

## The Macroeconomic and Budgetary Effects of Various Fiscal Policies

**F**ederal tax and spending policies have significant effects on the economy, and those macroeconomic effects, in turn, affect the budget. Although the budget projections presented in the preceding chapters of this report incorporate the effects of fiscal policy on the economy over the next decade, they do not incorporate those effects beyond 2025, relying instead on “benchmark” projections of economic variables. Unlike the economic forecast constructed by the Congressional Budget Office for the traditional 10-year baseline period, which generally reflects current laws regarding taxes and spending, the economic benchmark that CBO uses for projections beyond the 10-year period reflects the assumption that marginal tax rates (the rates that apply to an additional dollar of income) and the ratio of debt to gross domestic product (GDP) will remain constant after 10 years.

This chapter expands on the analysis in the preceding chapters in two ways. First, it shows how the budgetary policies that would be in place under the extended baseline would affect the economy in the long run—that is, how the economy that resulted from those policies would differ from CBO’s economic benchmark—and how those macroeconomic effects would, in turn, feed back into the budget. Second, the chapter shows how the budget and the economy would evolve under three additional scenarios involving changes in fiscal policy. The first, the extended alternative fiscal scenario, incorporates changes to those policies assumed under the extended baseline that some analysts consider difficult to maintain; it would result in larger deficits and more debt than are projected in the extended baseline. The other two scenarios are illustrative. Through unspecified increases in tax revenue, cuts in spending, or some combination of the two, they would result in smaller deficits and lower debt than under the extended baseline.

Although changes in tax and spending policies can affect the economy in a variety of ways, CBO’s analysis in this chapter focuses on the following four changes and their macroeconomic effects:

- Higher debt draws money away from (that is, crowds out) investment in capital goods and thereby reduces output below what would otherwise occur.
- Higher marginal tax rates discourage working and saving, which reduces output.
- Larger transfer payments to working-age people discourage working, which reduces output.
- Increased federal investment in education, research and development (R&D), and infrastructure helps develop a skilled workforce, encourages innovation, and facilitates commerce, all of which increase output.

For each of those policy changes, the opposite change has the opposite effect; for example, lower marginal tax rates increase output above what would otherwise occur.

Because the magnitude of the macroeconomic effects of specified changes in fiscal policies is uncertain, CBO reports not only a central estimate for the outcome of each set of policies but also a range of likely outcomes.<sup>1</sup> When estimating output, CBO focused on effects on

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1. For certain key variables in its long-term economic models, CBO has developed ranges of values based on the research literature on those variables; each range is intended to cover roughly the middle two-thirds of the likely values for the variable. To calculate the ranges of estimates for the effects of each set of fiscal policies, CBO used the ranges of values for each variable. To calculate the central estimates, it used values for the variables at the midpoints of those ranges.

gross national product (GNP), which—unlike the more commonly cited GDP—includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in this country; it is therefore a better measure of the resources available to U.S. households.

CBO estimates that the fiscal policies in the extended baseline would result in output lower than what is projected in the economic benchmark, primarily because the ratio of debt to output and marginal tax rates on labor income would increase significantly over time; in addition, the increase in debt would lead to higher interest rates. According to CBO's central estimates, real (inflation-adjusted) GNP in 2040 would be roughly 2 percent lower than the amount projected in the benchmark, and interest rates would be about a quarter of a percentage point higher.<sup>2</sup> Those economic changes, in turn, would worsen the budgetary outlook, though not dramatically: Under the extended baseline with macroeconomic feedback, federal debt held by the public is projected to rise to 107 percent of GDP in 2040; under the extended baseline without macroeconomic feedback (described in Chapter 1), it is projected to be 103 percent.

For the three additional fiscal scenarios, CBO's analysis yields the following macroeconomic and budgetary outcomes (according to the agency's central estimates):

- In the first scenario—that is, the extended alternative fiscal scenario—revenues and certain categories of spending measured as shares of GDP remain close to their historical averages over the long run rather than change as they would under the extended baseline. Under that scenario, deficits excluding interest payments would be about \$2 trillion larger over the first decade than those under the baseline; thereafter, such deficits would be larger than those under the extended baseline by rapidly increasing amounts, doubling as a percentage of GDP in less than 10 years. CBO projects that real GNP in 2040 would be about 5 percent lower under the extended alternative fiscal scenario than under the extended baseline with macroeconomic feedback and that interest rates would be about three-quarters of a percentage point higher. As a result of those economic developments, federal debt would rise to 175 percent of GDP in 2040 (see Figure 6-1).

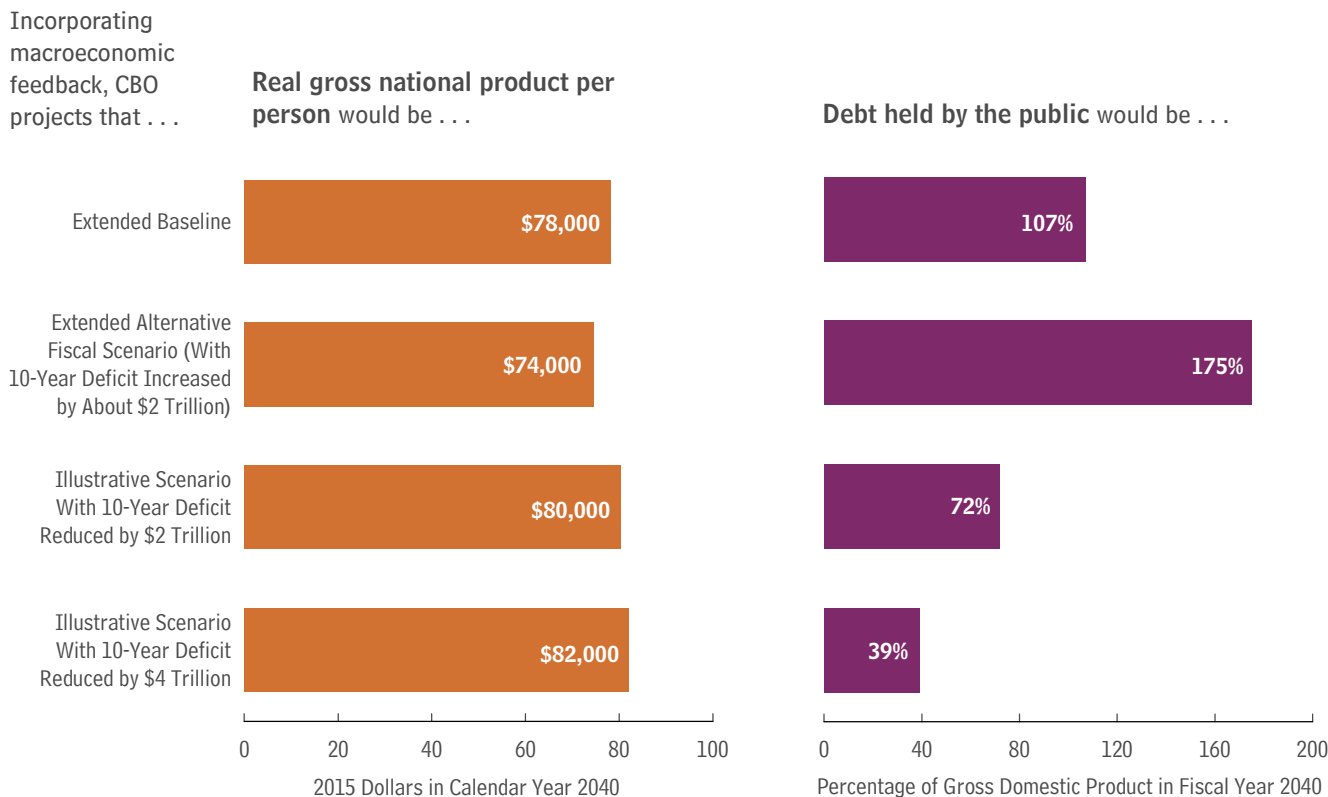
- Under the second scenario, which is illustrative and does not reflect any specific fiscal policies, deficit reduction is phased in such that total deficits excluding interest payments through 2025 are \$2 trillion lower than those projected under the baseline and, in each subsequent year, the reduction measured as a percentage of GDP equals the 2025 reduction. CBO projects that real GNP in 2040 would be about 3 percent higher and interest rates would be about a third of a percentage point lower under this scenario than under the extended baseline with macroeconomic feedback. After accounting for those economic developments, CBO projects that federal debt in 2040 would be about 72 percent of GDP—about the same ratio as it was in 2013.
- Under the third scenario, which is also illustrative, the amount of deficit reduction in the next 10 years is twice as large as in the second, with the reduction phased in such that total deficits excluding interest payments through 2025 are \$4 trillion lower than those under the baseline. As in the second scenario, measured as a percentage of GDP, the reduction in the deficit in each subsequent year equals the 2025 reduction. CBO projects that real GNP in 2040 would be about 5 percent higher and interest rates would be about two-thirds of a percentage point lower under this scenario than under the extended baseline with macroeconomic feedback. With those economic effects accounted for, federal debt would fall to 39 percent of GDP in 2040, slightly above its level in 2007 (35 percent) and its average over the past 50 years (38 percent).

