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In this report, Auerbach and Gale discuss why the medium- and long-term fiscal outlooks have deteriorated over the last year.

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I. Introduction

After worsening sharply during the Great Recession, the long-term fiscal outlook generally improved through 2015, attributable to a combination of legislative acts and lower projected growth of healthcare spending.[1] The same factors and the slow but steady economic recovery helped reduce short-term deficits over that period as well.

Over the past year, however, the medium- and long-term fiscal outlooks have deteriorated.

This is due in part to legislative changes, in part to changes in economic and technical factors, and in small part to changes in assumptions. This deterioration has happened without much fanfare, and even with a fall in projected interest rates working in the other direction, the estimated changes are large.

Our estimates of various fiscal measures from last September and now are summarized in Table 1. Under current policy, we project the debt-to-GDP ratio to be 91 percent in 2025, up from a projection of 81 percent made last September and compared with the current-year value of 75.6 percent. The projected debt-to-GDP ratio in 2040 has increased to 152 percent of GDP, compared with 120 percent last fall. Our estimates of the fiscal gap — the spending or tax changes needed to bring about a fiscal balance — have also increased. The fiscal gaps through 2040 have risen by about 1 to 1.5 percent of GDP, depending on various assumptions. The permanent fiscal gap has risen by similar amounts.

The trends underlying the 10-year projections are familiar. Revenues hover at about 18 percent of GDP. Total spending is projected to rise by almost 3 percentage points of GDP, with entitlements accounting for about 1.7 percentage points of the increase and net interest for 1.9 percentage points of the increase, and with discretionary spending declining by about 0.6 percent of GDP.

[1]Alan J. Auerbach and William G. Gale, "The Economic Crisis and the Fiscal Crisis: 2009 and Beyond — An Update," Urban-Brookings Tax Policy Center (2009); and Auerbach and Gale, "The Fiscal Problem: Gone Today, Here Tomorrow," Brookings Institution (2015).

Table 1. Projection Comparisons Between 2015 and 2016 (percent of GDP)

Current Law	**September 2015**	**March 2016**
2025 Deficit	3.7%	4.6%
2025 Full Employment Deficit	3.5%	4.4%
2025 Debt	76.9%	84.3%
2040 Debt	109.2%	130.9%
Fiscal Gap		
To obtain current debt-GDP ratio in 2040, starting in 2020	1.6%	2.5%
To cut debt-GDP ratio to 36% in 2040, starting in 2020	3.4%	4.2%
To obtain the current debt-GDP ratio permanently	3.8%	4.9%
Current Policy		
2025 Deficit	4.2%	5.7%
2025 Full Employment Deficit	4.0%	5.5%
2025 Debt	81.3%	91.0%
2040 Debt	119.9%	151.5%
Fiscal Gap		
To obtain current debt-GDP ratio in 2040, starting in 2020	2.0%	3.4%
To cut the debt-GDP ratio to 36% by 2040, starting in 2020	3.8%	5.1%
To obtain the current debt-GDP ratio permanently	4.2%	5.8%

Source: CBO (2015, 2016); Auerbach and Gale (2015); and authors' calculations.

The projected rise in net interest payments relative to GDP reflects higher initial debt levels and an expected rise in interest rates as the economy grows. The deterioration in the budget outlook has occurred despite the fact that the Congressional Budget Office reduced projections of future interest rates. However, there is considerable uncertainty over the path of interest rates and much recent discussion of the notion that interest rates will remain low for an extended period.[2] To put this possibility in context, we examine a scenario in which interest rates stay constant at current levels for the next 25 years — through 2041 — rather than rising as the CBO projected. Lower interest rates, of course, reduce net interest payments, but even with flat interest rates, the fiscal situation is headed in the wrong direction. The current policy projections with flat interest rates show the debt-to-GDP ratio rising to 110 percent by 2041. Even with low interest rates, just to maintain the current debt-to-GDP ratio in 2041, the fiscal gap is 1.8 percent. To reduce the ratio to its 1957-2007 average of 36 percent by 2041 would require spending cuts or tax increases of 3.6 percent of GDP. Thus, while low interest rates may reduce net interest payments in the near term, they do not put federal debt on a sustainable path.

II. The 10-Year Budget Outlook

A. Assumptions

We construct 10-year projections by starting with the CBO's January 2016 current-law baseline[3] and then making a series of adjustments. These adjustments are admittedly judgmental. In our view, they provide a better picture of what constitutes current policy than do the CBO current-law projections, which in many instances reflect budget conventions or assumptions that the CBO is required to make by law.

