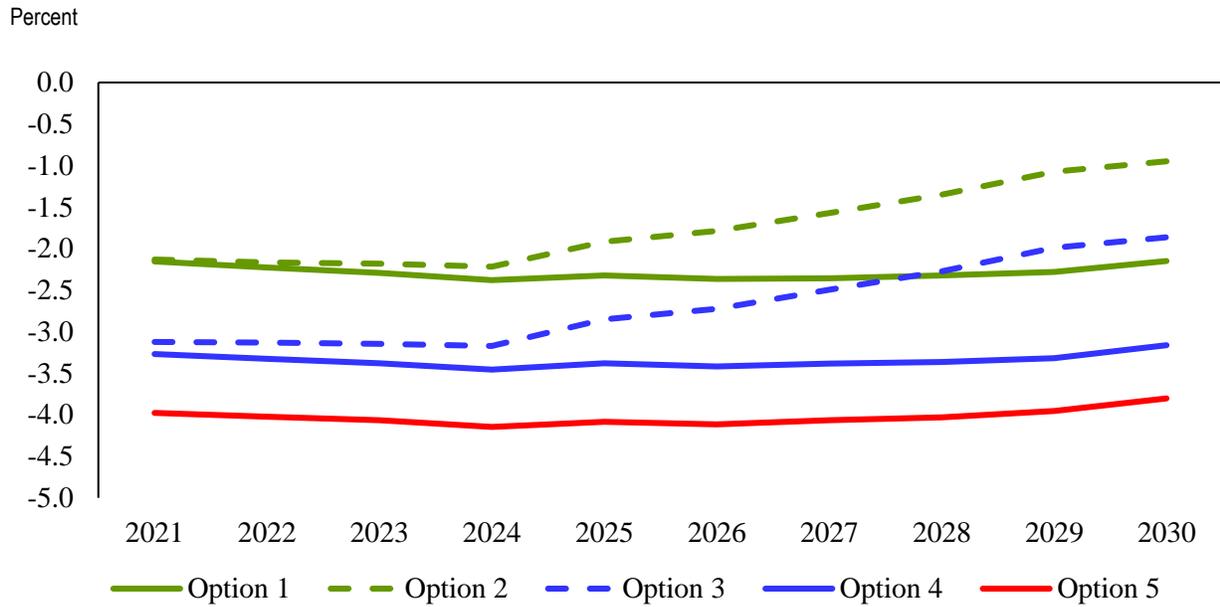
OOP = out-of-pocket; LTSS = long-term services and supports.

Figure 3.

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### Effective Labor Under Five Single-Payer Health Care Options Relative to the Benchmark Economy

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Data source: Congressional Budget Office.

Option 1 has higher payment rates, higher cost sharing, and no long-term services and supports (LTSS) benefits; Option 2 has lower payment rates, higher cost sharing, and no LTSS benefits; Option 3 has lower payment rates, lower cost sharing, and no LTSS benefits; Option 4 has higher payment rates, lower cost sharing, and no LTSS benefits; and Option 5 has higher payment rates, lower cost sharing, and LTSS benefits.

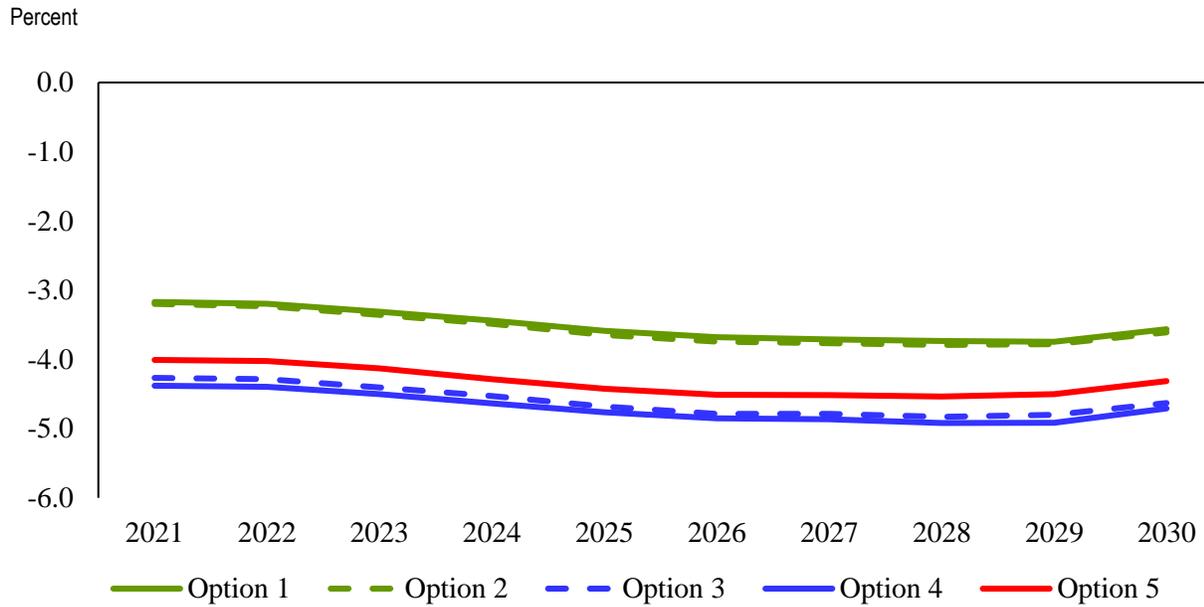
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Figure 4.