The three additional fiscal scenarios would have significant effects on the economy during the next few years as well as over the long term (which is the focus of this chapter). The scenarios that would raise output in the long term above what is projected in the extended baseline would lower it in the short term, and the scenario that would reduce output in the long term would raise it in the short term. CBO estimates that the decrease in tax revenues and increase in spending under the extended alternative fiscal scenario would cause real GDP in 2016 to be 0.6 percent higher than it would be under current law and would cause the number of full-time-equivalent employees in 2016 to be 0.7 million greater than is

2. For the results presented in this chapter, changes in interest rates refer to changes in both the average real return on private capital and the average real interest rate on federal debt.

**Figure 6-1.**

**Effects in 2040 of the Fiscal Policies in CBO’s Extended Baseline, Extended Alternative Fiscal Scenario, and Illustrative Scenarios With Smaller Deficits**



Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO’s 10-year baseline budget projections through 2025 and then extending the baseline concept for the rest of the long-term projection period.

The extended alternative fiscal scenario incorporates these assumptions: Certain policies that have been in place for a number of years but that are scheduled to change will be continued, some provisions of law that might be difficult to sustain for a long period will be modified, and federal revenues and certain categories of federal spending measured as shares of gross domestic product will be maintained at or near their historical averages over the long term.

In the illustrative scenarios with the 10-year deficit reduced by \$2 trillion and by \$4 trillion relative to the baseline, those amounts are the cumulative reductions in deficits excluding interest payments between 2016 and 2025.

Real (inflation-adjusted) gross national product differs from gross domestic product, the more common measure of the output of the economy, by including the income that U.S. residents earn abroad and excluding the income that nonresidents earn in this country.

The results are CBO’s central estimates from ranges determined by alternative assessments about how much deficits crowd out investment in capital goods such as factories and computers (because a larger portion of private saving is being used to purchase government securities) and about how much people respond to changes in after-tax wages by adjusting the number of hours they work.

projected under current law.<sup>3</sup> Under the first illustrative scenario, a drop in demand for goods and services would cause real GDP to be 0.2 percent lower and the number of full-time-equivalent employees to be 0.2 million

smaller in 2016 than is projected under current law. Under the second illustrative scenario, which would bring about a larger decrease in demand, real GDP would be 0.3 percent lower and the number of full-time-equivalent employees would be 0.4 million smaller in 2016 than they would be under current law.

3. A year of full-time-equivalent employment is equal to 40 hours of employment per week for one year.

## Long-Term Macroeconomic Effects of Federal Tax and Spending Policies

Federal tax and spending policies can affect the economy through many channels, including the amount of federal borrowing, marginal tax rates on labor and capital income, transfer payments to working-age people, and federal investment. To analyze medium-term to long-term effects of changes in federal tax and spending policies, CBO used an enhanced version of a model originally developed by Robert Solow in which people base their decisions about working and saving primarily on current economic conditions—especially wage levels, interest rates, and government policies. Their responses to changes in such conditions generally mirror their responses to economic and policy developments in the past; as a result, the responses reflect people’s anticipation of future policies in a general way but not their expectations of particular future developments.<sup>4</sup>

### How Increased Federal Borrowing Affects the Economy

Increased borrowing by the federal government generally crowds out private investment in productive capital in the long term. That is because the portion of the amount people save that is used to buy government securities is not available to finance private investment. The result is a smaller stock of capital and lower output in the long term than would otherwise be the case (all else held equal).

Two factors offset part of that crowding-out effect. One is that additional federal borrowing tends to boost private saving, which increases the total funds available to purchase federal securities and finance private investment. That response occurs for several reasons:

- Additional federal borrowing tends to raise interest rates, which boosts the return on saving;

- Some people anticipate that policymakers will raise taxes or cut spending in the future to cover the cost of paying interest on the additional accumulated debt, so those people increase their own saving to prepare for paying higher taxes or receiving less in benefits; and
- The policies that give rise to deficits (such as tax cuts or increases in government transfer payments) put more money in private hands, some of which is saved.

However, the rise in private saving is generally a good deal smaller than the increase in federal borrowing, so greater federal borrowing leads to less *national* saving.<sup>5</sup> CBO’s central estimate, which is based on the research literature on this topic, is that private saving rises by 43 cents for every one-dollar increase in federal borrowing in the long run, leaving a net decline of 57 cents in national saving.

The second factor offsetting part of the crowding-out effect is that higher interest rates tend to increase net inflows of capital from other countries—by attracting more foreign capital to the United States and inducing U.S. savers to keep more of their money at home. Those additional net inflows prevent investment in this country from declining as much as national saving does in the face of more federal borrowing. CBO’s central estimate, again drawn from the research literature on the topic, is that net inflows of private capital rise by 24 cents for every one-dollar increase in government borrowing in the long run.

However, an increase in inflows of capital from other countries also means that more profits and interest payments will flow overseas. Therefore, although flows of capital into the United States can help moderate a decline in domestic investment, part of the income resulting from that additional investment does not accrue to U.S. residents. The result is that greater net inflows of capital keep GDP from declining as much as it would otherwise, but they are less effective in restraining the decline in

4. For details of CBO’s model, see Congressional Budget Office, *CBO’s Method for Estimating Potential Output: An Update* (August 2001), [www.cbo.gov/publication/13250](http://www.cbo.gov/publication/13250). For a general explanation of how CBO analyzes the effects of fiscal policies, see Congressional Budget Office, *How CBO Analyzes the Effects of Changes in Federal Fiscal Policies on the Economy* (November 2014), [www.cbo.gov/publication/49494](http://www.cbo.gov/publication/49494).

5. National saving comprises total saving by all sectors of the economy: personal saving; business saving, in the form of after-tax profits not paid out as dividends; and government saving or dissaving, in the form of surpluses or deficits of the federal government and state and local governments.

GNP.<sup>6</sup> Thus, other things being equal, increases in debt cause a greater reduction in GNP than in GDP, and reductions in debt lead to a greater increase in GNP than in GDP.

With those two offsets to the crowding-out effect taken together, when the deficit goes up by one dollar, national saving falls by 57 cents and foreign capital inflows rise by 24 cents, leaving a net decline of 33 cents in investment in the long run, according to CBO's central estimates. To reflect the wide range of estimates in the economics literature of how government borrowing affects national saving and domestic investment, CBO also uses a range of estimates for those effects: At the low end of that range, for each dollar that deficits rise, domestic investment falls by 15 cents; at the high end of that range, domestic investment falls by 50 cents.<sup>7</sup>

The effect of deficits on investment alters pretax wages and the return on capital, changing incentives to work and save:

- Less investment leads to a smaller capital stock, which makes workers less productive and thereby decreases pretax wages below what they would otherwise be. Those lower wages reduce people's incentive to work.
- Less investment also increases the productivity of existing capital because more workers make use of each unit of capital—each computer or piece of machinery, for example. That greater productivity raises the return on capital. A higher return on capital boosts the return on equity shares in the ownership of

capital and boosts the return on other investments (such as interest rates on federal debt) that are competing for private saving. The resulting increase in the return on saving makes saving more attractive.