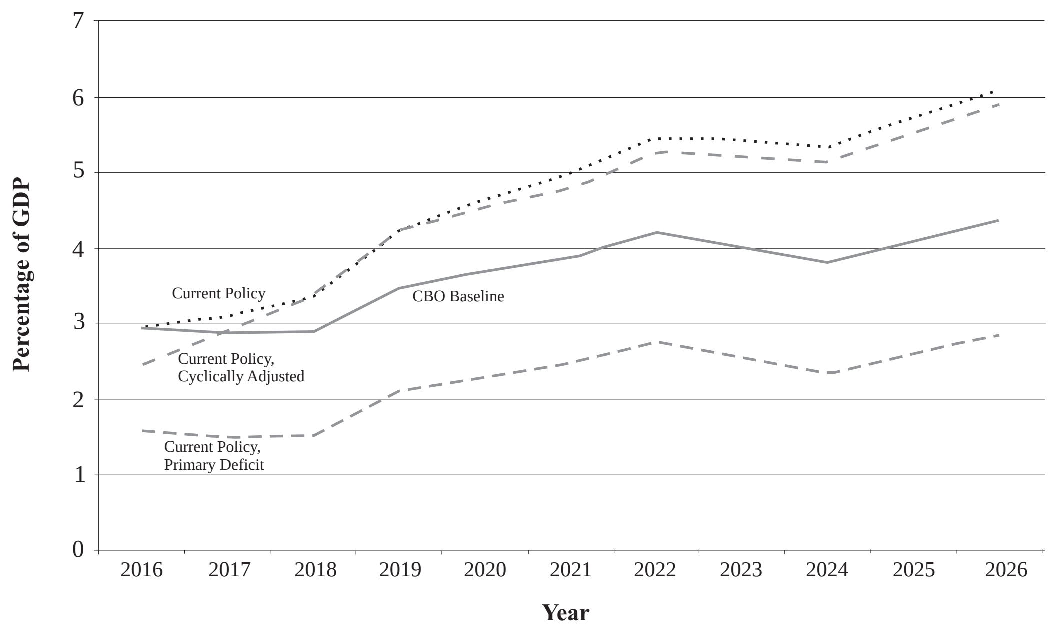
On the tax side, we assume that all temporary tax cut or tax delay provisions are made permanent. This includes 50 percent expensing of equipment and property for business investment. It also includes the permanent repeal of certain healthcare taxes in the Affordable Care Act, including the medical device excise tax and the tax on high-premium insurance (commonly known as the Cadillac tax). The implementation of these taxes was recently postponed by two years in the Protecting Americans From Tax Hikes Act of 2015.

On the spending side, the CBO sets discretionary spending through 2021 at the levels created by the recent discretionary spending caps and sequestration procedures (as imposed in the Budget Control Act of 2011 and modified by the Bipartisan Budget Act of 2013) and then allows them to rise with inflation. In contrast, we allow defense spending to

[2]*See* Douglas Elmendorf and Louise Sheiner, "Federal Budget Policy With an Aging Population and Persistently Low Interest Rates," Hutchins Center on Fiscal and Monetary Policy (2016).

[3]CBO, "The Budget and Economic Outlook: 2016 to 2026" (Jan. 2016).

Figure 1. Alternative Deficit Projections, 2016-2026



Source: CBO (2016) and authors' calculations.

rise with inflation, starting in 2017, so that real defense expenditures remain constant at 2016 levels. We allow non-defense discretionary spending to rise with the rate of inflation and the rate of population growth, so that real, per capita spending remains constant at 2016 levels, a rough approximation of a budget that maintains current services per person.[4]

B. Basic Results

Deficit-to-GDP and debt-to-GDP ratios are reported in figures 1 and 2 and in Appendix Table. The deficit rises from 2.9 percent of GDP in 2016 to 4.9 percent of GDP in 2026 under the current-law baseline and 6.1 percent of GDP under our view of current policy.[5]

The underlying economic projection behind these estimates assumes that the economy remains close to full employment throughout the second half of the projection period. Figure 1 shows that the cyclically adjusted deficit (that is, the deficit with automatic stabilizers removed) rises to 5.9 percent of GDP by 2026. As noted above, this would be the highest full-employment deficit, other than during the Great Recession, in the post-War period.

Figure 1 also shows that the primary deficit rises over time. As discussed below, there is some uncertainty over the path that interest rates, and hence net interest payments, will follow. The rising primary deficit shows that there is a growing fiscal shortfall under any interest rate scenario.

As shown in Figure 2, under current policy, the debt-to-GDP ratio remains near the 2016 value of 76 percent of GDP until 2018, after which it starts rising steadily to reach 93.6 percent by 2026 under current policy. (The ratio rises to 86.1 percent under current law.)

Given this basic summary, several aspects of the 10-year budget outlook stand out.

1. The current debt-to-GDP ratio is high relative to U.S. historical norms. At 75.6 percent of GDP, the debt-to-GDP ratio at the end of 2016 is the highest in U.S. history other than during a seven-year period around World War II. From 1957 to 2007, the ratio never exceeded 50 percent and averaged just 36 percent of GDP. In 2007, before the financial crisis and the Great Recession, the ratio was 35 percent.