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## Hours Worked Under Five Single-Payer Health Care Options Relative to the Benchmark Economy

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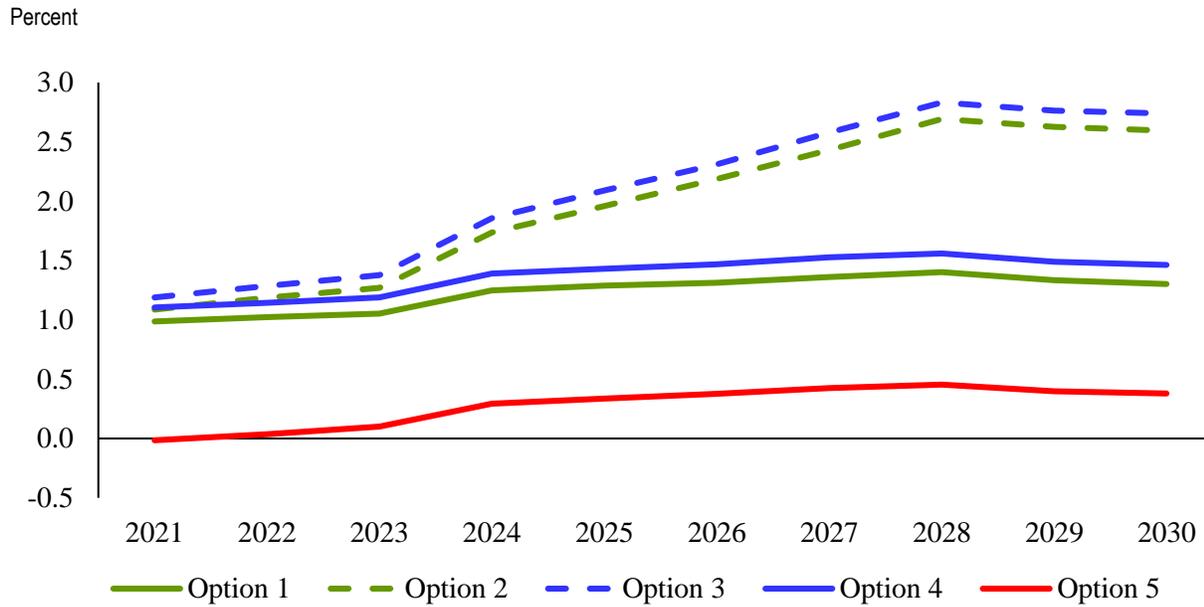
Data source: Congressional Budget Office.

Option 1 has higher payment rates, higher cost sharing, and no long-term services and supports (LTSS) benefits; Option 2 has lower payment rates, higher cost sharing, and no LTSS benefits; Option 3 has lower payment rates, lower cost sharing, and no LTSS benefits; Option 4 has higher payment rates, lower cost sharing, and no LTSS benefits; and Option 5 has higher payment rates, lower cost sharing, and LTSS benefits.

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Figure 5.