CBO's estimates of the effects of higher federal debt on private saving, net capital inflows, and interest rates are based on historical experience. However, history may not be a good guide to the effects of rising debt in the extended baseline because the extended baseline shows a large, persistent increase in the ratio of debt to GDP—an outcome that is unprecedented in the United States, where large increases in debt have been temporary, such as those that occurred during and immediately after wars or severe economic downturns. If participants in financial markets came to believe that policymakers intended to allow federal debt as a percentage of GDP to continue to rise, interest rates would probably increase by more than the historical relationship between federal debt and interest rates suggests. In addition, the increases in federal debt might not affect private saving and net capital inflows in the same way that they have in the past.

As Chapter 1 discusses in greater detail, increased federal debt would, in the long term, have several negative consequences in addition to the effects just described:

- Increased borrowing would increase the amount of interest that the government pays to its lenders, all else being equal. Those larger interest payments would make it more difficult to reduce future budget deficits, necessitating larger increases in taxes or reductions in noninterest spending.
  - Increased borrowing would restrict policymakers' ability to use tax and spending policies to respond to unexpected challenges, such as economic downturns or financial crises. As a result, those challenges would tend to have larger negative effects on the economy and on people's well-being.
  - Increased borrowing would increase the probability of a fiscal crisis in which investors lost so much confidence in the government's ability to manage its budget that the government was unable to borrow at affordable rates. Such a crisis would present policymakers with extremely difficult choices and would probably have a very significant negative impact on the country.
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6. The difference in the effect of an increase in debt on GDP and GNP depends, in large part, on the amount of additional capital that foreigners invest in the United States and on the rate of return that they receive on their investments. The increase in the return on capital in this country and the increase in net holdings of U.S. assets by foreigners—both of which imply greater income earned by foreign investors—decrease GNP relative to GDP. In CBO's analyses of fiscal policy, the rate of return earned by foreign investors in the United States changes when the rate of return on capital in this country changes. However, to be consistent with U.S. experience in recent decades, that response is less than one-for-one.
7. For a review of evidence about the effect of deficits on investment, see Jonathan Huntley, *The Long-Run Effects of Federal Budget Deficits on National Saving and Private Domestic Investment*, Working Paper 2014-02 (Congressional Budget Office, February 2014), [www.cbo.gov/publication/45140](http://www.cbo.gov/publication/45140).

## How Increases in Marginal Tax Rates Affect the Economy

Increases in marginal tax rates on labor and capital income reduce output and income below what they would be with lower rates (all else held equal). A higher marginal tax rate on capital income (income derived from wealth, such as stock dividends, realized capital gains, and owners' profits from businesses) decreases the after-tax rate of return on saving, weakening people's incentive to save. However, because that higher marginal tax rate also decreases the return that they receive on their existing savings, people will need to save more to have the same future standard of living, which tends to increase the amount of saving. CBO concludes, as do most analysts, that the former effect outweighs the latter, meaning that a higher marginal tax rate on capital income decreases saving. Specifically, CBO estimates that an increase in the marginal tax rate on capital income that decreased the after-tax return on saving by 1 percent would result in a decrease in private saving of 0.2 percent. (A decrease in the marginal tax rate on capital income would have the opposite effect.) Less saving results in less investment, a smaller capital stock, and lower output and income.

Similarly, a higher marginal tax rate on labor income (such as wages and salaries) decreases people's incentive to work: Reduced after-tax compensation for an additional hour of work makes work less valuable than other uses of a person's time. That phenomenon, known as the substitution effect, tends to reduce the labor supply. However, because that higher marginal tax rate also decreases the after-tax income that they earn from the work they are already doing, people will need to work more to maintain their standard of living. That phenomenon, known as the income effect, tends to increase the labor supply. CBO concludes, as do most analysts, that the former effect outweighs the latter, meaning that a higher marginal tax rate on labor income decreases the labor supply. (A lower marginal tax rate on labor income would have the opposite effect.) Fewer hours of work result in lower output and income.

To reflect the high degree of uncertainty about the size of the effect that changes in marginal tax rates have on the number of hours people choose to work, CBO uses a range of values in its analyses of fiscal policy.<sup>8</sup> The responsiveness of the labor supply to taxes is often expressed as the total wage elasticity (the change in total labor income caused by a 1 percent change in after-tax wages). The

total wage elasticity equals the substitution elasticity (which measures the substitution effect) minus the income elasticity (which measures the income effect). In this analysis, CBO's central estimate for the change in the labor supply in response to an increase in marginal tax rates corresponds to a total wage elasticity of 0.19 (composed of a substitution elasticity of 0.24 and an income elasticity of 0.05). CBO's range of likely changes in the labor supply is bounded at the low end by a total wage elasticity of about 0.06 (with a substitution elasticity of 0.16 and an income elasticity of 0.10) and at the high end by a value of about 0.32 (with a substitution elasticity of 0.32 and an income elasticity of zero).<sup>9</sup>

## How Increases in Transfer Payments to Working-Age People Affect the Economy

Increases in transfer payments to working-age people discourage work by increasing the amount of resources available to those people and by making work less attractive than other uses of their time. An increase in payments raises people's income, so they can work less and maintain the same standard of living. That income effect tends to reduce the labor supply. In addition, an increase in transfer payments tends to create an implicit tax on additional earnings because those earnings cause people to receive reduced benefits from some transfer programs, thereby encouraging them to substitute other activities for work. That substitution effect also tends to reduce the labor supply. (Thus, in contrast with changes in marginal tax rates, changes in transfer payments generate income and substitution effects that generally work in the same direction.) Those reductions in the labor supply take the form of some people's choosing to work fewer hours and other people's choosing to withdraw from the labor force altogether.

In this analysis, CBO incorporates the income effect of changes in transfer payments to working-age people by using the same income elasticity that it uses to analyze the response of the labor supply to changes in marginal tax rates. This analysis does not, however, incorporate the substitution effect of changes in transfer payments

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8. CBO uses those same values to estimate the effect on the labor supply of changes in pretax hourly wages.
  9. For details on CBO's estimates of the responsiveness of the supply of labor to changes in the after-tax wage rate, see Congressional Budget Office, *How the Supply of Labor Responds to Changes in Fiscal Policy* (October 2012), [www.cbo.gov/publication/43674](http://www.cbo.gov/publication/43674).

because CBO is still developing methods for estimating the complex array of implicit taxes arising from federal transfer policies.

### **How Increases in Federal Investment Affect the Economy**

Increases in federal investment promote long-term economic growth by raising productivity.<sup>10</sup> Spending on education helps develop a skilled workforce, spending on R&D encourages innovation, and spending on infrastructure such as roads and airports facilitates commerce. If not for receiving a public education (funded in part by federal spending), many workers would have lower wages than they do; the development of the Internet, initially funded through government R&D, led to the creation of whole segments of today's economy; and without public highways, the trucking industry would face much higher costs. The result of that greater productivity is higher private-sector output. By contrast, decreases in federal investment could reduce productivity and long-term growth.

CBO's central estimate is that federal investment yields, on average, one-half of the return of a comparable investment by the private sector.<sup>11</sup> However, the size of the return on federal investment is subject to considerable uncertainty, so CBO also uses a range of likely returns. At the low end, CBO uses a rate of return of zero on federal investment—which would mean that such investment has no effect on future private-sector output. At the high end, CBO uses a rate of return on federal investment equal to the average return on a comparable investment by the private sector. The actual rate of return for a particular federal investment could lie outside that range; a project might have a negative return or, alternatively,

yield a greater return than a comparable private-sector investment.

Because of the nature of federal investment, CBO estimates that its returns accrue more slowly than do returns to private investment.<sup>12</sup> The agency expects that, on average, the full effect of federal investment on output is realized within eight years after the outlays are made. In particular, the agency expects that 10 percent of federal investment becomes productive within one year of investment, 20 percent in each of the next two years, and 10 percent in each of the fourth through eighth years following the investment.

### **Long-Term Effects of the Extended Baseline**

The extended baseline generally incorporates the fiscal policies specified in current law. Those policies would cause deficits and debt as percentages of GDP to rise and marginal tax rates to increase over time. Those policies would also increase transfers to working-age families (primarily for health care) and reduce federal investment as a percentage of GDP. Together, those changes would make output lower and interest rates higher than projected in the economic benchmark. Those macroeconomic effects, in turn, would result in worse budgetary outcomes than those based on the economic benchmark.