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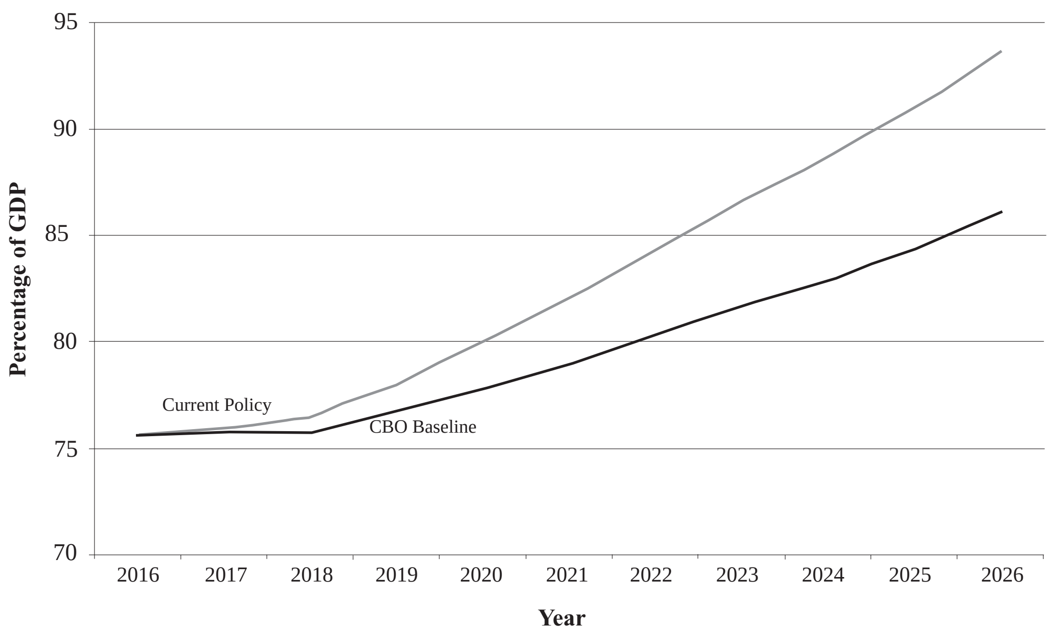
[4]Our most recent prior estimates did not adjust non-defense discretionary spending for population growth. We make the adjustment for population growth in the current estimates because of a sense that the Bipartisan Budget Act of 2015 indicates a stronger desire for discretionary spending, on both sides of the aisle, than the current caps suggest. Our most recent previous estimates include an adjustment for a phasedown of military overseas contingency operations (OCO) spending attributable to projected troop withdrawals abroad. We do not make this adjustment in the current projections, as security needs appear to have increased over the past year. The CBO does not include an OCO adjustment this year either.

[5]CBO 2016, at 14, explains that the deficit for fiscal year 2016 will be about $43 billion higher than would otherwise be expected because October 1, 2016 (the beginning of fiscal year 2017) falls on a weekend, thus pushing some payments to the end of September. Similar issues reduce the deficits in 2018 and 2024 and raise it in 2022.

Figure 2. Debt Projections, 2016-2026



Source: CBO (2016) and authors' calculations.

2. The debt-to-GDP ratio is projected to rise over the decade, whereas in previous high-debt episodes, it fell rapidly. The debt-to-GDP ratio rises by 17 percentage points from 2018 to 2026. This increase occurs despite the projection of a near full-employment economy during this period, hinting at an unsustainable fiscal situation and the need for longer-term analysis. It also highlights the difference between the current situation and previous high-debt episodes in U.S. history. In those episodes — the Civil War, World War I, and World War II — the debt-to-GDP ratio was cut in half roughly 10 to 15 years after the war ended.

3. Total spending is projected to rise over the decade, with the composition shifting significantly. Total spending under current policy rises from 21.2 percent of GDP in 2016 to 24 percent by 2026 (Figure 3). This compares with a historical average of 20 percent for 1962 to 2015. Net interest payments rise from 1.4 percent of GDP in 2016 to 3.2 percent in 2026. The CBO assumes that interest rates will rise significantly as the economy grows.[6] Below, we report budget outlook estimates with lower interest rates.

Non-interest outlays rise by about 1 percent of GDP, with increases in mandatory spending offset in part by declines in discretionary spending. Non-interest spending rises from 19.8 percent of GDP in 2016 to 20.7 percent by 2026. The average value from 1962 to 2015 was 18.1 percent.

