Congressional Budget Office

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Budgetary and Economic Outcomes Under Paths for Federal Revenues and Noninterest Spending Specified by Chairman Ryan, April 2014

At the request of the Chairman of the House Budget Committee, Congressman Paul Ryan, the Congressional Budget Office (CBO) has projected budgetary and economic outcomes under paths for federal revenues and spending (excluding interest payments) specified by the Chairman. The projections do not represent a cost estimate for legislation or an analysis of the effects of any specific policies. In particular, CBO has not considered whether the specified paths are consistent with the policy proposals or budget numbers that Chairman Ryan released on April 1, 2014, as part of his proposed budget resolution.

The projections in this report represent CBO's assessment of how federal debt and economic output would evolve from 2015 to 2040 under Chairman Ryan's specified paths for revenues and noninterest spending. They show how the paths would affect the economy and how those macroeconomic effects (or feedback) in turn would affect the federal budget. For comparison, CBO also updated the estimated effects of the four budget scenarios that it analyzed in its report *The 2013 Long-Term Budget Outlook*, published in September 2013:

- CBO's extended baseline, which is based on the assumption that current law generally remains unchanged;
- An extended alternative fiscal scenario, which includes the continuation of certain policies that have been in place for a number of years and the modification of some provisions of law that might be difficult to sustain for a long period;
- An illustrative scenario in which unspecified fiscal policies reduce the cumulative deficit over the next 10 years by a total of $2 trillion (excluding interest savings and macroeconomic effects) compared with the deficit projections in the extended baseline; and
- An illustrative scenario in which unspecified fiscal policies reduce the cumulative deficit over the next 10 years by a total of $4 trillion (excluding interest savings and macroeconomic effects) compared with the deficit projections in the extended baseline.

The updates to those scenarios and the assessment of the paths specified by Chairman Ryan are based on CBO's most recent 10-year budget and economic projections, which were released in February 2014.[1]

In the short term, policy changes that would decrease federal spending or increase taxes—and thus shrink budget deficits—would generally reduce total demand for goods

1. Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), www.cbo.gov/publication/45010.

and services. As a result, such fiscal policies would reduce output and employment below the levels projected in CBO's baseline. In the long term, the most important economic effect of such policies in this analysis comes from changes in the amount of federal debt held by the public. Over time, lower federal debt leaves more funds available for private investment and thereby causes output to be higher than it would be otherwise. Higher federal debt has the opposite effect, "crowding out" private investment and decreasing output.

Under the paths for revenues and noninterest spending specified by Chairman Ryan, the amount of federal debt held by the public would be smaller in all future years than it would be under CBO's extended baseline projections or under the three alternative budget scenarios that CBO analyzed (see Figure 1). The paths specified by Chairman Ryan envision cuts in spending (from the amounts projected to occur under current law) that begin in fiscal year 2015 and grow successively larger in later years; the paths also envision allowing revenues to rise as projected under current law until they reach 19 percent of gross domestic product (GDP)—in 2032, CBO projects—and then remain at 19 percent.[2] Under those paths, the cumulative deficit over the 2015–2024 period, excluding interest savings and macroeconomic effects, would be roughly $5 trillion lower than in CBO's baseline; with interest savings included and the resulting macroeconomic effects incorporated, the budget would show a surplus beginning in 2024. Economic output would be lower in the short term (because less federal spending would reduce total demand for goods and services), and higher in the long term (because less federal borrowing would free up resources for private investment), than under any of the other scenarios that CBO considered (see Figure 2).

Chairman Ryan's specified paths for revenues and spending would require major changes in current law. In particular, by 2040, noninterest spending would be roughly one-quarter less under those paths than under current law, and revenues would be roughly one-twentieth less; if those same proportional reductions had been applied in 2013, they would have represented reductions of roughly $800 billion in noninterest spending and a little over $100 billion in revenues. The specific policies that were adopted to produce those future paths would affect economic output not only by reducing debt but also by altering incentives to work and save and by changing behavior in other ways. In addition, those policies would affect people's well-being in various ways beyond the effects on overall economic output. This analysis includes the macroeconomic effects of changes in federal debt but not the effects of any specific policies on output or other aspects of people's well-being, because CBO did not analyze a set of policies underlying the specified paths.

The amounts of federal debt and economic output estimated for all of the scenarios in this report are highly uncertain. That uncertainty stems from the difficulties inherent in projecting the effects of federal fiscal policies, especially far into the future.

What Would Outcomes Be Under Current Law?

By relying on the assumption that current law generally continues without change, CBO's 10-year baseline budget projections provide a benchmark against which to measure the potential effects of proposals that would alter federal taxes or spending. The extended baseline used in this longer-term analysis follows CBO's February 2014 baseline projections through 2024 and then extends the baseline concept into later years, using the interest rates and growth rates for revenues and spending from the extended baseline in CBO's *2013 Long-Term Budget Outlook*.[3] (For more information about the assumptions underlying the extended baseline and the other scenarios in this analysis, and about CBO's analytical approach, see the appendix.)

With the macroeconomic effects of federal fiscal policies included, the total deficit under the extended baseline would grow from 2.6 percent of GDP in 2015 to 4.6 percent in 2025 and to larger percentages thereafter, CBO projects (see Table 1 on page 6). Federal debt held by the public would equal 73 percent of GDP in 2015 and then rise to 81 percent by 2025. In later years, debt would

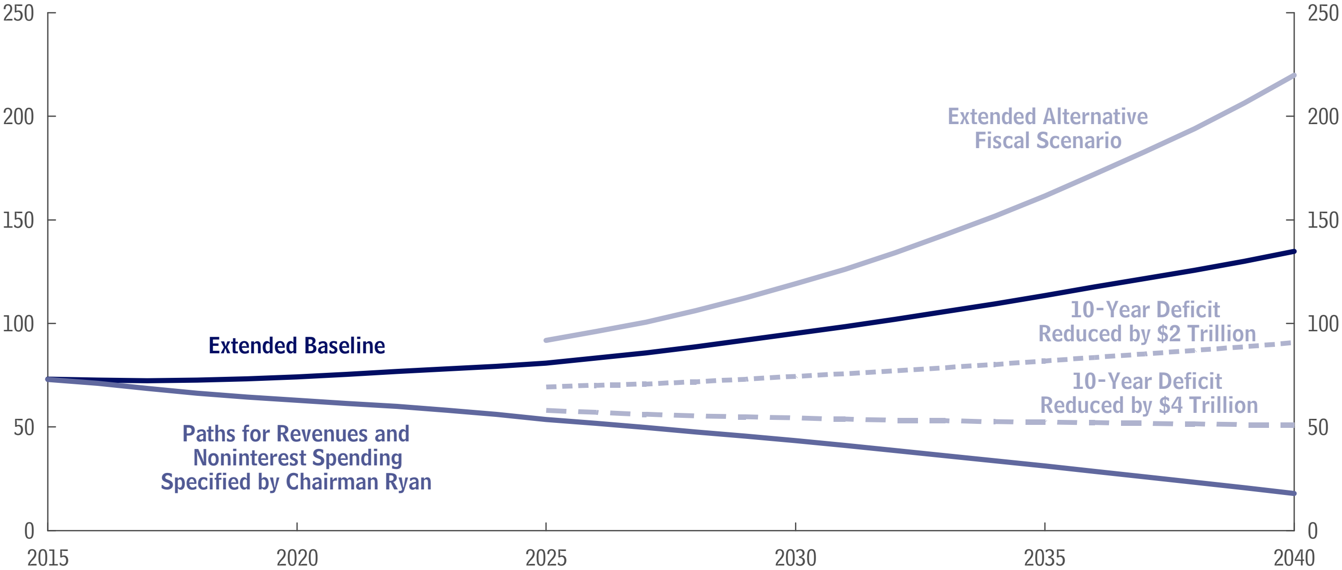
2. In this report, the years referred to when describing budget numbers are federal fiscal years (which run from October 1 to September 30), and amounts of federal debt are given as of the end of the fiscal year. The years referred to when describing economic output are calendar years.