#### **Fiscal Policies in the Extended Baseline**

Under the extended baseline, federal debt would be larger and marginal tax rates would be higher than the values CBO assumed for its economic benchmark after 2025. Furthermore, that benchmark does not reflect the increase in transfer payments and decline in federal investment as a share of GDP that are projected under the extended baseline.

Under the policies in the extended baseline, federal debt held by the public, which is currently 74 percent of GDP, would rise to 78 percent in 2025 and to 107 percent in 2040 (with macroeconomic feedback), CBO projects

10. For further discussion, see Congressional Budget Office, *Federal Investment* (December 2013), [www.cbo.gov/publication/44974](http://www.cbo.gov/publication/44974). This analysis focuses on federal investment for nondefense purposes. Defense investment contributes to the production of weapon systems and other defense goods, but much of it is sufficiently separate from domestic economic activity that it does not typically contribute to future private-sector output; the exception is the small portion of defense investment that goes to basic and applied research.

11. For a discussion of the macroeconomic effects of federal investment, see Congressional Budget Office, *The Macroeconomic and Budgetary Effects of Federal Investment* (forthcoming).

12. From 1988 to 2008, for example, 33 percent of nondefense federal investment was for education and 23 percent was for R&D; such investments, in CBO's assessment, take considerably longer to boost private-sector output than does the investment in physical capital that accounts for most private-sector investment.

(see Table 6-1).<sup>13</sup> Those percentages are larger than the ones underlying the economic benchmark, which incorporates the assumption that federal debt will rise to 78 percent of GDP by 2025 and then remain at that level thereafter.

In addition, marginal tax rates on labor and capital income would increase over time, as rising real incomes pushed more income into higher tax brackets. The effective marginal tax rate on labor income in 2040 would be about 32 percent and the rate on capital income would be about 19 percent; those rates are currently about 29 percent and 18 percent, respectively (see Chapter 5 for details). By contrast, the economic benchmark reflects the assumption that effective marginal tax rates on income from labor and capital will rise through 2025 in line with CBO's estimates under current law and remain at their 2025 levels (namely, 31 percent and 18 percent) thereafter.

Transfer payments to working-age people measured as a share of GDP would increase under the extended baseline, CBO projects. The macroeconomic effects of the increase in those payments over the coming decade are incorporated in CBO's baseline economic forecast for the 2015–2025 period and thus are incorporated in the economic benchmark. However, the further increase in those payments beyond 2025—which is expected to occur as rising federal spending for certain health care programs more than offsets declining federal spending (relative to the size of the economy) for some other transfer programs—is not included in the economic benchmark.

Given the assumptions underlying CBO's baseline, discretionary spending for nondefense purposes measured as a share of GDP is projected to decline significantly during the next decade and then to remain level thereafter (see Chapter 4 for details). Over the past two decades, about half of nondefense discretionary spending has been

for investments in education, infrastructure, and R&D. If the share of such spending that goes to investment was the same as it has been in the past, then federal investment measured as a share of GDP would also fall markedly over the next decade and then remain at its 2025 level thereafter. The macroeconomic effects of such a reduction in investment are incorporated in CBO's baseline economic forecast and economic benchmark for the 2015–2025 period. The benchmark does not, however, include the effects of such a reduction beyond 2025.

### Output and Interest Rates Under the Extended Baseline

In CBO's assessment, larger federal debt and higher marginal tax rates on labor income are the developments projected under the extended baseline that would have the largest effects on the economy. The projected rise in transfer payments and decline in federal investment as a share of GDP would also affect the economy, but to a lesser extent. That macroeconomic feedback would cause output and interest rates to differ from the amounts projected under CBO's economic benchmark, which does not account for such feedback.

Under the extended baseline, real GNP in 2040 would be about 2 percent below what is projected in the economic benchmark, CBO estimates.<sup>14</sup> As a result, real GNP per person in 2040 would be about \$78,000 (in 2015 dollars), whereas it would be about \$80,000 under the benchmark (which does not incorporate macroeconomic feedback); those amounts would be considerably greater than the estimated GNP per person in 2015 (about \$57,000), primarily because of anticipated growth in productivity (see Figure 6-2). Interest rates in 2040 would be about a quarter of a percentage point higher than those projected in the benchmark, CBO estimates.

Those outcomes are CBO's central estimates. On the basis of the agency's ranges of likely outcomes for key variables, CBO estimates that under the extended baseline, real GNP in 2040 would probably be between about 1 percent and about 4 percent lower than in the benchmark. The estimated increase in interest rates in 2040 would probably range from one-tenth to one-half of a

13. Some combination of increases in revenues or reductions in noninterest spending that resulted in deficits that were 1.1 percent of GDP lower than those projected in the extended baseline would be necessary in each year over the 2015–2040 period to return debt as a percentage of GDP to its current level in 2040. To return debt to its average percentage of GDP over the past 50 years (38 percent), the annual deficits would have to be 2.6 percent of GDP lower than under the extended baseline. For a discussion of how CBO constructs those measures, see Chapter 1. The estimates here, like those in Chapter 1, are calculated without macroeconomic feedback.

14. Projected real GNP in 2025 under the extended baseline equals that in the economic benchmark because during the 10-year budget window, the benchmark matches CBO's economic forecast, which is consistent with the baseline tax and spending policies, and includes macroeconomic feedback.



**Table 6-1.****Long-Run Effects on the Federal Budget of the Fiscal Policies in Various Budget Scenarios**

Percentage of Gross Domestic Product

	2025	2040
<b>Revenues</b>		
Without Macroeconomic Feedback		
Extended baseline	18.3	19
With Macroeconomic Feedback		
Extended baseline	18.3	19
Extended alternative fiscal scenario (with 10-year deficit increased by about \$2 trillion)	18.0	18
Illustrative scenario with 10-year deficit reduced by \$2 trillion	n.a.	n.a.
Illustrative scenario with 10-year deficit reduced by \$4 trillion	n.a.	n.a.
<b>Spending Excluding Interest Payments</b>		
Without Macroeconomic Feedback		
Extended baseline	19.2	21
With Macroeconomic Feedback		
Extended baseline	19.2	21
Extended alternative fiscal scenario (with 10-year deficit increased by about \$2 trillion)	19.7	25
Illustrative scenario with 10-year deficit reduced by \$2 trillion	n.a.	n.a.
Illustrative scenario with 10-year deficit reduced by \$4 trillion	n.a.	n.a.
<b>Deficit (-) or Surplus Excluding Interest Payments</b>		
Without Macroeconomic Feedback		
Extended baseline	-0.9	-2
With Macroeconomic Feedback		
Extended baseline	-0.9	-2
Extended alternative fiscal scenario (with 10-year deficit increased by about \$2 trillion)	-1.6	-7
Illustrative scenario with 10-year deficit reduced by \$2 trillion	0.5	*
Illustrative scenario with 10-year deficit reduced by \$4 trillion	1.9	1
<b>Total Deficit (-) or Surplus</b>		
Without Macroeconomic Feedback		
Extended baseline	-3.8	-6
With Macroeconomic Feedback		
Extended baseline	-3.8	-7
Extended alternative fiscal scenario (with 10-year deficit increased by about \$2 trillion)	-5.0	-15
Illustrative scenario with 10-year deficit reduced by \$2 trillion	-2.1	-3
Illustrative scenario with 10-year deficit reduced by \$4 trillion	-0.4	*
<b>Federal Debt Held by the Public</b>		
Without Macroeconomic Feedback		
Extended baseline	78	103
With Macroeconomic Feedback		
Extended baseline	78	107
Extended alternative fiscal scenario (with 10-year deficit increased by about \$2 trillion)	87	175
Illustrative scenario with 10-year deficit reduced by \$2 trillion	68	72
Illustrative scenario with 10-year deficit reduced by \$4 trillion	59	39

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections, which include macroeconomic feedback, through 2025 and then extending the baseline concept for the rest of the long-term projection period. The extended baseline without macroeconomic feedback does not include any additional feedback after 2025.