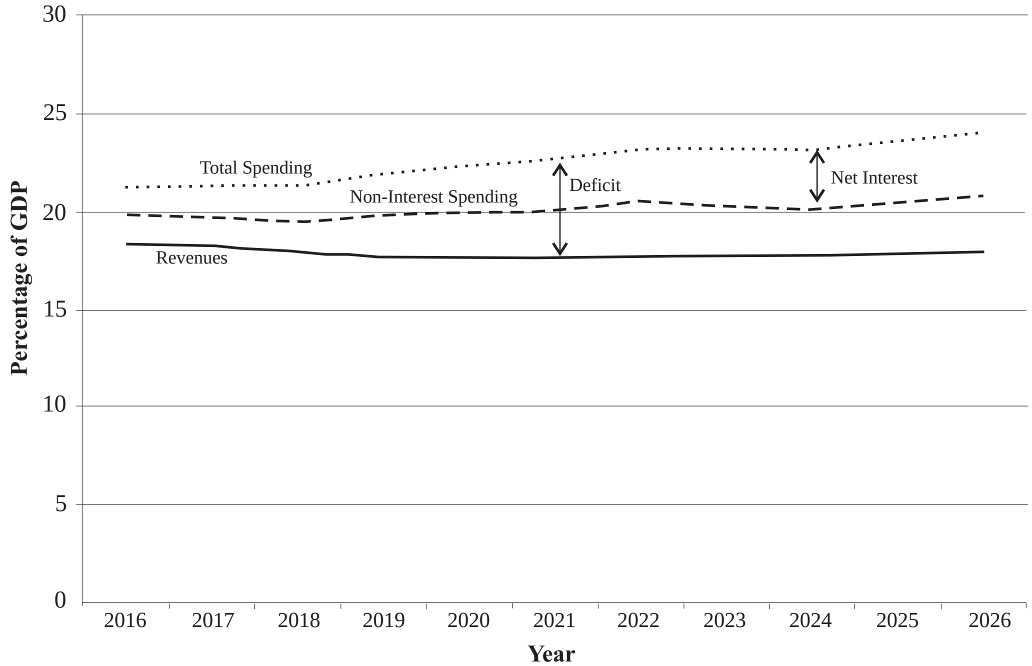
Figure 4 shows the projected composition of spending. Discretionary spending falls from 6.5 percent of GDP in 2016 to 5.8 percent in 2026. Within that category, defense spending declines from 3.2 percent in 2016 to 2.8 percent in 2026, while non-defense discretionary spending falls from 3.3 percent of GDP in 2016 to 3 percent of GDP in 2026. All of these shares are low relative to historical figures. Since 1962 the lowest discretionary spending share of GDP occurred in 1999, at 6 percent. The lowest share for defense spending was 2.9 percent of GDP in 1999-2001. The lowest non-defense discretionary spending share of GDP was 3.1 percent in 1998-1999.

Under current policy, mandatory spending is projected to rise from 13.3 percent of GDP in 2016 to 15 percent in 2026. Spending on Social Security rises by about 1 percent of GDP; net Medicare spending rises by 0.7 percent of GDP; and Medicaid benefits, the Children's Health Insurance Program (CHIP),

[6]The three-month treasury bill rate rises to 2.3 percent in 2018 compared with 0.5 percent in 2016, according to the CBO's January 2016 economic projections, *supra* note 3. The 10-year treasury note rate rises to 3.8 percent in 2018 compared with 2.6 percent in 2016. Various measures of the inflation rate such as the consumer price index are expected to rise around 2 percentage points over the same period; the remainder of the increases represents changes in real interest rates.

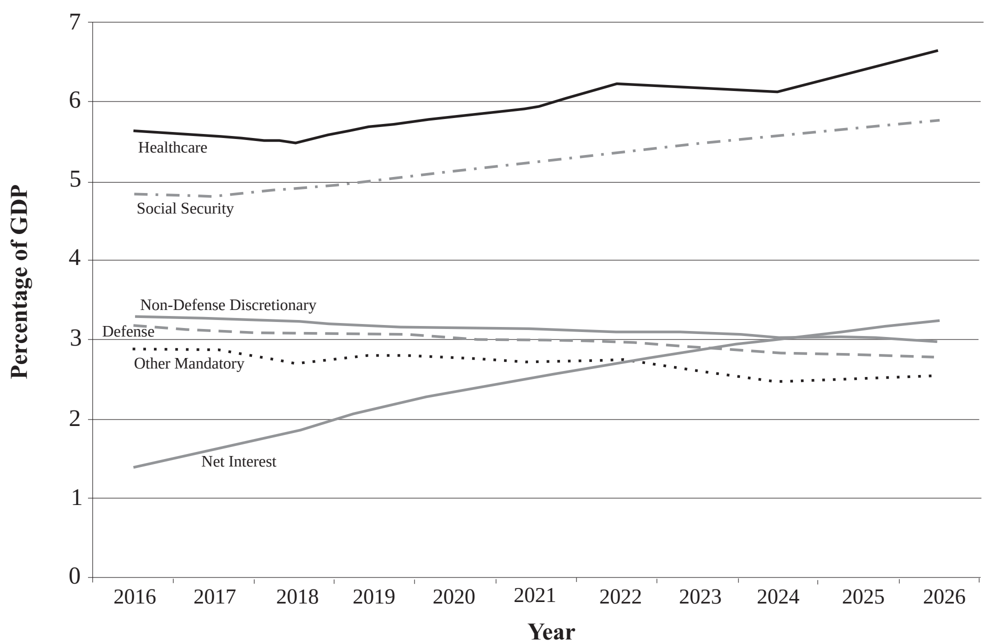
(Footnote continued in next column.)

Figure 3. Spending, Revenue, and Deficits, 2016-2026 (current policy)



Source: CBO (2016) and authors' calculations.

Figure 4. Composition of Spending, 2016-2026 (current policy)



Source: CBO (2016) and authors' calculations.

and exchange subsidies rise by 0.3 percent of GDP. Other entitlement spending will decline by 0.3 percent of GDP.