3. CBO has not yet fully updated the long-term projections that it published in *The 2013 Long-Term Budget Outlook* (September 2013), www.cbo.gov/publication/44521. The extended baseline used in this analysis does, however, reflect the changes that CBO made to its 10-year projections in February 2014.

Figure 1.

Federal Debt Held by the Public Under Various Budget Scenarios, With Macroeconomic Effects, 2015 to 2040

(Percentage of gross domestic product, by fiscal year)



Source: Congressional Budget Office.

Notes: These results account for the following **macroeconomic effects**: the ways in which changes in federal debt affect investment in capital goods (such as factories and computers), the ways in which changes in after-tax wages (resulting from changes in capital investment) affect the supply of labor, and the ways in which those economic effects in turn affect the federal budget. The analysis incorporates the assumption that the budget scenarios do not alter the contributions that government investment makes to future productivity and output; those contributions are assumed to reflect their past long-term trends.

The **extended baseline** generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. Projections under the extended baseline incorporate effects from changes over time in incentives to work and save under current law.

The **paths for revenues and noninterest spending specified by Chairman Ryan** reduce deficits (excluding interest payments) as a percentage of gross domestic product (GDP) by increasing amounts over time relative to the extended baseline. The macroeconomic effects of those paths include the short-term effects of changes in demand for goods and services as well as the long-term effects of changes in federal debt. However, the estimates do not incorporate effects from any differences in incentives to work or save that might stem directly from differences in policies relative to those under the extended baseline, because CBO did not analyze specific policies that might underlie those paths.

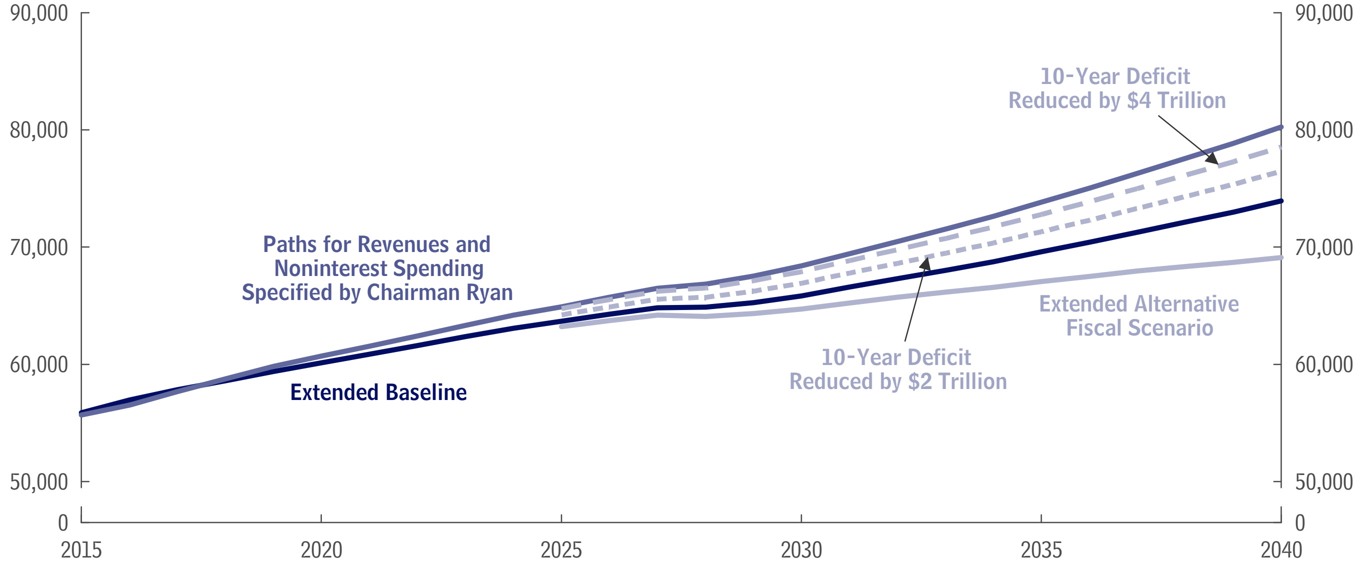
The **extended alternative fiscal scenario** incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified. The estimates incorporate effects from differences in incentives to work and save that stem directly from differences in policies relative to those under the extended baseline, as well as the long-term effects of changes in federal debt. The effects of the alternative fiscal scenario on the budget and the economy were not estimated for years before 2025.

The **10-year deficit reductions of $2 trillion and $4 trillion** relative to CBO's baseline are the cumulative reductions between 2015 and 2024, excluding interest savings and macroeconomic effects. The reductions in the deficit in 2024, expressed as a percentage of GDP without macroeconomic effects, are assumed to continue in subsequent years. The estimates do not incorporate effects from any differences in incentives to work or save that might stem directly from differences in policies relative to those under the extended baseline, because CBO did not analyze specific policies that might underlie the illustrative deficit reduction paths. The effects of those paths on the budget and the economy were not estimated for years before 2025.

Figure 2.

Real Gross National Product per Person Under Various Budget Scenarios, 2015 to 2040

(2014 dollars, by calendar year)



Source: Congressional Budget Office.

Notes: These results include the long-term effects of the ways in which changes in federal debt affect investment in capital goods (such as factories and computers) and the ways in which changes in after-tax wages (resulting from changes in capital investment) affect the supply of labor. The analysis incorporates the assumption that the budget scenarios do not alter the contributions that government investment makes to future productivity and output; those contributions are assumed to reflect their past long-term trends.

Unlike the more commonly cited gross domestic product, real (inflation-adjusted) **gross national product** includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in the United States.

The **extended baseline** generally adheres closely to current law, following CBO’s 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. Projections under the extended baseline incorporate effects from changes over time in incentives to work and save under current law.

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increase as a percentage of GDP by successively larger amounts, reaching 135 percent by 2040.[4]

Those estimates of federal deficits and debt incorporate the feedback effects on the federal budget of changes in economic conditions. Increased borrowing by the government would eventually reduce private investment in productive capital, because the portion of total savings that investors used to buy Treasury securities would not be available to finance private investment. The result would be a smaller stock of capital and lower output and income in the long term than would otherwise be the case. Lower income would reduce tax revenues; it would also reduce federal spending, though by a smaller amount, by decreasing spending on health care and retirement programs.[5]

Despite those reductions in output and income, however, the continued growth of productivity projected under the extended baseline would make output and income per person higher in the future than they are now, even in real terms (that is, adjusted to remove the effects of inflation). Real gross national product (in 2014 dollars) is projected to be about $56,000 per person in 2015 and about $64,000 per person in 2025 under the extended baseline with macroeconomic effects.[6] In assessing the long-term impact of tax and spending policies on output, CBO focuses on effects on gross national product (GNP) rather than on the more commonly cited gross domestic product. GNP includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in the United States; thus, GNP is a better measure than GDP of the resources available to U.S. households.[7]

The large and growing amount of federal debt that CBO projects under the extended baseline would have significant negative consequences besides its effects on output and the economic feedback on the budget. Higher federal spending to pay interest on the debt would require larger changes in tax and spending policies to meet any chosen targets for budget deficits and debt. At the same time, the government would have less flexibility to use tax and spending policies to respond to unexpected challenges, such as economic downturns or wars. In addition, the risk of a fiscal crisis—in which investors would demand very high interest rates to finance the government's borrowing needs—would be greater.