The extended alternative fiscal scenario incorporates these assumptions: Certain policies that have been in place for a number of years but that are scheduled to change will be continued, some provisions of law that might be difficult to sustain for a long period will be modified, and federal revenues and certain categories of federal spending measured as shares of gross domestic product will be maintained at or near their historical averages over the long term.

In the illustrative scenarios with the 10-year deficit reduced by \$2 trillion and by \$4 trillion relative to the baseline, those amounts are the cumulative reductions in deficits excluding interest payments between 2016 and 2025.

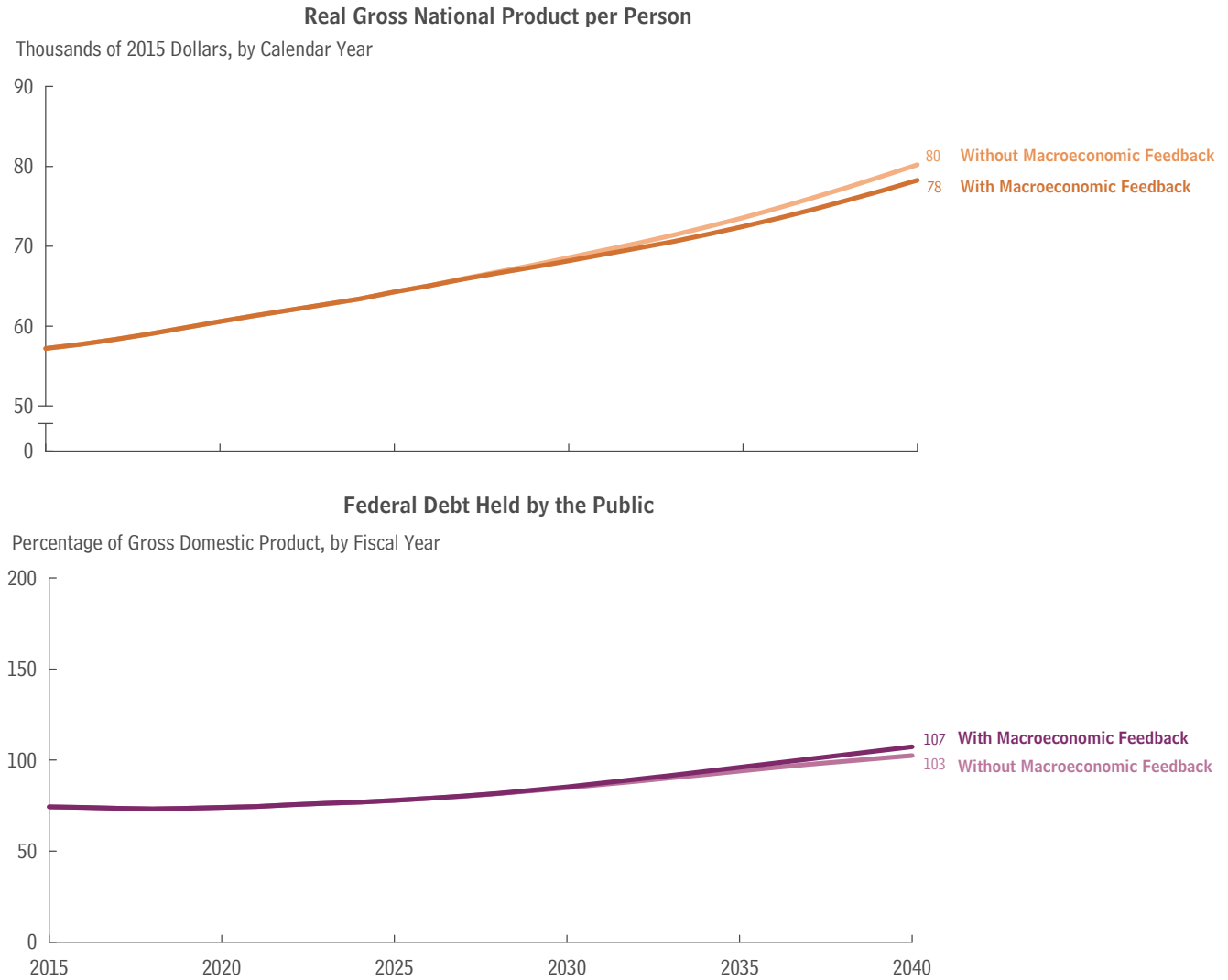
The results with macroeconomic feedback include the macroeconomic effects of the budget policies in the long run and the effects of that macroeconomic feedback on the budget. Those results are CBO's central estimates from ranges determined by alternative assessments about how much deficits crowd out investment in capital goods such as factories and computers (because a larger portion of private saving is being used to purchase government securities) and about how much people respond to changes in after-tax wages by adjusting the number of hours they work.

n.a. = not applicable; \* = between -0.5 percent and zero.

**Figure 6-2.**

**Effects of the Fiscal Policies in CBO’s Extended Baseline**

The fiscal policies in the extended baseline would further raise federal debt because they would reduce output and increase interest rates relative to the values for those factors without macroeconomic feedback—that is, in the economic benchmark that is intended to reflect stable economic conditions.



Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO’s 10-year baseline budget projections, which include macroeconomic feedback, through 2025 and then extending the baseline concept for the rest of the long-term projection period. The extended baseline without macroeconomic feedback does not include any additional feedback after 2025.

Real (inflation-adjusted) gross national product differs from gross domestic product, the more common measure of the output of the economy, by including the income that U.S. residents earn abroad and excluding the income that nonresidents earn in this country.

The results with macroeconomic feedback include the macroeconomic effects of the budget policies and the effects of that macroeconomic feedback on the budget. Those results are CBO’s central estimates from ranges determined by alternative assessments about how much deficits crowd out investment in capital goods such as factories and computers (because a larger portion of private saving is being used to purchase government securities) and about how much people respond to changes in after-tax wages by adjusting the number of hours they work.

percentage point. Outcomes could fall outside those ranges, which reflect only a few sources of uncertainty regarding the effects of fiscal policies on the economy. Significant uncertainty surrounds CBO's projections for other reasons as well. (That uncertainty is explored in Chapter 7.)

### **Budgetary Outcomes Under the Extended Baseline**

The reduction in economic output and increase in interest rates (relative to the benchmark) caused by the fiscal policies in the extended baseline would make budgetary outcomes worse. Lower output implies less income and thus less tax revenue; it also implies that for any given amount of federal debt, the ratio of debt to GDP would be higher. Moreover, higher interest rates would mean larger interest payments on federal debt. In the other direction, lower output implies lower federal spending on health care and retirement programs.<sup>15</sup>

After incorporating those additional budgetary effects, CBO projects that debt held by the public in 2040 would be 107 percent of GDP; it is projected to be 103 percent under the extended baseline without macroeconomic feedback after 2025 (see Table 6-1 and Figure 6-2). In addition to the effects on output, income, and interest rates reported here, the high and rising federal debt projected under the extended baseline would impose significant constraints on policymakers and would raise the risk of a fiscal crisis.

## **Long-Term Effects of an Alternative Fiscal Scenario**

Under the extended alternative fiscal scenario, certain policies now in place that are scheduled to change under current law are assumed to continue, some provisions of law that might be difficult to sustain for a long period are assumed to be modified, and federal revenues and certain categories of federal spending measured as shares of GDP

are assumed to be maintained at or near historical averages. Thus, the scenario incorporates changes to those current policies that are reflected in the extended baseline but that some analysts consider difficult to maintain.

Under the extended alternative fiscal scenario, deficits would be substantially larger than they are projected to be in the extended baseline, and marginal tax rates on labor income and capital income would be lower. In addition, transfers to working-age people would be larger, and federal investment would be higher. Taken together, those differences would cause output to be lower and interest rates to be higher in the long run than under the extended baseline. Those macroeconomic effects, in turn, would further increase the gap between deficits and debt in this scenario and those in the extended baseline.

### **Fiscal Policies in the Extended Alternative**

#### **Fiscal Scenario**

Under the extended alternative fiscal scenario, deficits excluding interest payments would be larger than they are projected to be in the extended baseline by about \$2 trillion through 2025 and by increasing amounts in subsequent years.<sup>16</sup> Deficits would be larger under this scenario than under the extended baseline because non-interest spending would be higher and revenues lower (see Table 6-1).