### Average Labor Productivity Under Five Single-Payer Health Care Options Relative to the Benchmark Economy

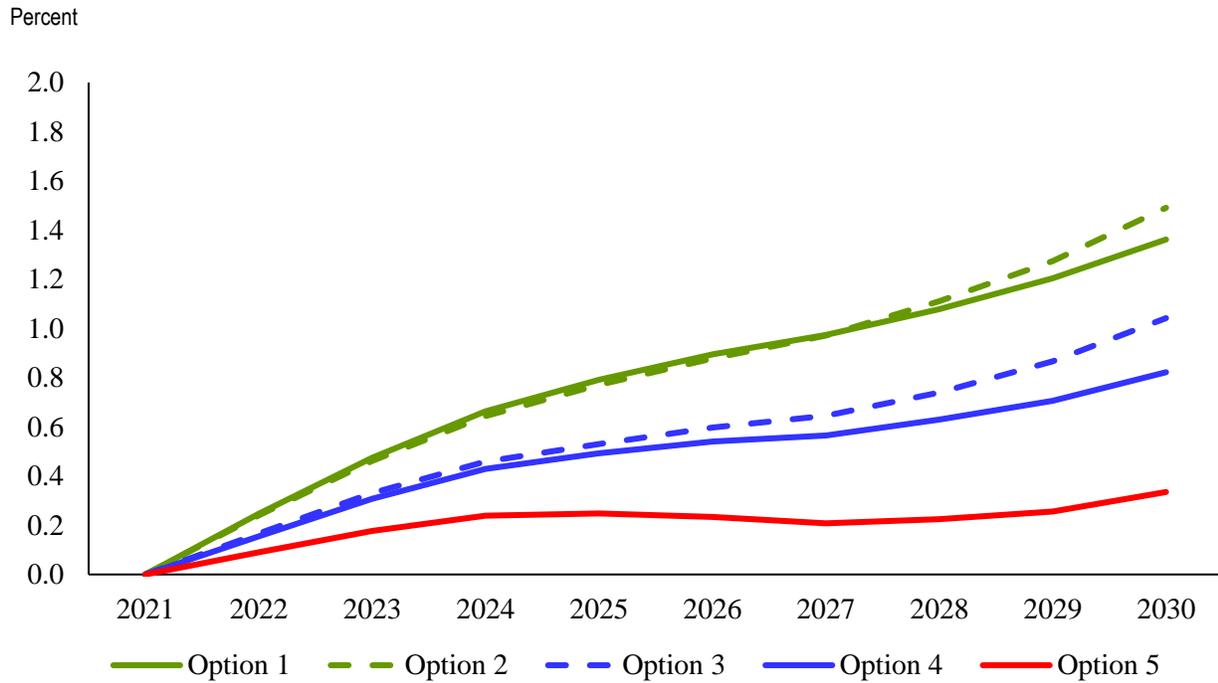


Data source: Congressional Budget Office.

Option 1 has higher payment rates, higher cost sharing, and no long-term services and supports (LTSS) benefits; Option 2 has lower payment rates, higher cost sharing, and no LTSS benefits; Option 3 has lower payment rates, lower cost sharing, and no LTSS benefits; Option 4 has higher payment rates, lower cost sharing, and no LTSS benefits; and Option 5 has higher payment rates, lower cost sharing, and LTSS benefits.

Figure 6.

### Capital Stock Under Five Single-Payer Health Care Options Relative to the Benchmark Economy

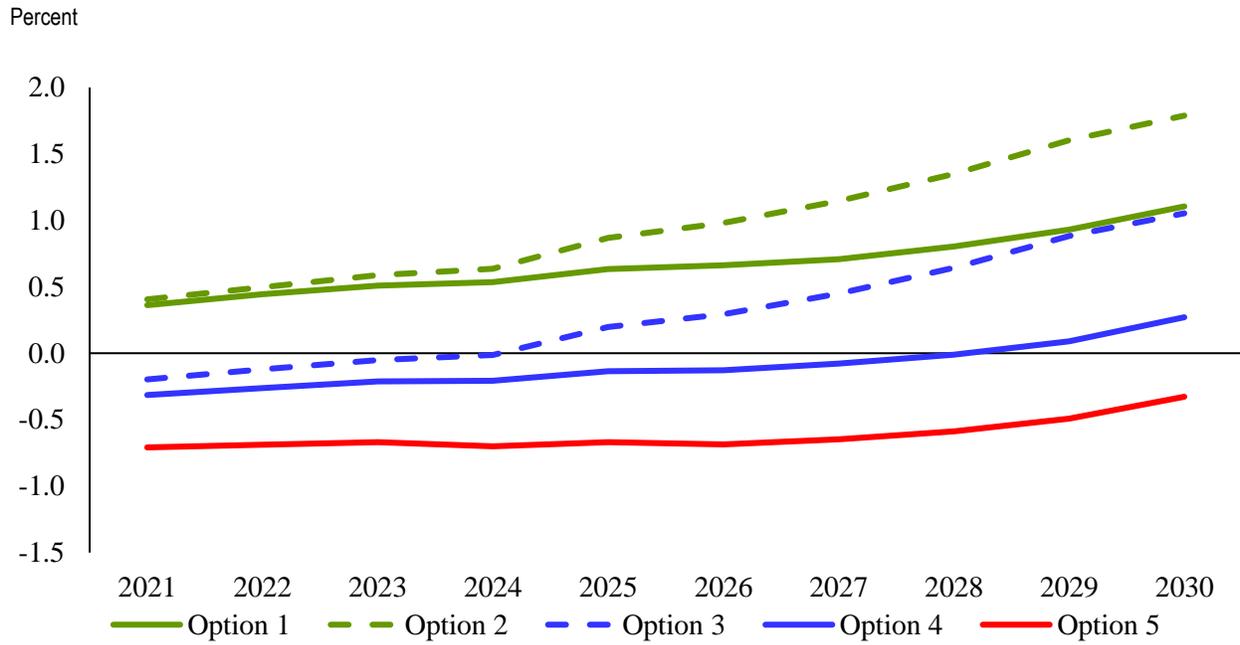


Data source: Congressional Budget Office.

Option 1 has higher payment rates, higher cost sharing, and no long-term services and supports (LTSS) benefits; Option 2 has lower payment rates, higher cost sharing, and no LTSS benefits; Option 3 has lower payment rates, lower cost sharing, and no LTSS benefits; Option 4 has higher payment rates, lower cost sharing, and no LTSS benefits; and Option 5 has higher payment rates, lower cost sharing, and LTSS benefits.

Figure 7.