What Would Outcomes Be Under the Paths Specified by Chairman Ryan?

Chairman Ryan provided the following paths for federal revenues and noninterest spending (not including macroeconomic effects) to be used in CBO's analysis:

- For revenues, annual amounts were specified to equal the amounts in CBO's extended baseline until revenues reached 19 percent of GDP and then specified to remain at 19 percent of GDP each year thereafter.

- For noninterest spending, annual amounts were specified to fall over time relative to the size of the economy. As a percentage of GDP, noninterest spending was specified to equal about 19 percent in 2015, generally decline for the following 10 years, and then hover around 16½ percent in most years thereafter.[8]

4. CBO's current projections of debt from 2015 to 2040 under the extended baseline exceed the amounts projected in *The 2013 Long-Term Budget Outlook.* The main reason is that CBO has lowered its projections for the growth of real GDP and for the GDP price index over the next decade, which has reduced its revenue projections for that period and thus raised its projections of deficits and debt.

5. Federal spending would fall if income was lower because Social Security benefits are linked to earnings and because spending on health care tends to vary with total income over the long term. For the purposes of this analysis, other noninterest spending is assumed to be unaffected by changes in income.

6. CBO's current projections of real gross national product per person under the extended baseline are lower in all years than the amounts projected in *The 2013 Long-Term Budget Outlook,* primarily because CBO is now projecting slower growth in output over the next decade. The largest contributor to that change in projected economic growth is a smaller estimate of the growth in the maximum sustainable output of the economy (potential output), both in recent years and over the next decade.

7. The difference between GNP and GDP is particularly important in analyzing the effects of fiscal policies over the long term: When the federal government runs larger budget deficits, more capital tends to flow into the United States from other countries, offsetting some of the crowding out of investment that government borrowing produces. However, over time, a growing amount of income must be paid to foreign investors as profits or interest on that invested capital. Therefore, other things being equal, increases in debt cause a greater reduction in GNP (and the income of U.S. households) than in GDP, and decreases in debt cause a greater rise in GNP than in GDP. In the short run, by contrast, fiscal policies affect GNP and GDP very similarly, through their effects on total demand.

8. For details, see the appendix to this report and the supplemental material posted at www.cbo.gov/publication/45211.

Table 1.

Budgetary Outcomes Under Various Budget Scenarios, With Macroeconomic Effects, Selected Years, 2025 to 2040

(Percentage of gross domestic product, by fiscal year)

	2025	2030	2035	2040
	Revenues			
Extended Baseline	18.4	18.8	19.2	19.7
Paths for Revenues and Noninterest Spending Specified by Chairman Ryan	18.4	18.8	19.0	19.0
Extended Alternative Fiscal Scenario	18.1	18.1	18.1	18.1
10-Year Deficit Reduced by $2 Trillion	n.a.	n.a.	n.a.	n.a.
10-Year Deficit Reduced by $4 Trillion	n.a.	n.a.	n.a.	n.a.
	Spending Excluding Interest Payments			
Extended Baseline	19.5	20.8	21.7	22.3
Paths for Revenues and Noninterest Spending Specified by Chairman Ryan	16.0	16.4	16.4	16.3
Extended Alternative Fiscal Scenario	20.3	22.8	24.5	25.6
10-Year Deficit Reduced by $2 Trillion	n.a.	n.a.	n.a.	n.a.
10-Year Deficit Reduced by $4 Trillion	n.a.	n.a.	n.a.	n.a.
	Deficit (-) or Surplus Excluding Interest Payments			
Extended Baseline	-1.1	-2.0	-2.5	-2.7
Paths for Revenues and Noninterest Spending Specified by Chairman Ryan	2.5	2.4	2.6	2.7
Extended Alternative Fiscal Scenario	-2.3	-4.7	-6.5	-7.5
10-Year Deficit Reduced by $2 Trillion	0.3	-0.5	-0.9	-1.1
10-Year Deficit Reduced by $4 Trillion	1.8	0.9	0.6	0.4
	Total Deficit (-) or Surplus			
Extended Baseline	-4.6	-6.8	-8.3	-9.9
Paths for Revenues and Noninterest Spending Specified by Chairman Ryan	0.1	0.3	1.1	1.8
Extended Alternative Fiscal Scenario	-6.3	-10.8	-15.5	-21.1
10-Year Deficit Reduced by $2 Trillion	-2.6	-4.1	-5.0	-5.6
10-Year Deficit Reduced by $4 Trillion	-0.7	-1.7	-1.9	-2.0
	Federal Debt Held by the Public			
Extended Baseline	81	95	113	135
Paths for Revenues and Noninterest Spending Specified by Chairman Ryan	54	43	31	18
Extended Alternative Fiscal Scenario	92	119	162	220
10-Year Deficit Reduced by $2 Trillion	69	74	82	91
10-Year Deficit Reduced by $4 Trillion	58	54	52	51

Continued

Table 1. **Continued**

Budgetary Outcomes Under Various Budget Scenarios, With Macroeconomic Effects, Selected Years, 2025 to 2040

Source: Congressional Budget Office.

Notes: These results account for the following **macroeconomic effects**: the ways in which changes in federal debt affect investment in capital goods (such as factories and computers), the ways in which changes in after-tax wages (resulting from changes in capital investment) affect the supply of labor, and the ways in which those economic effects in turn affect the federal budget. The analysis incorporates the assumption that the budget scenarios do not alter the contributions that government investment makes to future productivity and output; those contributions are assumed to reflect their past long-term trends.

The **extended baseline** generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. Projections under the extended baseline incorporate effects from changes over time in incentives to work and save under current law.

The **paths for revenues and noninterest spending specified by Chairman Ryan** reduce deficits (excluding interest payments) as a percentage of gross domestic product (GDP) by increasing amounts over time relative to the extended baseline. The macroeconomic effects of those paths include the short-term effects of changes in demand for goods and services as well as the long-term effects of changes in federal debt. However, the estimates do not incorporate effects from any differences in incentives to work or save that might stem directly from differences in policies relative to those under the extended baseline, because CBO did not analyze specific policies that might underlie those paths.

The **extended alternative fiscal scenario** incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified. The estimates incorporate effects from differences in incentives to work and save that stem directly from differences in policies relative to those under the extended baseline, as well as the long-term effects of changes in federal debt. The effects of the alternative fiscal scenario on the budget and the economy were not estimated for years before 2025.

The **10-year deficit reductions of $2 trillion and $4 trillion** relative to CBO's baseline are the cumulative reductions between 2015 and 2024, excluding interest savings and macroeconomic effects. The reductions in the deficit in 2024, expressed as a percentage of GDP without macroeconomic effects, are assumed to continue in subsequent years. The estimates do not incorporate effects from any differences in incentives to work or save that might stem directly from differences in policies relative to those under the extended baseline, because CBO did not analyze specific policies that might underlie the illustrative deficit reduction paths. The effects of those paths on the budget and the economy were not estimated for years before 2025.

n.a. = not applicable.