Noninterest spending under this scenario would be 0.5 percent of GDP higher in 2025 and roughly 4 percent of GDP higher in 2040 than in the extended baseline. Those differences stem from two assumptions about the policies underlying the scenario that differ from those underlying the extended baseline:

- The automatic reductions in spending in 2016 and later that are required by the Budget Control Act of 2011 as amended would not occur—although the original caps on discretionary appropriations in the 2011 law would remain in place; and

15. In this analysis (as well as the analysis in Chapter 7), decreases in GDP stemming from macroeconomic feedback are estimated to reduce revenues (given current tax law), spending for Social Security (because lower earnings result in smaller benefits), and federal spending for health care programs (according to CBO's standard approach to projecting long-term cost growth, which is described in Chapter 2). However, CBO projects that other federal noninterest spending would remain at the amounts projected in the extended baseline even if GDP deviated from that baseline.

16. For additional detail on the policies underlying the alternative fiscal scenario, see Congressional Budget Office, *The Budget and Economic Outlook: 2015 to 2025* (January 2015), [www.cbo.gov/publication/49892](http://www.cbo.gov/publication/49892). In contrast to the estimates of the budgetary effects of those policies that CBO published in that earlier report, the estimates shown in Table 6-1 in this report incorporate macroeconomic feedback.

- Federal noninterest spending—apart from that for Social Security, the major health care programs (net of offsetting receipts), and certain refundable tax credits—as a percentage of GDP would rise after 2025 to its average during the past two decades rather than fall significantly below that level, as it does in the extended baseline.

Eliminating the Budget Control Act's automatic spending reductions and raising projected spending for a broad set of programs after 2025 would increase transfers to working-age people. Those policy changes would also increase discretionary spending and, consequently, federal investment, CBO projects.

Revenues under the extended alternative fiscal scenario would be 0.3 percent of GDP lower in 2025 and roughly 1 percent of GDP lower in 2040 than they are projected to be under the extended baseline. Overall, revenues as a share of GDP under the extended alternative fiscal scenario would remain flat after 2025 rather than rise as they do in the extended baseline. In the latter, revenues are projected to grow over time as a percentage of GDP largely for two reasons: Rising real income would push a greater share of income into higher tax brackets, and certain tax increases enacted in the Affordable Care Act would, to a lesser extent, generate increasing amounts of revenue relative to the size of the economy. Historically, however, federal revenues as a percentage of GDP have not trended upward; they have fluctuated with no evident trend during the past few decades.

The path of revenues in the extended alternative fiscal scenario shows what would happen if policymakers extended expiring tax provisions over the next decade and then made other changes to the law to keep revenues measured as a percentage of GDP close to their historical average. In particular, CBO incorporated the following two assumptions in the extended alternative fiscal scenario that differ from those underlying the extended baseline:

- About 70 expiring tax provisions, including one that allows businesses to deduct 50 percent of new investments in equipment immediately, will be extended through 2025; and
- After 2025, revenues will equal 18 percent of GDP, which is the level projected for 2025 given that assumption about expiring tax provisions and which is slightly higher than the average of 17.4 percent over the past 50 years.

### **Output and Interest Rates Under the Extended Alternative Fiscal Scenario**

The substantially larger debt under the extended alternative fiscal scenario than under the extended baseline would reduce output and income below the projections in that baseline because of the additional crowding out of capital investment. In addition, the larger transfers to working-age people would reduce the supply of labor. However, the lower marginal tax rates on labor and capital income and the additional federal investment would boost output above the level projected for the extended baseline.

On balance, in CBO's assessment, output would be lower and interest rates would be higher under the extended alternative fiscal scenario than they would be under the extended baseline with macroeconomic feedback. In its central estimates, CBO projects that real GNP would be 0.6 percent lower in 2025 and about 5 percent lower in 2040; according to CBO's ranges of likely values for key variables, the reduction in real GNP would range from 0.3 percent to 1 percent in 2025 and from about 2 percent to about 8 percent in 2040 (see Table 6-2). However, even with the negative impact of the fiscal policies that are assumed under the alternative scenario, CBO projects that real GNP per person would be considerably higher in 2040 than in 2015 because of continued growth in productivity. Interest rates in 2040 would be about three-quarters of a percentage point higher under the alternative scenario than under the extended baseline, according to CBO's central estimate.

### **Budgetary Outcomes Under the Extended Alternative Fiscal Scenario**

Budgetary outcomes under the extended alternative fiscal scenario would be worsened by the economic changes that resulted from the fiscal policies included in it. With the effects of lower output and higher interest rates incorporated, federal debt held by the public under the extended alternative fiscal scenario would reach 175 percent of GDP in 2040, according to CBO's central estimate; it is projected to be 107 percent of GDP under the extended baseline with macroeconomic feedback (see Figure 6-3). Thus, debt would be much higher and would rise much more rapidly than under the extended baseline.

In addition to having the effects on output, income, and interest rates reported here, the alternative fiscal scenario would also bring about many of the other consequences associated with high and rising federal debt that are

**Table 6-2.****Long-Run Effects on Real GNP of the Fiscal Policies in Various Budget Scenarios**

Percentage Difference From Level in the Extended Baseline With Macroeconomic Feedback

	2025	2040
Extended Alternative Fiscal Scenario (With 10-Year Deficit Increased by About \$2 Trillion)		
Central estimate	-0.6	-5
Range	-1.0 to -0.3	-8 to -2
Illustrative Scenario With 10-Year Deficit Reduced by \$2 Trillion		
Central estimate	0.6	3
Range	0.3 to 1.0	1 to 4
Illustrative Scenario With 10-Year Deficit Reduced by \$4 Trillion		
Central estimate	1.2	5
Range	0.6 to 1.9	2 to 8

Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO's 10-year baseline budget projections through 2025 and then extending the baseline concept for the rest of the long-term projection period.

The extended alternative fiscal scenario incorporates these assumptions: Certain policies that have been in place for a number of years but that are scheduled to change will be continued, some provisions of law that might be difficult to sustain for a long period will be modified, and federal revenues and certain categories of federal spending measured as shares of gross domestic product will be maintained at or near their historical averages over the long term.

In the illustrative scenarios with the 10-year deficit reduced by \$2 trillion and by \$4 trillion relative to the baseline, those amounts are the cumulative reductions in deficits excluding interest payments between 2016 and 2025.

Real (inflation-adjusted) gross national product (GNP) differs from gross domestic product, the more common measure of the output of the economy, by including the income that U.S. residents earn abroad and excluding the income that nonresidents earn in this country.

The central estimates and ranges reflect alternative assessments about how much deficits crowd out investment in capital goods such as factories and computers (because a larger portion of private saving is being used to purchase government securities) and about how much people respond to changes in after-tax wages by adjusting the number of hours they work.

discussed above, and they would be especially acute under this scenario because the debt would be so high and would rise so rapidly. Such a path for debt would impose considerable constraints on policymakers and would significantly raise the risk of a fiscal crisis—and it would ultimately be unsustainable.

## Long-Term Effects of Two Illustrative Scenarios With Smaller Deficits

CBO also projected economic developments during the coming decade under two illustrative budgetary paths that would gradually decrease deficits through unspecified increases in tax revenue, cuts in spending, or some combination of the two.<sup>17</sup> In the long run, the reduced federal deficits and debt under those scenarios would

cause output and income to be higher and the ratio of federal debt to GDP to be lower than they would be under the extended baseline.

### Fiscal Policies in the Two Illustrative Scenarios

In the two illustrative scenarios, CBO assumed that total deficits excluding interest payments between 2015 and 2025 would be \$2 trillion or \$4 trillion lower than what they are projected to be under current law. The reduction in the deficit relative to the extended baseline would be comparatively small in 2016 but would increase steadily through 2025; at that point, the reduction in the deficit excluding interest payments would be \$360 billion, or nearly 1½ percent of GDP, under the first scenario and \$720 billion, or over 2½ percent of GDP, under the second. In each subsequent year, the reduction, measured as a percentage of GDP, would equal the 2025 reduction.