## Gross Domestic Product Under Five Single-Payer Health Care Options Relative to the Benchmark Economy

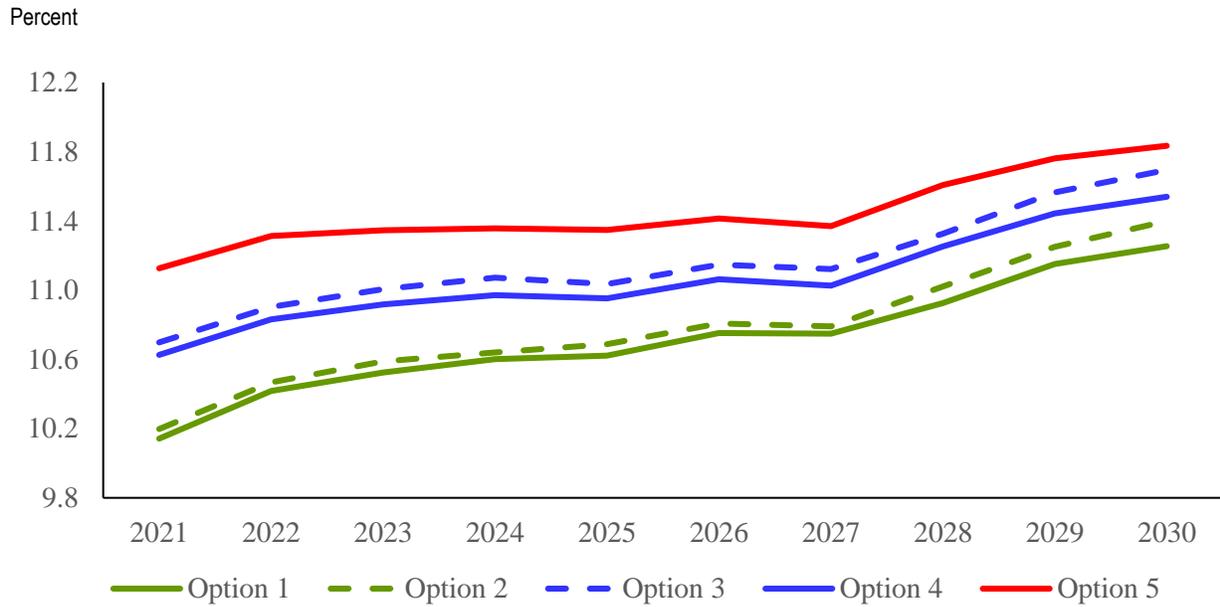


Data source: Congressional Budget Office.

Option 1 has higher payment rates, higher cost sharing, and no long-term services and supports (LTSS) benefits; Option 2 has lower payment rates, higher cost sharing, and no LTSS benefits; Option 3 has lower payment rates, lower cost sharing, and no LTSS benefits; Option 4 has higher payment rates, lower cost sharing, and no LTSS benefits; and Option 5 has higher payment rates, lower cost sharing, and LTSS benefits.

Figure 8.

### Nonhealth Consumption per Capita Under Five Single-Payer Health Care Options Relative to the Benchmark Economy



Data source: Congressional Budget Office.

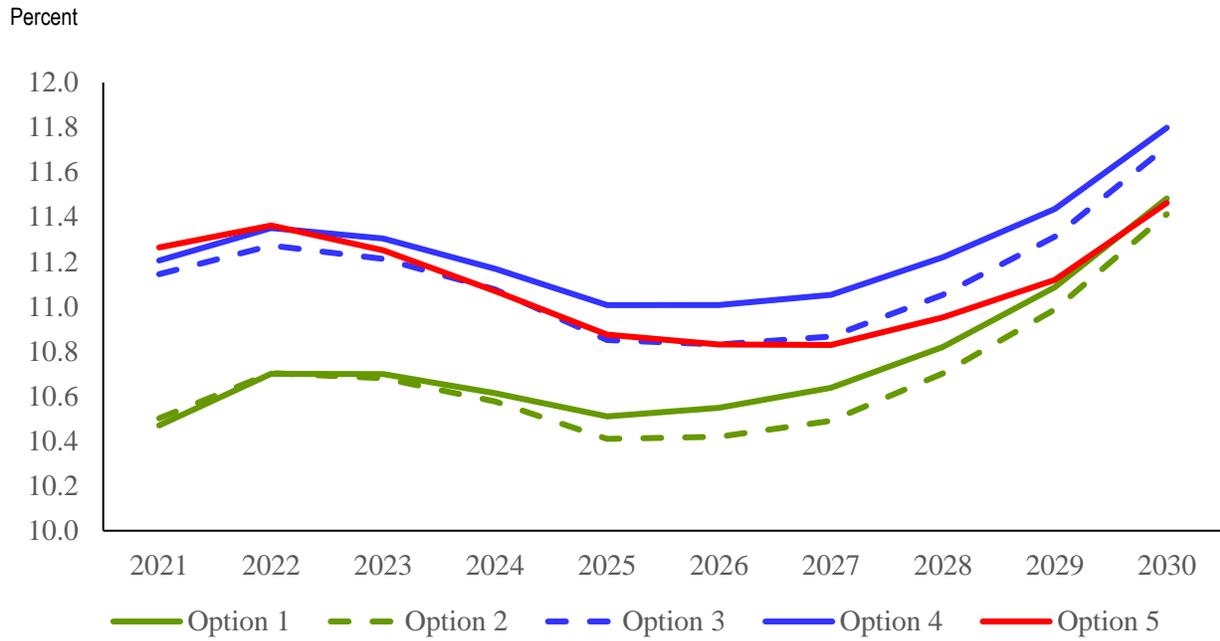
Option 1 has higher payment rates, higher cost sharing, and no long-term services and supports (LTSS) benefits; Option 2 has lower payment rates, higher cost sharing, and no LTSS benefits; Option 3 has lower payment rates, lower cost sharing, and no LTSS benefits; Option 4 has higher payment rates, lower cost sharing, and no LTSS benefits; and Option 5 has higher payment rates, lower cost sharing, and LTSS benefits.