4. Revenues are projected to decline as a share of GDP but remain above historical average levels. Revenues are projected to fall from 18.3 percent of

GDP in 2016 to 17.9 percent of GDP in 2026. Revenues averaged 17.4 percent of GDP from 1962 to 2015. Notably, income tax revenues are projected to rise to 9.2 percent of GDP by 2026 under current policy. The only years in which the income tax has ever raised at least 9 percent of GDP in revenue were 1944 (at the height of World War II), 1981-1982 (before the Reagan tax cuts took full effect), and 1998-2001 (helped by a strong economy and the tech stock bubble and leading to the Bush tax cuts in 2001 and 2003). Thus, the forecast deficits already incorporate a reasonably strong revenue picture.

C. The Effects of Low Interest Rates

As noted above, the CBO's projections assume rising interest rates over time. Those projections, however, have been revised downward repeatedly over the last several years. More generally, low interest rates on government debt have proven more persistent than most observers would have guessed at the beginning of the Great Recession. To test the effect of interest rates assumptions on the budget outlook, we adopt what we believe is an extreme assumption — namely, that nominal interest rates stay constant at their implied 2016 value (1.94 percent) through 2026.[7] Under this scenario, still assuming current policy for other tax and spending programs, we find that in 2026, compared with using the CBO interest rate assumptions:

- net interest payments are 1.5 percent of GDP by 2026, instead of 3.2 percent;
- the deficit rises to 4.4 percent of GDP, instead of 6.1 percent;
- the full-employment deficit rises to 4.2 percent, compared with 5.9 percent; and
- debt rises to 81.1 percent of GDP compared with 93.6 percent.

Thus, lower interest rates improve the 10-year budget outlook, but the debt-to-GDP ratio is still projected to rise even if interest rates remain at the current level for the next 10 years.

D. Trust Funds

The federal government runs several trust funds, most notably for Social Security (Old Age and Survivors Insurance or OASI), Disability Insurance (DI), Medicare (two separate funds), civilian and military retirement, and transportation spending. All of the projections highlighted above integrate the trust funds into the overall budget. These projections also assume that scheduled benefit payments will be made even if trust funds run their balances to zero. However, many of the trust funds are not legally allowed to pay out benefits that draw their balances below zero.

This is not just an academic concern. This trust fund constraint was one of the proximate causes of Social Security reform in 1983; the trust fund literally had almost run out of money, an eventuality that would have required cuts in promised benefits so that they would not exceed revenues coming in. Despite recent legislation, the highway and mass transit trust fund is scheduled to have to make cuts starting in the middle of this year. Likewise, the DI trust fund is scheduled to have to make forced adjustments by 2022. This is actually an improvement over prior estimates, which placed the DI trust fund needing to make adjustments in late 2016. That resulted from a shift in payroll tax funds from OASI to DI in the 2015 budget deal. The Medicare Part A (hospital insurance) fund appears, according to the 2015 trustees report, likely to hit a similar constraint shortly after 2030.[8]

Each of those dates may force at least limited fiscal action. In each case, legislators will be forced to override the rules regarding trust funds, make interfund transfers, reduce benefits, or raise taxes. In contrast, OASI does not have cash flow issues for a couple of decades and Medicare parts B (Supplementary Medical Insurance) and D (Drug Insurance) do not have the constraint that spending can be financed only by trust fund payments.

Although low trust balances may require action, low balances and actions to address them relate to individual programs and the nature of their funding sources, and they provide an incomplete picture of the federal government's overall fiscal position over the longer term, an issue to which we now turn our attention.

III. The Long-Term Budget Outlook

A. Assumptions

For our long-term model, we assume that most categories of spending and revenues remain constant at their baseline 2026 share of GDP in subsequent years. Assuming constant shares of GDP, however, would be seriously misleading for the major entitlement programs and their associated sources of funding. For the Medicare and OASDI programs, in our base case we project all elements of spending and dedicated revenues (payroll taxes,

[7]This interest rate is calculated by dividing the estimated net interest payments in 2016 from the CBO 2016 by the debt at the end of 2015. *See* CBO 2016, *supra* note 3.

[8]Board of trustees, Federal Hospital Insurance and Federal Supplemental Medical Insurance Trust Funds, "The 2015 Annual Report of the Board of Trustees of the Federal Hospital Insurance and Federal Supplemental Medical Insurance Trust Funds" (2015), *available at* https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/TR2015.pdf.

income taxes on benefits, premiums, and contributions from states) using the intermediate projections in the 2015 trustees reports.[9] Social Security spending, Medicare spending, and payroll taxes follow the growth rates assumed in the trustees' projections of the ratios of taxes and spending to GDP for the years 2027-2090 for OASDI and Medicare, assuming that these ratios are constant at their terminal values thereafter. For Medicaid, CHIP, and exchange subsidies, we use growth rates implied by the CBO's most recent long-term projections[10] through 2090 and assume that spending as a share of GDP is constant thereafter.