Under those specified paths, federal revenues would be lower than under the extended baseline after 2032, and federal noninterest spending would be lower than under the extended baseline each year after 2014, by increasing amounts (see Figure 3). Over the 2015–2024 period, the cumulative deficit (excluding interest savings and macroeconomic effects) would be about $5 trillion less than in CBO's baseline. Compared with the baseline, those paths would leave revenues unchanged during that 10-year period and would reduce cumulative spending on benefit programs and activities other than interest payments by 12 percent during those years. By 2040, revenues would be 4 percent less, and noninterest spending 26 percent less, than the amounts in the extended baseline.

With interest savings and macroeconomic effects incorporated, federal debt held by the public as a share of GDP would fall to 54 percent in 2025 and to 18 percent in 2040 under the specified paths, CBO projects—compared with 81 percent and 135 percent, respectively, under the extended baseline (see Table 1). Declining levels of federal debt relative to GDP would have additional positive consequences beyond their effects on output and on the budget: Because federal debt would be much lower than under the extended baseline, policymakers would have much more leeway to use tax and spending policies to respond to economic downturns or wars, and the risk of a fiscal crisis would be much smaller.

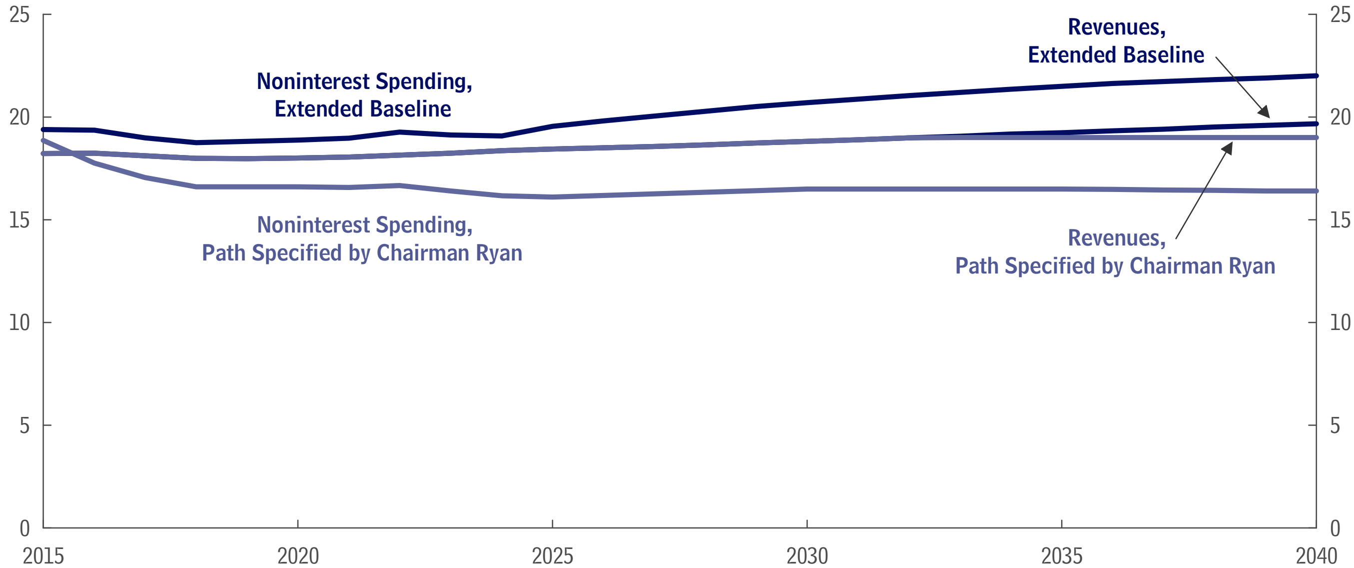
Real GNP per person would be lower under Chairman Ryan's specified paths than under the extended baseline from 2015 to 2017, CBO estimates, because reduced federal spending would dampen overall demand for goods and services (see Figure 4). Because CBO did not analyze specific policies that might underlie those paths, the agency made assumptions about how much each dollar of deficit reduction would affect overall demand.

Starting in 2018, real per capita GNP would be higher than under the extended baseline—by 2 percent in 2025

Figure 3.

Revenues and Noninterest Spending Under Paths Specified by Chairman Ryan and Under CBO's Extended Baseline, Without Macroeconomic Effects, 2015 to 2040

(Percentage of gross domestic product under the extended baseline without macroeconomic effects, by fiscal year)



Source: Congressional Budget Office.

Notes: The **extended baseline** generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. The extended baseline without macroeconomic effects incorporates the assumptions that macroeconomic conditions are consistent with those in the 10-year baseline budget projections through 2024 but in later years generally reflect the economic experience of the past few decades and that estimated revenues and spending are consistent with those economic conditions.

The **paths for revenues and noninterest spending specified by Chairman Ryan** reduce deficits (excluding interest payments) as a percentage of gross domestic product by increasing amounts over time relative to the extended baseline. The paths do not include effects from differences in economic conditions relative to those assumed in the extended baseline without macroeconomic effects.

and by roughly 9 percent in 2040 (see Table 2 on page 10). GNP would be higher in the long term under the specified paths because lower government deficits would lead to both an increase in private investment and a decrease in net inflows of capital from foreign countries, boosting domestic production and reducing net payments of interest and profits to foreigners, compared with what would occur under current law. Real average family income, before accounting for federal transfer payments and taxes, would also be higher than under the extended baseline. The effects would differ among families, however, with some receiving higher income and others potentially receiving lower income. Effects on family income after accounting for federal transfer payments and taxes would depend on how the particular policies that were adopted to produce the specified paths compared with the policies in the extended baseline.

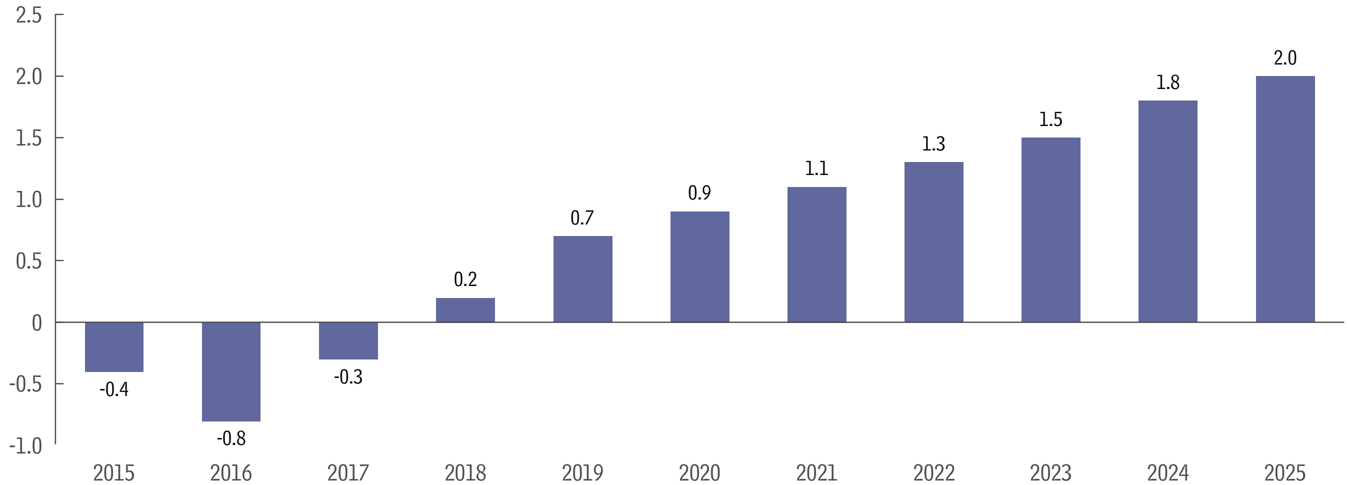
Those estimates of budgetary and economic outcomes are highly uncertain. The numbers reported here are CBO's central estimates, which are based on values at the midpoints of estimated ranges for key parameters, such as the effect of an additional dollar of deficit on private investment. Alternative values for those parameters—as well as many other factors—could cause outcomes to differ substantially from the estimates presented here. (That uncertainty is discussed further in the last section of this report.)