Figure 9.

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### Average After-Tax Wage Rate Under Five Single-Payer Health Care Options Relative to the Benchmark Economy

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Data source: Congressional Budget Office.

Option 1 has higher payment rates, higher cost sharing, and no long-term services and supports (LTSS) benefits; Option 2 has lower payment rates, higher cost sharing, and no LTSS benefits; Option 3 has lower payment rates, lower cost sharing, and no LTSS benefits; Option 4 has higher payment rates, lower cost sharing, and no LTSS benefits; and Option 5 has higher payment rates, lower cost sharing, and LTSS benefits.

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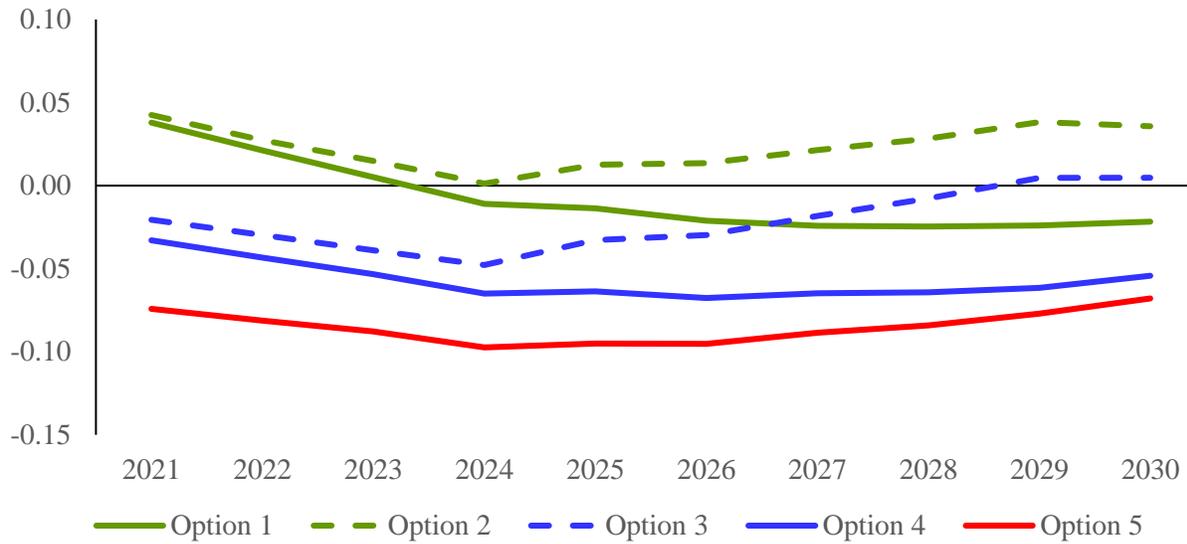
Figure 10.

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### Average After-Tax Rate of Return on Private Wealth Under Five Single-Payer Health Care Options Relative to the Benchmark Economy

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Percentage Points



Data source: Congressional Budget Office.

Option 1 has higher payment rates, higher cost sharing, and no long-term services and supports (LTSS) benefits; Option 2 has lower payment rates, higher cost sharing, and no LTSS benefits; Option 3 has lower payment rates, lower cost sharing, and no LTSS benefits; Option 4 has higher payment rates, lower cost sharing, and no LTSS benefits; and Option 5 has higher payment rates, lower cost sharing, and LTSS benefits.

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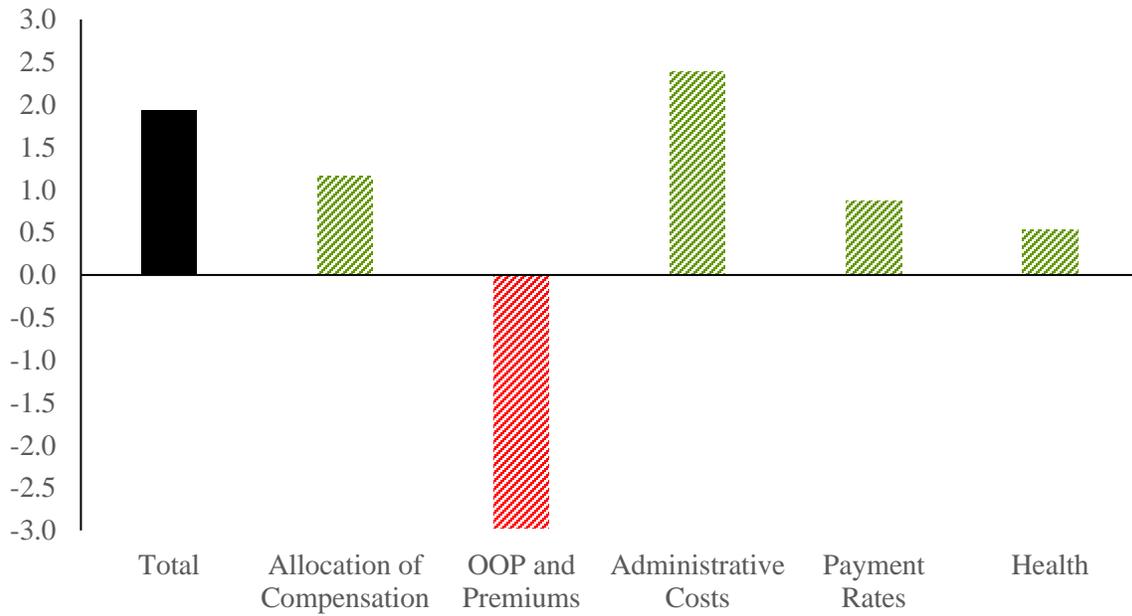
Figure 11.