In our base case, we use interest rate and growth assumptions implied in the CBO's long-term budget outlook for 2015.

The interest rate is obtained by dividing net interest payments in a given year by public debt in the previous year. Over the 2027-2091 period, the average nominal economic growth rate is 4.3 percent and the average nominal interest rate is 4.4 percent.[11] For years after 2090, we use the 2090 values of 4.3 percent for the growth rate and 4.4 percent for the interest rate.

By assuming that many categories of tax revenues and spending remain constant relative to GDP, we are not simply projecting based on current law. Instead, we are assuming that policymakers will make several future policy changes, including a continual series of tax cuts and discretionary spending increases. If current-law tax parameters were extended forward, income taxes would rise as a share of GDP (because of bracket creep and rising withdrawals from retirement plans). If discretionary spending were held constant in real terms, it would fall continually as a share of GDP. Our projection also assumes that a wealthier and more populous society will want to maintain discretionary spending as a share of GDP. We provide sensitivity estimates below.[12]

We provide three projections of Medicare spending. As noted, our base case projections come from the intermediate projections of the Medicare Trustees, which have for many years incorporated the assumption that Medicare growth will eventually slow in the future. Starting in the 2010 report, however, the trustees' official medical projections have assumed a much stronger slowdown, as a consequence of provisions in the ACA. These assumptions, although they may be consistent with the impact of the bill's provisions should they remain in force over the long term, are not adopted by other forecasters, who have a more pessimistic outlook. For example, since 2010 the Centers for Medicare and Medicaid Services (CMS) Office of the Actuary has released a separate set of projections[13] showing smaller (although still positive) reductions in spending, which is the source of our second projection. The third projection is the alternative Medicare scenario in CBO 2015, which projects a still more pessimistic path for Medicare spending. The three scenarios generate fairly similar trends for the next 25 years — by 2040, the estimates differ by a maximum of 0.6 percent of GDP. Over longer periods, however, the projections diverge significantly; by 2090, the estimates range from 5 percent of GDP under the Medicare trustees' assumptions to 10.2 percent under CBO's.

We assume that all remaining revenue and expenditure components except net interest remain constant as a share of GDP after 2090.

B. Debt Projections

Figure 5 shows the debt trajectory under current policy, using the Medicare trustees' projections for healthcare (that is, the lowest of the three health options). The debt-to-GDP ratio rises from 93.6 percent in 2026, hits 100 percent in 2028, exceeds the previous all-time high of 106 percent in 2030, and rises to 156 percent by 2041 — 25 years from now.

The figure also shows the effect of low interest rates. Specifically, in this scenario we hold interest rates constant at current levels all the way through

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[9] Details of these computations are available from the authors upon request. *See* 2015 Medicare trustees report, *supra* note 8; board of trustees, Federal OASI and DI Trust Funds, "The 2015 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds" (2015), *available at* http://www.ssa.gov/oact/tr/2015/tr2015.pdf.

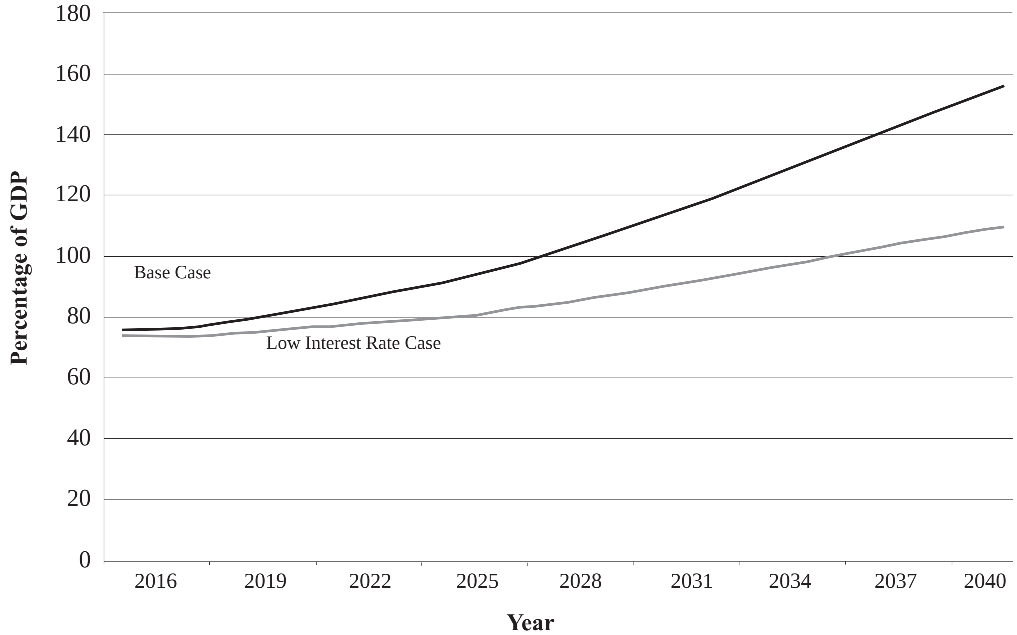
[10] CBO, "The 2015 Long-Term Budget Outlook" (June 2015).