CBO's estimates of the macroeconomic effects of the paths specified by Chairman Ryan reflect only the differences in deficits and debt between those paths and the extended baseline, which have short-term effects on the demand for goods and services and long-term effects on capital investment and net payments to foreigners. The estimates do not incorporate effects from any differences

Figure 4.

Effects of the Paths for Revenues and Noninterest Spending Specified by Chairman Ryan on Real Gross National Product per Person Relative to CBO's Extended Baseline, 2015 to 2025

(Percentage difference from CBO's extended baseline, by calendar year)



Source: Congressional Budget Office.

Notes: The macroeconomic effects of the paths for revenues and noninterest spending specified by Chairman Ryan include the short-term effects of changes in demand for goods and services as well as the long-term effects of changes in federal debt. Because CBO did not analyze specific policies that might underlie those paths, the agency made assumptions about numerous factors to provide a rough estimate of the potential effects. Three of those assumptions are particularly noteworthy. First, the estimates incorporate assumptions about the short-term effects of deficit reduction on output; those effects are assumed to diminish over time and to be inconsequential after 2018. Second, the estimates do not incorporate effects from any differences in incentives to work or save that might stem directly from differences in policies relative to those under the extended baseline. Third, the analysis incorporates the assumption that the paths do not alter the contributions that government investment makes to future productivity and output; those contributions are assumed to reflect their past long-term trends.

Unlike the more commonly cited gross domestic product, real (inflation-adjusted) **gross national product** includes the income that U.S. residents earn abroad and excludes the income that foreigners earn in the United States.

The **extended baseline** generally adheres closely to current law, following CBO's 10-year baseline budget projections through 2024 and then extending the baseline concept for the rest of the long-term projection period. Projections under the extended baseline incorporate effects from changes over time in incentives to work and save under current law.

The **paths for revenues and noninterest spending specified by Chairman Ryan** reduce deficits (excluding interest payments) as a percentage of gross domestic product by increasing amounts over time relative to the extended baseline.

in people's incentives to work or save that might stem directly from changes in tax policies or benefit programs relative to those under the extended baseline, because CBO did not analyze particular policies that might produce the specified paths.[9] CBO assumed, for example, that marginal tax rates (the percentage of an additional dollar of income that is paid in taxes) would be the same under the specified paths as under the extended baseline. In addition, CBO's analysis incorporates the assumption that the paths do not change the contributions of government investment to future productivity and output; those contributions are assumed to reflect their past long-term trends.[10]

Nonetheless, significantly changing the paths for revenues and spending from those projected to occur under current law would probably involve altering incentives for

9. For discussion of how federal policies affect saving and working, 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; and Congressional Budget Office, *How the Supply of Labor Responds to Changes in Fiscal Policy* (October 2012), www.cbo.gov/publication/43674.

10. For discussion of the long-term economic benefits of federal investment, see Congressional Budget Office, *Federal Investment* (December 2013), www.cbo.gov/publication/44974.

Table 2.

Effects of Various Budget Scenarios on Real Gross National Product per Person Relative to CBO's Extended Baseline, 2025 and 2040

(Percentage difference from CBO's extended baseline, by calendar year)

	2025	2040
Paths for Revenues and Noninterest Spending Specified by Chairman Ryan		
Central estimate	2.0	9
Likely range	0.9 to 3.0	4 to 14
Extended Alternative Fiscal Scenario		
Central estimate	-0.7	-7
Likely range	-0.4 to -1.1	-3 to -12
10-Year Deficit Reduced by $2 Trillion		
Central estimate	0.9	3
Likely range	0.4 to 1.3	2 to 6
10-Year Deficit Reduced by $4 Trillion		
Central estimate	1.7	6
Likely range	0.8 to 2.6	3 to 10

Source: Congressional Budget Office.

Notes: These results include the long-term effects of the ways in which changes in federal debt affect investment in capital goods (such as factories and computers) and the ways in which changes in after-tax wages (resulting from changes in capital investment) affect the supply of labor. The analysis incorporates the assumption that the budget scenarios do not alter the contributions that government investment makes to future productivity and output; those contributions are assumed to reflect their past long-term trends.

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The **paths for revenues and noninterest spending specified by Chairman Ryan** reduce deficits (excluding interest payments) as a percentage of gross domestic product (GDP) by increasing amounts over time relative to the extended baseline. The macroeconomic effects of those paths include the short-term effects of changes in demand for goods and services as well as the long-term effects of changes in federal debt. However, the estimates do not incorporate effects from any differences in incentives to work or save that might stem directly from differences in policies relative to those under the extended baseline, because CBO did not analyze specific policies that might underlie those paths.

The **extended alternative fiscal scenario** incorporates the assumptions that certain policies that have been in place for a number of years will be continued and that some provisions of law that might be difficult to sustain for a long period will be modified. The estimates incorporate effects from differences in incentives to work and save that stem directly from differences in policies relative to those under the extended baseline, as well as the long-term effects of changes in federal debt. The effects of the alternative fiscal scenario on the budget and the economy were not estimated for years before 2025.

The **10-year deficit reductions of $2 trillion and $4 trillion** relative to CBO's baseline are the cumulative reductions between 2015 and 2024, excluding interest savings and macroeconomic effects. The reductions in the deficit in 2024, expressed as a percentage of GDP without macroeconomic effects, are assumed to continue in subsequent years. The estimates do not incorporate effects from any differences in incentives to work or save that might stem directly from differences in policies relative to those under the extended baseline, because CBO did not analyze specific policies that might underlie the illustrative deficit reduction paths. The effects of those paths on the budget and the economy were not estimated for years before 2025.

The **central estimate** uses values at the midpoints of estimated ranges for key inputs. The **likely range** reflects estimates incorporating alternative assessments of two key parameters in the analysis: the responsiveness of private investment to changes in government borrowing and the responsiveness of the supply of labor to changes in after-tax wages. That range is intended to cover roughly the middle two-thirds of the likely values for those parameters. This type of analysis is sensitive to many factors other than alternative assessments of those parameters.

working and saving and the contribution of government investment to output. If so, the paths' overall economic effects would depend on how the specific policies underlying the paths altered those factors, as well as on the consequences of the changes in federal debt considered in this analysis.

What Would Outcomes Be Under Alternative Budget Scenarios?