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## Decomposition of the Effects of a Single-Payer Health Care System on Gross Domestic Product, Option 2

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Percentage Points



Data source: Congressional Budget Office.

OOP = out-of-pocket costs.

Option 2 has lower payment rates, higher cost sharing, and no long-term services and supports benefits.

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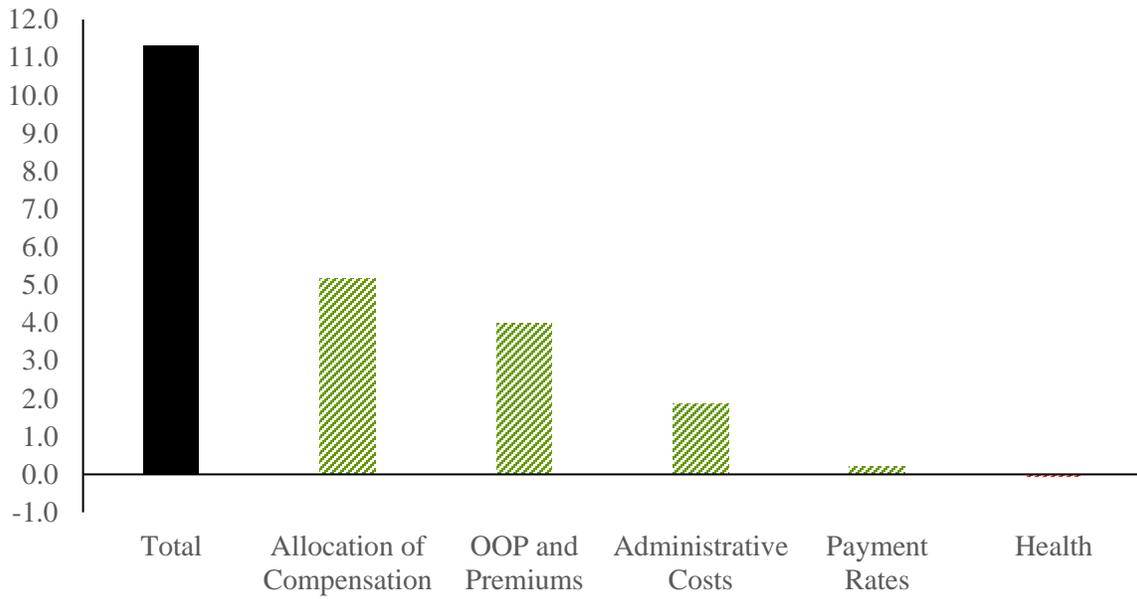
Figure 12.

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## Decomposition of the Effects of a Single-Payer Health Care System on Nonhealth Consumption, Option 2

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Percentage Points



Data source: Congressional Budget Office.

OOP = out-of-pocket costs.

Option 2 has lower payment rates, higher cost sharing, and no long-term services and supports benefits.

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# Tables

Table 1.

## Summary of CBO's Projections Under Current Law and Under the Five Single-Payer Health Care Options, 2030

Billions of Dollars

	Current Law	Option 1: Higher Payment Rates, Higher Cost Sharing, No LTSS	Option 2: Lower Payment Rates, Higher Cost Sharing, No LTSS	Option 3: Lower Payment Rates, Lower Cost Sharing, No LTSS	Option 4: Higher Payment Rates, Lower Cost Sharing, No LTSS	Option 5: Higher Payment Rates, Lower Cost Sharing, Coverage of LTSS
<b>Federal Subsidies for Health Care<sup>a</sup></b>						
Total	2,820	4,916	4,333	4,588	5,217	5,816
Change compared with current law	n.a.	2,097	1,513	1,769	2,397	2,996
<b>National Health Expenditures</b>						
Total	6,631	6,473	5,888	5,981	6,589	6,922
Change compared with current law						
From changes in payment rates	n.a.	-67	-533	-508	-41	-22
From increased use of care	n.a.	321	206	272	407	718
From reductions in payers' administrative spending	n.a.	-411	-416	-414	-409	-406
Overall change	n.a.	-158	-743	-650	-42	290
<b>Out-of-Pocket Spending</b>						
Total	721	579	577	415	394	255
Change compared with current law	n.a.	-142	-144	-306	-327	-466

Data source: Congressional Budget Office.