[11] The implied interest and growth rates vary somewhat on an annual basis due to rounding. We also considered an alternative (not shown in the tables below) with higher long-run interest rates and a larger gap between the two, by assuming that economic growth occurred at the rate projected by the Social Security trustees (which averages 4.44 percent after 2026, just slightly above that in our baseline) and using the trustees' projected interest rates (which averages 5.57 percent) to calculate net interest payments. This yields slightly higher fiscal gaps than those presented below in Table 1 through 2041 and 2091 and lower or higher gaps over the indefinite period depending on the starting date of consolidation.

[12] David Kamin, "Are We There Yet?: On a Path to Closing America's Long-Run Deficit," *Tax Notes*, Oct. 1, 2012, p. 53; and Richard Kogan, Kathy Ruffing, and Paul N. Van de Water, "Long-Term Budget Outlook Remains Challenging, but Recent Legislation Has Made It More Manageable," Center on Budget and Policy Priorities (2013), provide additional perspective on these assumptions.

[13] CMS Office of the Actuary, "Projected Medicare Expenditures Under an Illustrative Alternative Scenario With Alternative Payment Updates to Medicare Providers," Centers for Medicare and Medicaid Services (2015).

Figure 5. Debt-GDP Trajectories, 2016-2041
(current policy, Medicare trustees health projections)



Source: CBO (2016) and authors' calculations.

2041. Under current policy with low interest rates, the debt-to-GDP ratio rises to 110 percent by 2041.

After 2041 we assume that interest rates revert to the estimates in the long-term outlook described above. By 2066 the debt-to-GDP ratio rises to 278 percent of GDP under the current policy scenario and to 232 percent under current policy with low interest rates through 2041. In both scenarios, the debt-to-GDP ratio continues to rise after 2066.

C. The Fiscal Gap

The fiscal gap is an accounting measure that is intended to reflect the long-term budgetary status of the government.[14] The fiscal gap answers the question: If you want to start a policy change in a given year and reach a given debt-to-GDP target in a given future year, what is the size of the annual, constant-share-of-GDP increase in taxes or reductions in non-interest expenditures (or combination of the two) that would be required? For example, one might ask what immediate and constant policy change would be needed to obtain the same debt-to-GDP in 2090 as exists today.[15] Or one might ask, if we wanted the debt-to-GDP ratio to return to its 1957-2007 average of 36 percent by 2041, what constant-share-of-GDP change would be required starting in 2021?

The first row of Table 2 shows fiscal gap estimates using the Medicare trustees projections for healthcare. We show fiscal gaps for three different horizons, assuming the policy changes begin in 2016, and aiming for the same debt-to-GDP ratio in the terminal year (73.6 percent of GDP) as existed at the end of 2015. The estimated gap through 2041 is 2.98 percent of GDP. This implies that an immediate and permanent increase in taxes or cut in spending of about $555 billion per year in current terms would be needed to achieve the current debt-to-GDP ratio in 2041.

The fiscal gap is larger if the time horizon is extended because the budget is projected to be

[14]Auerbach, Gale, Peter R. Orszag, and Samara Potter, "Budget Blues: The Fiscal Outlook and Options for Reform," in Henry J. Aaron, James Lindsay, and Pietro Nivola (eds.), *Agenda for the Nation* 109-143 (2003) (discussing the relationship between the fiscal gap, generational accounting, accrual accounting and other ways of accounting for government). *See* Auerbach, "The U.S. Fiscal Problem: Where We Are, How We Got Here, and Where We're Going," in Stanley Fischer and Julio Rotemberg (eds.), 9 *National Bureau of Economic Research Macroeconomics Annual 1994*, 141-175 (1994).

[15]Over an infinite planning horizon, this requirement is equivalent to assuming that the debt-to-GDP ratio does not explode. Auerbach (1994) (*supra* note 14); Auerbach, "Quantifying the Current U.S. Fiscal Imbalance," 50(3) *Nat'l Tax J.* 387-398 (1997). For the current value of the national debt, we use publicly held debt. An alternative might be to subtract government financial assets from this debt measure, but the impact on our long-term calculations would be small (reducing the fiscal gaps by less than 0.1 percent of GDP).

Table 2. Fiscal Gaps
(percent of GDP)

	Through 2041	Through 2091	Permanent
Health spending assumptions			
Medicare trustees	2.98%	4.45%	5.76%
CMS actuary	3.10%	5.65%	8.80%
CBO alternative scenario	3.16%	6.43%	10.67%
Alternative policy options (incremental effects)[a]			
Discretionary and other mandatory outlays grow at real per capita rates (after 2026)	-0.37%	-2.34%	-4.80%
Revenues grow with bracket creep and retirement withdrawals (after 2026)	-0.26%	-2.41%	-6.31%

Source: Authors' calculations.
[a]The alternative policy options are additive to the above fiscal gaps as they do not interact with the different health scenarios or each other.

running substantial deficits in more distant future years. If the horizon is extended through 2091, the fiscal gap rises to 4.45 percent of GDP. If it is extended indefinitely, the gap rises to 5.76 percent of GDP.