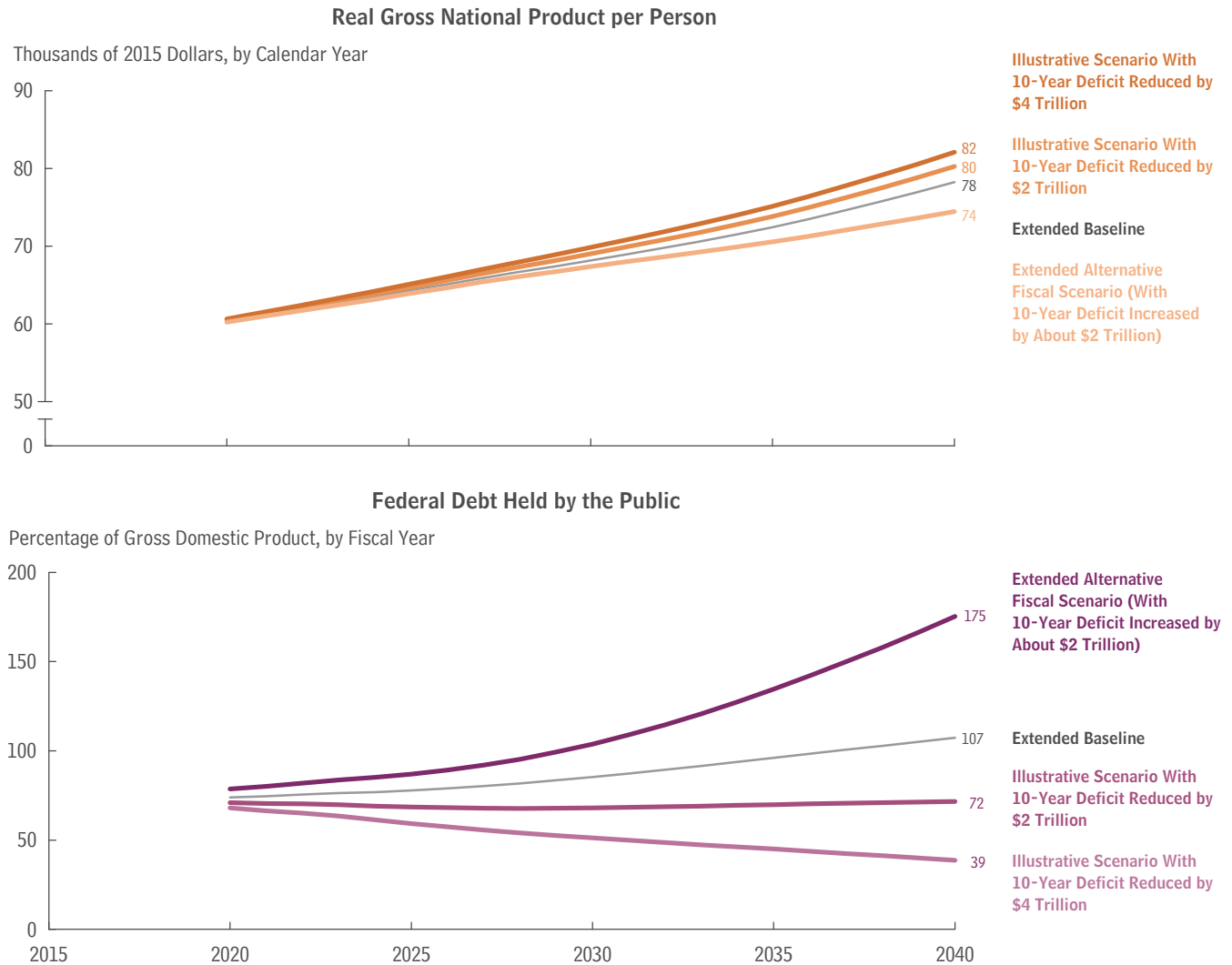
For the sake of simplicity and to avoid any presumption about which policies might be chosen to reduce the deficit, CBO analyzed those illustrative scenarios without

17. Congressional Budget Office, *Budgetary and Economic Outcomes Under Paths for Federal Revenues and Noninterest Spending Specified by Chairman Price* (March 2015), [www.cbo.gov/publication/49977](http://www.cbo.gov/publication/49977).

**Figure 6-3.**

**Long-Run Effects of the Fiscal Policies in CBO’s Extended Baseline, Extended Alternative Fiscal Scenario, and Illustrative Scenarios With Smaller Deficits**

The effects of lower economic output and higher interest rates under the extended alternative fiscal scenario would raise federal debt held by the public by increasing amounts over time. The two illustrative scenarios involving deficit reductions would have the opposite effects.



Source: Congressional Budget Office.

Notes: The extended baseline generally reflects current law, following CBO’s 10-year baseline budget projections through 2025 and then extending the baseline concept for the rest of the long-term projection period.

The extended alternative fiscal scenario incorporates these assumptions: Certain policies that have been in place for a number of years but that are scheduled to change will be continued, some provisions of law that might be difficult to sustain for a long period will be modified, and federal revenues and certain categories of federal spending measured as shares of gross domestic product will be maintained at or near their historical averages over the long term.

In the illustrative scenarios with the 10-year deficit reduced by \$2 trillion and by \$4 trillion relative to the baseline, those amounts are the cumulative reductions in deficits excluding interest payments between 2016 and 2025.

The results shown here do not include the macroeconomic effects of the scenarios from 2015 to 2019. Short-run macroeconomic effects are discussed later in this chapter.

Real (inflation-adjusted) gross national product differs from gross domestic product, the more common measure of the output of the economy, by including the income that U.S. residents earn abroad and excluding the income that nonresidents earn in this country.

The results are CBO’s central estimates from ranges determined by alternative assessments about how much deficits crowd out investment in capital goods such as factories and computers (because a larger portion of private saving is being used to purchase government securities) and about how much people respond to changes in after-tax wages by adjusting the number of hours they work.

specifying the tax and spending policies underlying them. As a result, the projected outcomes under the scenarios do not reflect any direct changes to incentives to work and save; in particular, marginal tax rates and transfers to working-age people are assumed to be the same as those under current law. Also, the contributions that government investment makes to future productivity and output are assumed to reflect their historical averages.

The estimated macroeconomic effects presented here therefore arise solely from the differences in deficits and debt. However, reducing budget deficits significantly below what they would be under current law without altering government investment or incentives to work and save would be very difficult. The overall economic impact of policies that lowered deficits would depend not only on the way they changed federal borrowing but also on the way they affected government investment and incentives to work and save.

### **Output and Interest Rates Under the Two Illustrative Scenarios**

Under the scenario involving a \$2 trillion reduction in deficits in the first decade, real GNP would be higher than it would be under the extended baseline with macroeconomic feedback by 0.6 percent in 2025 and by about 3 percent in 2040, according to CBO's central estimates (see Table 6-2). According to CBO's ranges of likely values for key variables, the increase in real GNP would probably be between 0.3 percent and 1 percent in 2025 and between about 1 percent and about 4 percent in 2040. Interest rates in 2040 would be about one-third of a percentage point lower under that scenario than under the extended baseline, according to CBO's central estimate.

Under the scenario involving a \$4 trillion reduction in deficits in the first decade, real GNP would be higher than it would be under the extended baseline with macroeconomic feedback by 1.2 percent in 2025 and by about 5 percent in 2040, by CBO's central estimates. According to CBO's ranges of likely values for key variables, the increase in real GNP would probably be between 0.6 percent and 1.9 percent in 2025 and between about 2 percent and about 8 percent in 2040. Interest rates in 2040 would be about two-thirds of a percentage point lower under that scenario than under the extended baseline, according to CBO's central estimate.

CBO projects that under either illustrative scenario, real GNP per person would be substantially higher in 2040 than in 2015.

### **Budgetary Outcomes Under the Two Illustrative Scenarios**

The higher output and lower interest rates under the illustrative scenarios would improve budgetary outcomes in the long run. For the scenario with \$2 trillion of deficit reduction in the first decade, federal debt held by the public in 2040 would stand at 72 percent of GDP, according to CBO's central estimates, slightly less than the 74 percent of GDP that debt amounted to at the end of 2014 and 35 percentage points lower than it is projected to be under the extended baseline with macroeconomic feedback (see Table 6-1 on page 81 and Figure 6-3). For the scenario with \$4 trillion of deficit reduction in the first decade, federal debt held by the public would fall to 39 percent of GDP in 2040, 68 percentage points lower than it is projected to be under the extended baseline with macroeconomic feedback; such debt was 35 percent of GDP in 2007 and averaged 38 percent over the past 50 years.