LTSS = long-term services and supports; n.a. = not applicable.

a. Excludes discretionary spending for health care (such as spending on veterans' health programs) because any reductions in discretionary spending under the illustrative single-payer options would depend on future appropriation action by lawmakers.

Table 2.

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## Households' Out-of-Pocket Health Care Expenses and Share of Health Insurance Premiums as a Share of Gross Domestic Product

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Percent

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	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
OOP Expenses and Premiums as a Share of GDP	4.6	4.7	4.7	4.8	4.8	4.8	4.8	4.9	5.0	5.1	5.2

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Data source: Congressional Budget Office.

GDP = gross domestic product; OOP = out-of-pocket.

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Table 3.

## Effects of Five Single-Payer Health Care Options on the Economy and the Budget as a Percentage of Baseline Gross Domestic Product, 2030

Percent

				Aggregate Expenditures			
	Real GDP	Real Health Care Utilization <sup>a</sup>	Other Resources	Consumption (Nonhealth)	Households' Health Care Expenses	Real Health Care Utilization	Investment
Option 1	1.1	1.0	2.8	6.3	-3.3	1.0	0.8
Option 2	1.8	0.7	2.3	6.4	-3.3	0.7	1.0
Option 3	1.1	0.9	2.5	6.6	-3.8	0.9	0.8
Option 4	0.3	1.3	2.9	6.5	-3.9	1.3	0.6
Option 5	-0.3	2.3	2.8	6.6	-4.5	2.3	0.3

			Government Spending			
	Government Surplus	Government Revenues	Health <sup>b</sup>	Nonhealth Transfers	Interest Payments	Noninvestment Purchases <sup>c</sup>
Option 1	0.0	1.0	6.8	0.0	0.0	-5.7
Option 2	0.0	1.1	4.9	0.0	0.0	-3.9
Option 3	0.0	0.9	5.7	0.0	0.0	-4.8
Option 4	0.0	0.9	7.7	0.0	0.0	-6.8
Option 5	0.0	0.7	9.7	0.0	-0.1	-8.9

Data source: Congressional Budget Office.

Other resources refers to resources in the OLG model that come from a source other than domestic production, such as GDP. In these simulations, those data capture the resources used to increase taxable wages following the redistribution of workers' labor compensation from health insurance premiums to taxable wages.

GDP = gross domestic product; OLG = overlapping-generations.

a. Estimated externally to the OLG model and not included in real GDP.

b. Estimated externally to the OLG model.

c. The decline in noninvestment government spending results in negative values, suggesting that resources are being pulled from a source external to the model economy.

Table 4.

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**Effects of Five Single-Payer Health Care Options on Households' Out-of-Pocket Health Care Expenses and Share of Health Insurance Premiums**

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Percent

	<b>2030</b>
Option 1	-35.2
Option 2	-35.4
Option 3	-53.5
Option 4	-55.9
Option 5	-71.4

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Data source: Congressional Budget Office.

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Table 5.

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**Effects of Five Single-Payer Health Care Options on Payer and Provider Administrative Costs**

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Percentage of Baseline Gross Domestic Product

	<b>2030</b>
Option 1	-1.8
Option 2	-1.7
Option 3	-1.7
Option 4	-1.8
Option 5	-1.8

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Data source: Congressional Budget Office.

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Table 6.

## Aggregate Economic Effects of Five Single-Payer Health Care Options

Percent

	2021	2025	2030	2021	2025	2030	2021	2025	2030
<b>Gross Domestic Product</b>			<b>Economywide Productivity</b>			<b>After-Tax Wage Rate</b>			
Option 1	0.4	0.6	1.1	1.6	1.7	1.8	10.5	10.5	11.5
Option 2	0.4	0.9	1.8	1.7	1.7	1.7	10.5	10.4	11.4
Option 3	-0.2	0.2	1.1	1.7	1.7	1.7	11.1	10.9	11.7
Option 4	-0.3	-0.1	0.3	1.6	1.7	1.8	11.2	11.0	11.8
Option 5	-0.7	-0.7	-0.3	1.7	1.7	1.8	11.3	10.9	11.5
<b>Nonhealth Consumption per Capita</b>			<b>Average Labor Productivity</b>			<b>After-Tax Rate of Return on Private Wealth<sup>a</sup></b>			
Option 1	10.1	10.6	11.3	1.0	1.2	1.3	0.0	0.0	0.0
Option 2	10.2	10.7	11.4	1.1	1.7	2.6	0.0	0.0	0.0
Option 3	10.7	11.0	11.7	1.2	1.9	2.8	0.0	0.0	0.0
Option 4	10.6	11.0	11.5	1.2	1.4	1.5	0.0	-0.1	-0.1
Option 5	11.1	11.3	11.8	0.0	0.3	0.4	-0.1	-0.1	-0.1
<b>Capital Stock</b>			<b>Average Hours Worked per Capita</b>			<b>Output per Hour</b>			
Option 1	0.0	0.8	1.4	-3.2	-3.6	-3.6	1.0	1.0	1.0
Option 2	0.0	0.8	1.5	-3.2	-3.6	-3.6	1.0	1.0	1.1
Option 3	0.0	0.5	1.0	-4.3	-4.7	-4.6	1.0	1.1	1.1
Option 4	0.0	0.5	0.8	-4.4	-4.8	-4.7	1.0	1.0	1.1
Option 5	0.0	0.2	0.3	-4.0	-4.4	-4.3	1.0	1.0	1.0
<b>Labor</b>			<b>Population Size</b>						
Option 1	-2.2	-2.3	-2.1	0.0	0.1	0.1			
Option 2	-2.1	-1.9	-0.9	0.0	0.1	0.1			
Option 3	-3.1	-2.9	-1.9	0.0	0.1	0.1			
Option 4	-3.3	-3.4	-3.2	0.0	0.1	0.1			
Option 5	-4.0	-4.1	-3.8	0.0	0.1	0.1			