In *The 2013 Long-Term Budget Outlook*, CBO showed how the budget and the economy would evolve differently under three budget scenarios other than the extended baseline. Those additional scenarios are the extended alternative fiscal scenario, which would result in larger deficits and more debt than in the extended baseline, and two illustrative deficit reduction paths, which would result in smaller deficits and debt. In this report, for comparison with the budgetary and economic outcomes under the extended baseline and the paths specified by Chairman Ryan, CBO updated its projections for those three scenarios.

Compared with the extended baseline, the scenarios that involve smaller deficits would reduce output over the next few years, CBO estimates, reflecting the short-term impact of tax and spending policies on the demand for goods and services. After that, by contrast, the continuation of smaller deficits would increase output, reflecting the long-term effect of deficits on national saving and investment. The scenario that involves larger deficits would have the opposite consequences. Like the other projections in this report, the estimated effects of those scenarios are highly uncertain; the results reported here are CBO's central estimates. (The quantitative effects of those three scenarios on the budget and the economy were not estimated for years before 2025.)

Extended Alternative Fiscal Scenario

Under CBO's extended alternative fiscal scenario, certain policies that are now in place but that are scheduled to change under current law are assumed to continue, and some provisions of current law that might be difficult to sustain for a long period are assumed to be modified. (For details about the assumptions underlying that scenario, see the appendix.) The cumulative deficit over the 2015–2024 period (excluding additional interest costs and macroeconomic effects) would be about $2 trillion higher under that scenario than in CBO's baseline. In later years, deficits would exceed those in the extended baseline by growing amounts.

With macroeconomic effects incorporated, federal debt held by the public would increase to 92 percent of GDP by 2025 under the extended alternative fiscal scenario and would rise to much higher amounts in later years (see Table 1 on page 6). Real GNP per person would be lower under that scenario than under the extended baseline by 0.7 percent in 2025, CBO projects, and by increasingly large percentages thereafter (see Figure 2 on page 4 and Table 2 on page 10). The reductions in real GNP would occur because the lower marginal tax rates on income from labor and capital under the extended alternative fiscal scenario would only partly offset the unfavorable effects that larger deficits would have on the economy. The other problems discussed above that stem from additional federal debt would become much more acute than under the extended baseline because debt would be higher and would rise much more rapidly.

Unlike the analysis of Chairman Ryan's paths or of the two illustrative deficit reduction paths, those estimates incorporate effects from differences in incentives to work and save that result directly from the differences in specific policies between the extended alternative fiscal scenario and the extended baseline. The estimates also include the long-term effects of changes in federal debt under that scenario. In addition, CBO's analysis incorporates the assumption that the contributions of government investment to future productivity and output would not be affected by the policy changes in the extended alternative fiscal scenario; those contributions are assumed to reflect their past long-term trends.

Two Illustrative Deficit Reduction Paths

For its two illustrative budgetary paths with smaller deficits and debt, CBO assumed that deficits would be reduced gradually relative to what they would be under current law so that the total deficit over the 2015–2024 period (excluding interest payments and macroeconomic effects) would be either $2 trillion or $4 trillion smaller than under the extended baseline. Those amounts are less than the roughly $5 trillion in deficit reduction over that period envisioned in the paths specified by Chairman Ryan. For this report, CBO assumed that the deficit reduction under the two illustrative paths would begin in 2015 and that after 2024, the decrease in annual deficits relative to the extended baseline would continue at the same percentage of GDP (without macroeconomic effects) projected for 2024. For the sake of simplicity, and to avoid any presumption about what particular policies might be chosen to reduce the deficit, CBO analyzed those two illustrative deficit reduction paths without specifying the tax and spending policies underlying them.

With macroeconomic effects incorporated, the path with $2 trillion of deficit reduction over the next decade would cause federal debt held by the public to decline slightly in coming years, to 69 percent of GDP in 2025, but then rise in later years, CBO projects (see Table 1 on page 6). In contrast, the path with $4 trillion of deficit reduction would cause debt to decline steadily throughout CBO's projection period—to 58 percent of GDP in 2025 and slightly lower percentages thereafter.

Relative to the extended baseline, real GNP per person in 2025 would be 0.9 percent higher under the path with $2 trillion of deficit reduction over 10 years and 1.7 percent higher under the path with $4 trillion of deficit reduction (see Table 2 on page 10). Those percentage increases would grow over time as the lower debt under both of those paths had beneficial effects on the economy. Even so, real GNP per person in 2025 and later years would be lower under both of those illustrative budgetary paths than under Chairman Ryan's specified paths (see Figure 2 on page 4) because CBO's illustrative paths would result in larger debt held by the public than Chairman Ryan's specified paths would.

As with Chairman Ryan's paths, the estimates for the illustrative paths do not incorporate effects from any differences in incentives to work or save that might be generated directly by differences in policies relative to those under the extended baseline, because CBO did not analyze specific policies that might underlie those paths. In particular, marginal tax rates were assumed to be the same as under current law. In addition, CBO's analysis incorporates the assumption that the paths do not change the contributions of government investment to future productivity and output; those contributions are assumed to reflect their past long-term trends. Therefore, the estimated economic effects presented here arise solely from the differences in deficits and debt.

Nonetheless, as is the case with the paths specified by Chairman Ryan, specific policies to reduce budget deficits significantly from the amounts projected to occur under current law would probably involve changing incentives to work or save and the contribution of government investment to economic output. If that happened, the overall economic impact of the deficit reduction policies would depend both on the changes in federal borrowing and on the policies' other effects.

How Uncertain Are the Projected Outcomes?

The projections for debt, revenues, spending, and economic output presented in this report are highly uncertain for many reasons. The projections are based on CBO's central estimates for key parameters of economic behavior—including the extent to which government borrowing crowds out capital investment and the effect that changes in real after-tax wages have on the supply of labor.[11] Estimates of those and other economic parameters are uncertain, and analysis using different parameters can produce results that are substantially higher or lower than CBO's central estimates. For example, under the range of estimates that CBO uses for the crowding out of investment and the responsiveness of the labor supply, the increase in real GNP in 2040 under the paths specified by Chairman Ryan, relative to the amount projected under the extended baseline, would range from 4 percent to 14 percent (see Table 2 on page 10).

As discussed in detail in Chapter 7 of *The 2013 Long-Term Budget Outlook*, this type of analysis is also sensitive to many factors other than the extent to which government borrowing crowds out capital investment and the way in which the supply of labor responds to changes in wages. Those other factors include projections of future productivity, interest rates, and federal spending on health care. In addition, an economic depression, a major war, or large unexpected changes in birth rates, life expectancy, immigration, or people's participation in the labor force would have important effects on the projected outcomes. Even small differences on an annual basis can have a significant effect when cumulated over several decades. Moreover, the macroeconomic effects of the budgetary outcomes in CBO's scenarios or in the paths specified by Chairman Ryan could differ from the estimates reported here because of the particular policies chosen to achieve those budgetary outcomes, the ways in which households and businesses responded to those policies, and numerous other factors.

11. Among the scenarios analyzed in this report, CBO assumed that only under the extended alternative fiscal scenario would after-tax wages be changed directly by differences in marginal tax rates from those that would occur under current law, because that is the only scenario for which an alternative set of tax policies was specified. All of the scenarios would affect after-tax wages indirectly, however, insofar as resulting changes in capital investment led to changes in real wages.