The scenario with the \$2 trillion deficit reduction would also limit the other consequences of high and rising federal debt that were discussed above. Because debt as a percentage of GDP would be fairly steady—albeit high by historical standards—the constraints on policymakers and the risk of a fiscal crisis would be smaller than they would be under the extended baseline scenario, in which the debt-to-GDP ratio is projected to increase substantially. The scenario with the \$4 trillion deficit reduction would reduce the other consequences of high debt much more sharply. With debt returning to about the percentage of GDP that it averaged over the past 50 years, the constraints on policymakers and the risk of a fiscal crisis would be greatly diminished compared with what they would be under the extended baseline.

### **Short-Term Macroeconomic Effects of the Three Additional Fiscal Scenarios**

The various fiscal policies whose long-term macroeconomic effects have been analyzed in this chapter would have short-term effects as well. In the short term, policies that increased federal spending or cut taxes (and thus boosted budget deficits) would generally increase the demand for goods and services, thereby raising output and employment above what they would be in the absence of those policies. Similarly, policies that decreased federal

**Table 6-3.****Short-Run Effects of the Fiscal Policies in Various Budget Scenarios**

	Inflation-Adjusted Gross Domestic Product (Percentage difference)		Full-Time-Equivalent Employment (Difference in millions)	
	2016	2017	2016	2017
Alternative Fiscal Scenario				
Central estimate	0.6	0.3	0.7	0.5
Range	0.1 to 1.0	0 to 0.6	0.2 to 1.3	0.1 to 0.9
Illustrative Scenario With 10-Year Deficit Reduced by \$2 Trillion				
Central estimate	-0.2	-0.2	-0.2	-0.2
Range	-0.3 to -0.1	-0.3 to 0	-0.3 to -0.1	-0.4 to -0.1
Illustrative Scenario With 10-Year Deficit Reduced by \$4 Trillion				
Central estimate	-0.3	-0.3	-0.4	-0.5
Range	-0.6 to -0.1	-0.6 to -0.1	-0.7 to -0.1	-0.9 to -0.1

Source: Congressional Budget Office.

Notes: Figures reflect the differences in the levels between outcomes under a scenario and outcomes under CBO's baseline, which incorporates an assumption that current laws generally remain unchanged.

The alternative fiscal scenario incorporates these assumptions: Certain policies that have been in place for a number of years but that are scheduled to change will be continued, some provisions of law that might be difficult to sustain for a long period will be modified, and federal revenues and certain categories of federal spending measured as shares of gross domestic product will be maintained at or near their historical averages over the long term.

In the illustrative scenarios with the 10-year deficit reduced by \$2 trillion and by \$4 trillion relative to the baseline, those amounts are the cumulative reductions in deficits excluding interest payments between 2016 and 2025.

The central estimates and ranges reflect alternative assessments about how much deficits crowd out investment in capital goods such as factories and computers (because a larger portion of private saving is being used to purchase government securities) and about how much people respond to changes in after-tax wages by adjusting the number of hours they work.

spending or raised taxes (and thus decreased budget deficits) would generally reduce demand, thereby lowering output and employment below what they would be otherwise. Those effects are stronger when short-term interest rates are near zero and output is below its potential (maximum sustainable) level, in part because under those conditions the Federal Reserve is unlikely to adjust short-term interest rates to try to offset the effects of changes in federal spending and taxes.

### Effects of the Extended Alternative Fiscal Scenario

The increase in deficits under the extended alternative fiscal scenario would cause real GDP to be higher in the next few years than it would be under current law, CBO estimates. The policies incorporated in that scenario would raise the demand for goods and services in the short run, increasing real GDP above what is projected under current law by 0.6 percent in 2016 and 0.3 percent in 2017, according to CBO's central estimates (see Table 6-3).<sup>18</sup> The policies would probably also increase real GDP for a few years after 2017, but CBO has not estimated the effects for

those years. According to CBO's ranges of likely outcomes for key variables, in 2016, real GDP would probably be between 0.1 percent and 1 percent higher, and in 2017, it would probably be equal to or be as much as 0.6 percent higher, than what is projected under current law.<sup>19</sup>

18. CBO's estimates of the short-term effects of the extended alternative fiscal scenario and the two illustrative scenarios on real GDP are very similar to the agency's estimates of the effects on real GNP. This analysis focuses on GDP to be consistent with CBO's other analyses of the short-term impact of fiscal policies. The estimates reported here refer to averages during the calendar years referenced; some of CBO's other analyses of the short-term impact of fiscal policies have focused on effects during particular quarters of the year.

19. For a discussion of CBO's analytical approach to estimating the short-term economic effects of fiscal policy, see Felix Reichling and Charles Whalen, *Assessing the Short-Term Effects on Output of Changes in Federal Fiscal Policies*, Working Paper 2012-08 (Congressional Budget Office, May 2012), [www.cbo.gov/publication/43278](http://www.cbo.gov/publication/43278); and Congressional Budget Office, *How CBO Analyzes the Effects of Changes in Federal Fiscal Policies on the Economy* (November 2014), [www.cbo.gov/publication/49494](http://www.cbo.gov/publication/49494).



To produce that additional output, businesses would hire more workers. According to CBO's central estimates, the policies in the alternative fiscal scenario would increase the number of full-time-equivalent employees above the number projected under current law by 0.7 million in 2016 and by 0.5 million in 2017.

### Effects of the Two Scenarios With Smaller Deficits

Under the two illustrative scenarios that reduce deficits, real GDP would be lower in the next several years than projected under current law, CBO estimates. Because the agency did not specify the fiscal policies underlying those two scenarios, the estimated macroeconomic effects arise solely from the differences in overall deficits.

In the \$2 trillion scenario, the reductions in the deficit excluding interest costs amount to \$40 billion in 2016 and \$76 billion in 2017. In the \$4 trillion scenario, those reductions amount to \$80 billion in 2016 and \$151 billion in 2017. Under the first scenario, real GDP in 2016 would be 0.2 percent lower than it is projected to be under current law (or between 0.1 percent and 0.3 percent lower, according to CBO's ranges of likely outcomes for key variables); in 2017, real GDP would again be 0.2 percent lower (or, according to CBO's ranges of likely outcomes, it would be equal to or be as much as 0.3 percent lower than what it is projected to be under current law).<sup>20</sup> Under the second scenario, real GDP would be 0.3 percent lower than it is projected to be under current law (or between 0.1 percent and 0.6 percent lower, according to CBO's

ranges of likely outcomes for key variables) in both 2016 and 2017. By CBO's estimates, the policies would continue to reduce real GDP below what it would be under current law for a few years after 2017, but CBO has not estimated the effects for those years.

Because businesses would produce less, they would hire fewer workers. According to CBO's central estimates, the number of full-time-equivalent employees under the first scenario would be 0.2 million smaller both in 2016 and 2017 than under current law; under the second scenario, there would be 0.4 million fewer full-time-equivalent employees in 2016 and 0.5 million fewer in 2017 than under current law.

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20. CBO's central estimates here reflect the agency's assumption that in the two illustrative scenarios, each one-dollar change in budget deficits excluding interest payments relative to those under current law would, in the short term and under current economic conditions, change output cumulatively by one dollar over several quarters. That dollar-for-dollar response lies within the ranges of estimated effects on GDP of many policies that CBO examined in analyzing the macroeconomic effects of the American Recovery and Reinvestment Act of 2009. CBO's range of likely outcomes implies that each one-dollar change in deficits excluding interest payments would, in the short term and under current economic conditions, change output cumulatively by between \$0.33 and \$1.67. For a similar approach, see Congressional Budget Office, *Budgetary and Economic Outcomes Under Paths for Federal Revenues and Noninterest Spending Specified by Chairman Price, March 2015* (March 2015), [www.cbo.gov/publication/49977](http://www.cbo.gov/publication/49977).