Data source: Congressional Budget Office.

a. Percentage point difference from the benchmark economy.

Table 7.

## Effects of Five Single-Payer Health Care Options on Hours Worked Over Households' Lifetimes

Percent

		Birth Years			
		1940–1959	1960–1979	1980–1999	2000–2020
Option 1	Bottom Third	-0.1	-1.8	-4.0	-4.3
	Middle Third	-0.1	-0.7	-2.2	-3.1
	Upper Third	-0.2	-0.7	-1.9	-3.0
Option 2	Bottom Third	-0.1	-1.8	-4.0	-4.3
	Middle Third	-0.1	-0.8	-2.3	-3.2
	Upper Third	-0.2	-0.7	-2.0	-3.0
Option 3	Bottom Third	-0.2	-2.1	-4.6	-5.0
	Middle Third	-0.3	-1.5	-3.5	-4.6
	Upper Third	-0.3	-1.1	-2.6	-3.8
Option 4	Bottom Third	-0.2	-2.1	-4.6	-5.1
	Middle Third	-0.3	-1.5	-3.6	-4.8
	Upper Third	-0.3	-1.1	-2.6	-3.8
Option 5	Bottom Third	0.1	0.2	0.7	1.9
	Middle Third	-0.6	-2.8	-6.2	-7.9
	Upper Third	-0.6	-1.7	-3.3	-4.8

Data source: Congressional Budget Office.

Table 8.

## Effects of Five Single-Payer Health Care Options on Nonhealth Consumption Over Households' Lifetimes

Percent

		Birth Years			
		1940–1959	1960–1979	1980–1999	2000–2020
<b>Option 1</b>	Bottom Third	4.3	11.4	18.6	21.7
	Middle Third	2.0	6.5	12.7	15.6
	Upper Third	1.3	4.7	9.0	10.9
<b>Option 2</b>	Bottom Third	4.4	11.6	18.9	22.2
	Middle Third	2.0	6.7	13.0	16.0
	Upper Third	1.3	4.9	9.3	11.3
<b>Option 3</b>	Bottom Third	4.6	11.9	19.2	22.4
	Middle Third	2.3	6.8	13.0	15.9
	Upper Third	1.5	5.1	9.6	11.6
<b>Option 4</b>	Bottom Third	4.5	11.7	18.9	21.9
	Middle Third	2.3	6.7	12.7	15.5
	Upper Third	1.5	5.0	9.4	11.2
<b>Option 5</b>	Bottom Third	4.7	11.9	18.8	21.8
	Middle Third	2.5	6.5	11.9	14.6
	Upper Third	1.9	5.6	10.2	12.0

Data source: Congressional Budget Office.

Table 9.

## Approximate Effects of Single-Payer Health Care Systems Financed by Different Taxes, 2030

Percent

	Single-Payer System	Financing: Labor Tax	Single-Payer + Labor Tax
Gross Domestic Product: Option 2	1.8	-3.2	-1.4
Gross Domestic Product: Option 5	-0.3	-7.2	-7.5
Private Nonhealth Consumption per Capita: Option 2	11.4	-9.1	2.3
Private Nonhealth Consumption per Capita: Option 5	11.8	-18.9	-7.0
	Single-Payer System	Financing: Flat Income Tax	Single-Payer + Flat Income Tax
Gross Domestic Product: Option 2	1.8	-3.0	-1.2
Gross Domestic Product: Option 5	-0.3	-6.3	-6.7
Private Nonhealth Consumption per Capita: Option 2	11.4	-8.3	3.1
Private Nonhealth Consumption per Capita: Option 5	11.8	-16.9	-5.1
	Single-Payer System	Financing: Progressive Income Tax	Single-Payer + Progressive Income Tax
Gross Domestic Product: Option 2	1.8	-4.5	-2.8
Gross Domestic Product: Option 5	-0.3	-10.1	-10.4
Private Nonhealth Consumption per Capita: Option 2	11.4	-8.9	2.5
Private Nonhealth Consumption per Capita: Option 5	11.8	-18.6	-6.8

Data source: Congressional Budget Office.