Appendix:
CBO's Approach to the Analysis

The Congressional Budget Office's (CBO's) most recent long-term budget projections were issued in September in *The 2013 Long-Term Budget Outlook*. Since then, the agency has updated its baseline budget projections for the next 10 years to incorporate changes in law and updates to its economic forecast and technical estimating procedures. Those baseline projections were published in February in *The Budget and Economic Outlook: 2014 to 2024*.

To project outcomes under the extended baseline in this report, CBO started with those 10-year projections and extended the baseline concept after 2024 following the approach in *The 2013 Long-Term Budget Outlook*. (CBO plans to release a fully updated extended baseline later this year that will reflect the latest 10-year projections as well as revisions to the long-term economic outlook and to CBO's technical estimating procedures.)

To project outcomes under the other budget scenarios in this report, CBO used specifications from House Budget Committee Chairman Paul Ryan for one scenario and its own assumptions for three others: the extended alternative fiscal scenario and the two illustrative deficit reduction paths. Those assumptions are consistent with the ones in *The 2013 Long-Term Budget Outlook*.

Projecting Outcomes Under the Extended Baseline

For the next decade, the extended baseline matches CBO's 10-year baseline projections for the budget and the economy.[1] CBO has not yet updated its long-term budget projections to incorporate the new 10-year projections it issued in February or to reflect other new information and analysis since last year. Thus, for years after 2024, CBO projected the amount of gross domestic product (GDP) under the extended baseline (without macroeconomic effects) by using the long-term growth rate for real (inflation-adjusted) GDP underlying the extended baseline in *The 2013 Long-Term Budget Outlook.*[2] In addition, for fiscal policies beyond 2024, the extended baseline uses the interest rates and growth rates for revenues and spending (without macroeconomic effects) as a percentage of GDP that underlie the extended baseline in *The 2013 Long-Term Budget Outlook.* That report reflected the fiscal policies that were scheduled to be in effect under current law as of May 2013, when CBO had issued what were then its most recent 10-year baseline budget projections.[3] To project spending beyond CBO's 10-year baseline in *The 2013 Long-Term Budget Outlook*, the agency assumed for the extended baseline that spending would generally occur

1. CBO constructs its baseline projections in accordance with provisions of the Balanced Budget and Emergency Deficit Control Act of 1985 and the Congressional Budget and Impoundment Control Act of 1974. To project revenues and mandatory spending, CBO assumes that current laws, with only a few exceptions, will remain unchanged throughout the 10-year projection period. To project discretionary spending, CBO assumes that annual appropriations through 2021 will adhere to the caps and automatic spending reductions originally established in the Budget Control Act of 2011 (as modified by subsequent legislation) and that appropriations for 2022 through 2024 will grow from the 2021 amount at the rate of inflation.
2. In *The 2013 Long-Term Budget Outlook*, the underlying average growth rate of real GDP (which did not account for changes in fiscal policies that would have macroeconomic effects) was somewhat lower for 2024 to 2033 than for later years. That difference stemmed in part from the transition that occurred in the first several years after 2023 from the economic conditions at the end of CBO's 10-year baseline projections to the economic conditions that CBO expects will apply in the longer term. In CBO's most recent 10-year economic projections, by contrast, some of the transition to the economic conditions that CBO expects will apply in the longer term occurs during the 10-year projection period. As a result, for the current analysis, the average growth rate for output in the first several years after 2024 in the extended baseline is closer to the long-run growth rate in *The 2013 Long-Term Budget Outlook*.
3. For details about those budget projections, see Congressional Budget Office, *Updated Budget Projections: Fiscal Years 2013 to 2023* (May 2013), www.cbo.gov/publication/44172.

as scheduled under current law.[4] CBO also assumed that after the first 10 years, individual income, payroll, excise, and estate and gift taxes would continue to follow current law and that corporate income taxes and other sources of revenues would remain constant as a percentage of GDP. Under those assumptions, marginal tax rates on labor and capital income would rise over time, as the general growth of income pushed more of taxpayers' income into higher tax brackets.[5]

Projecting Outcomes Under Alternative Budget Scenarios

CBO estimated the long-term effects on economic output, relative to the agency's extended baseline projections, for all four alternative budget scenarios in 2025 and thereafter. (Because of time constraints, CBO estimated the short-term economic effects only of the paths for revenues and noninterest spending specified by Chairman Ryan; the effects of the other budget scenarios were not estimated for years before 2025.)[6] CBO estimated the budgetary implications of the macroeconomic effects of those scenarios using a simplified analysis that takes into account changes in taxable income and interest rates, among other things, but does not incorporate a detailed program-by-program analysis, as occurs for CBO's regular budget projections.

To analyze the long-term economic impact of changes in fiscal policies, CBO employed its enhanced version of a widely used model originally developed by Robert Solow. In CBO's model, economic output is determined by the number of hours of labor that workers supply, the size and composition of the capital stock (such as factories and computers), and total factor productivity (the combined productivity of labor and capital). In that model, people base their decisions about working and saving primarily on current economic conditions—especially wage levels, interest rates, and government policies. People's responses to changes in such conditions are generally assumed to mirror their past responses to economic and policy developments. As a result, the responses reflect people's anticipation of future policies in a general way but not their expectations of specific future events. In addition, this analysis incorporates the assumption that the scenarios do not alter the contributions that government investment makes to future productivity and output; those contributions are assumed to reflect their past long-term trends.

To incorporate economic effects (or feedback) into the analysis of budgetary outcomes, CBO generally used procedures it has used for similar analyses in the past.[7] The agency projected that increases in GDP would raise revenues, primarily because income and payroll taxes would rise with higher income. CBO also projected that increases in GDP would boost spending for the government's retirement programs (because of formulas in those programs that link benefits to earnings) and spending for health care programs (in keeping with CBO's standard approach for projecting the long-term growth of health care costs). Decreases in GDP were projected to have the opposite effects. Broadly speaking, CBO projects that revenues and spending on retirement and health care programs move proportionally with GDP, thus remaining at the same percentages of GDP if economic output changes. For other types of noninterest spending, by contrast, CBO assumes that spending remains at the amounts projected in the baseline even if output changes.

4. There were two main exceptions. First, for 2030 and beyond, CBO assumed that several Medicare policies that are part of current law but might be difficult to sustain over a long period would no longer be in effect. Second, for 2025 and beyond, CBO assumed that discretionary spending would remain at the percentage of GDP projected for 2024, because such spending will be determined by lawmakers' future actions, which CBO had no basis for predicting. For additional details, see Congressional Budget Office, *The 2013 Long-Term Budget Outlook* (September 2013), Chapters 2 and 4, www.cbo.gov/publication/44521.

5. A marginal tax rate is the percentage of an additional dollar of income that is paid in taxes. Labor income is income derived from employment (such as wages), whereas capital income is income derived from wealth (such as stock dividends, realized capital gains, and owners' profits from businesses).

6. *The 2013 Long-Term Budget Outlook* reported the short-term economic effects of its versions of the extended alternative fiscal scenario and CBO's two illustrative deficit reduction paths; see Congressional Budget Office, *The 2013 Long-Term Budget Outlook* (September 2013), Chapter 6, www.cbo.gov/publication/44521. Although that report discussed short-term effects on GDP, effects on gross national product would be only slightly different over the short run. Updating that analysis with the current versions of the various budget scenarios would produce similar estimates of the scenarios' effects in the first two years.

7. For example, see Congressional Budget Office, *Macroeconomic Effects of Alternative Budgetary Paths* (February 2013), Appendix A, www.cbo.gov/publication/43769, and *The 2013 Long-Term Budget Outlook* (September 2013), Chapter 6, www.cbo.gov/publication/44521.

Paths for Revenues and Noninterest Spending Specified by Chairman Ryan

Under the paths specified by Chairman Ryan, changes in fiscal policy cause the cumulative deficit over the 2015–2024 period (excluding interest savings and macroeconomic effects) to be about $5 trillion lower than projected in CBO's baseline. Revenues are specified to equal the same percentage of GDP as in CBO's extended baseline each year until they reach 19 percent of GDP—in 2032, CBO projects—and then remain at 19 percent. Federal noninterest spending is specified as a share of GDP each year (as projected without macroeconomic effects): That share is about 19 percent in 2015, generally declines for the following 10 years, and then hovers around 16½ percent in most years thereafter (see Figure 3 on page 8).[8]

CBO used two approaches to estimate the macroeconomic effects of the specified paths. Those approaches focus on different aspects of the economy and reflect distinct ways of thinking about it. One approach addresses short-term effects that stem largely from variations in aggregate demand.[9] The other is the same approach to analyzing long-term effects on economic output that CBO used for all the alternative scenarios. Each approach represents people's economic decisions in a simplified way while capturing some important aspects of actual behavior.

In CBO's judgment, the macroeconomic effects of Chairman Ryan's paths would be determined mainly by effects on the demand for goods and services in 2015, by effects on the nation's capital stock and labor supply in 2019 and beyond, and by a combination of those factors from 2016 through 2018.[10] To estimate the short-term economic impact of the specified revenue and spending paths, CBO used the same assumptions that it used in *The 2013 Long-Term Budget Outlook* to estimate the effects of unspecified changes in illustrative deficit reduction paths: that each $1 of deficit reduction would—in the short term, under current economic conditions—reduce output by a total of $1 over several quarters. That dollar-for-dollar response is within the ranges of estimated effects on GDP that CBO has used in some of its past policy analyses.

For this report, CBO did not analyze particular tax or spending policies that might produce Chairman Ryan's specified paths. Therefore, CBO's analysis of the paths does not address effects from any differences in incentives to work or save that might result directly from differences in policies relative to those under the extended baseline.[11] Instead, CBO's analysis of those paths addresses only the effects of the deficit reduction.

Extended Alternative Fiscal Scenario

In CBO's extended alternative fiscal scenario, various changes to current law (described below) cause deficits (excluding interest payments and macroeconomic effects) to be a total of about $2 trillion higher over the

8. The exact specifications for each year are shown in the supplemental material posted with this report on CBO's website.

9. CBO analyzed short-term economic effects by using models and historical evidence to estimate how such policies alter the economy directly and indirectly. Direct effects include changes in output caused by changes in the demand for goods and services by the federal government or by the groups directly affected by a policy, such as the recipients of a tax cut. Indirect effects enhance or offset the direct effects. For example, the direct economic effects of lower taxes or higher spending are magnified when stronger demand for goods and services prompts companies to boost investment. Policies that increased federal spending or cut taxes would generally increase the demand for goods and services, thereby raising output and employment relative to what they would be otherwise. In contrast, policies that decreased federal spending or raised taxes would generally reduce demand, thereby lowering output and employment relative to what they would be otherwise. Those effects would be especially strong under conditions like the ones now occurring in the United States—in which output is so far below its potential (maximum sustainable) level that the Federal Reserve is keeping short-term interest rates near zero and would probably not adjust those rates to offset the effects of changes in federal taxes or spending.

10. Specifically, CBO combined results from its modeling approaches as follows: Estimates for 2015 were based entirely on effects on demand; estimates for 2016, 2017, and 2018 placed weights of 0.75, 0.50, and 0.25, respectively, on the effects on demand, and the remaining weights on the effects on the capital stock and labor supply; and estimates for 2019 and beyond were based entirely on effects on the capital stock and labor supply.

11. To incorporate economic effects into an analysis of budgetary outcomes, CBO usually estimates the effects on spending of changes in GDP by incorporating differences between certain types of spending. However, CBO did not analyze specific policies underlying Chairman Ryan's specified path for spending. Therefore, CBO simply assumed that changes in GDP from economic feedback would alter spending on retirement and health care programs in any given year by the same amounts per dollar of change in GDP from economic feedback that are incorporated in the extended baseline. Because CBO's usual approach for estimating the effects on revenues of changes in GDP from economic feedback does not incorporate differences between types of revenues, CBO used its usual approach to analyze those effects.

2015–2024 period than projected in the baseline.[12] In later years, such deficits exceed those in the extended baseline by growing amounts, because noninterest spending is higher, and revenues lower, than in the extended baseline.

For this analysis, CBO constructed the extended alternative fiscal scenario in a manner consistent with the approach it used in *The 2013 Long-Term Budget Outlook*. The higher noninterest spending than in the baseline stems from several assumptions: that the automatic spending cuts required by the Budget Control Act of 2011 will not occur (although the original caps on discretionary appropriations in that law are assumed to remain in place); that lawmakers will act to keep Medicare's payment rates for physicians from declining; that after 2024, lawmakers will not allow various restraints on the growth of Medicare costs and health insurance subsidies to have their full effect; and that after 2024, federal noninterest spending for programs other than Social Security and major health care programs will rise to equal the average percentage of GDP seen for such spending (net of offsetting receipts) over the past two decades, rather than falling significantly below that average, as projected in the extended baseline.

For revenues, the alternative fiscal scenario incorporates the assumption that roughly 75 tax provisions that expired recently or are scheduled to expire in the next decade (including a provision allowing businesses to immediately deduct 50 percent of new investments in equipment) will be extended through 2024, causing revenues to equal 18.1 percent of GDP by that year. After 2024, revenues are assumed to remain at 18.1 percent of GDP—a little above their average of the past 40 years, which was 17.4 percent—rather than continuing to rise relative to GDP, as projected in the extended baseline. Marginal tax rates on labor and capital are also assumed to remain at their 2024 levels in later years.

Two Illustrative Deficit Reduction Paths

For the two other deficit reduction paths that CBO included in this analysis for illustrative purposes, the agency assumed that deficits would gradually decline from the amounts projected in the extended baseline. The cumulative deficit over the 2015–2024 period (excluding interest savings and macroeconomic effects) would be either $2 trillion or $4 trillion smaller than projected in the baseline. After 2024, the reductions in annual deficits relative to the extended baseline would continue at the same percentage of GDP (without macroeconomic effects) projected for 2024.

CBO analyzed those illustrative deficit reduction paths without specifying the tax and spending policies that would produce them. Therefore, as with Chairman Ryan's paths, CBO's analysis of those two illustrative paths does not address effects from any differences in incentives to work or save that might be generated directly by differences in policies relative to those under the extended baseline.[13]

This Congressional Budget Office (CBO) report was prepared at the request of the Chairman of the House Committee on the Budget. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

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12. Budget estimates of the policies underlying the alternative fiscal scenario over that period are included in Table 1-5 of Congressional Budget Office, *The Budget and Economic Outlook: 2014 to 2024* (February 2014), www.cbo.gov/publication/45010.

13. In addition, because CBO did not analyze specific policies underlying the deficit reduction paths, the agency made the simplifying assumption that changes in GDP from economic feedback would change revenues and spending on retirement and health care programs in any given year by the same amounts per dollar of change in GDP from economic feedback that are incorporated in the extended baseline.