The second and third rows of the table show that the choice of healthcare scenario has a significant and varying impact on the estimated fiscal gaps. Through 2041, the differences in the fiscal gaps implied by the different healthcare scenarios are small. Over longer periods, however, the differences are much larger. Using the CMS actuaries' projections instead of the Medicare trustees' projections raises the fiscal gap by about 1.2 percent of GDP through 2091 and 3 percent of GDP on a permanent basis. Using the CBO Medicare projections raises the gap by an additional 0.8 percent of GDP through 2091 and an additional 1.9 percent of GDP over the infinite horizon.

The rest of Table 2 displays various sensitivity analyses concerning policy assumptions. Assuming that outlays for discretionary and other mandatory spending stays constant in real, per capita terms after 2026 (instead of a constant share of GDP) reduces the fiscal gap by about 0.4 percent of GDP through 2041, 2.3 percent of GDP through 2091, and about 4.8 percent of GDP on a permanent basis.

Assuming that tax revenues follow current law after 2026 (instead of remaining a constant share of GDP) reduces the fiscal gap by 0.3 percent of GDP through 2041, 2.4 percent of GDP through 2091, and 6.3 percent of GDP on a permanent basis.

Table 3 shows fiscal gaps under different combinations of debt targets, dates for reaching the target, and dates for implementing the policy changes. We employ three debt targets — 73.6 percent, the ratio of debt-to-GDP at the end of 2015; 60 percent, a ratio proposed by several commissions, including Bowles-Simpson[16] and Domenici-Rivlin;[17] and 36 percent (representing simultaneously (a) the average from 1957-2007, before the Great Recession, (b) roughly the value in 2007 as the financial crisis and Great Recession hit, and (c) a target that cuts the current debt-to-GDP ratio roughly in half). We look at both 25-year and 75-year target dates for reaching the new debt-to-GDP level.

We employ two start dates for policy — current (that is, 2016) and 2021, the latter reflecting the reality of political deadlock, the undesirability of austerity policies in a weak economy, and the possibility of implementation delays. The first line of Table 3 replicates the fiscal gap calculations through 2041 and 2091 shown in the top row of Table 2 for obtaining a 73.6 percent debt-to-GDP ratio in the target year, with the policy starting in 2016.

The main message of Table 3 is that it will be quite difficult to return to historical levels of the debt-to-GDP ratio anytime soon. To get the debt-to-GDP ratio in 2041 down to 36 percent would require immediate and permanent spending cuts or tax increases of 4.4 percent of GDP. This would require a 24 percent increase in current tax revenues or a 22 percent cut in non-interest spending.

The problem is even harder if the policy does not take effect until 2021. Just maintaining the 2041 debt-to-GDP ratio at its current level would require annual cuts of 3.5 percent of GDP starting in 2021. Reducing the debt-to-GDP ratio to 60 percent in 2041 would require cutting 4 percent of GDP beginning in 2021. To get the debt-to-GDP ratio down to

[16]National Commission on Fiscal Responsibility and Reform, "The Moment of Truth: Report of the National Commission on Fiscal Responsibility and Reform" (Dec. 2010).

[17]Debt Reduction Task Force, "Restoring America's Future: Reviving the Economy, Cutting Spending and Debt, and Creating a Simple, Pro-Growth Tax System," former Sen. Pete Domenici and Dr. Alice Rivlin, Bipartisan Policy Center (2010).

Table 3. Fiscal Gap Calculations for Various Start Dates, Target Dates, and Target Ratios (percent of GDP)

	Current Policy		Low Interest Rate Scenario	
	Through 2041	Through 2091	Through 2041	Through 2091
Start date: 2016				
Debt target (percent of GDP)				
Current	2.98%	4.45%	1.76%	4.23%
60	3.42%	4.60%	2.33%	4.39%
36	4.37%	4.93%	3.58%	4.75%
Start date: 2021				
Debt target (percent of GDP)				
Current	3.50%	4.71%	2.03%	4.41%
60	4.04%	4.87%	2.70%	4.58%
36	5.22%	5.22%	4.18%	4.95%

Source: Authors' calculations.

36 percent by 2041 would require deficit reduction of 5.2 percent of GDP per year starting in 2021. To achieve that ratio in 2091 would (by coincidence) also require cuts of 5.2 percent of GDP starting in 2021.

Holding interest rates at their implied 2016 rate through 2041 does not paint a much better picture, either. Even under this scenario, it would require immediate spending cuts or tax increases of 1.8 percent of GDP just to maintain the current debt ratio through 2041. If the policy were delayed until 2021, the required policy adjustment would be 2 percent in order to maintain the current debt-to-GDP ratio in 2041 and 4.2 percent of GDP in order to reduce the debt-to-GDP ratio to 36 percent by then. The longer policymakers wait to make the adjustments, the larger the eventual adjustments will have to be.

D. Uncertainty and Its Implications

Budget projections are not written in stone. Clearly, they should be taken with a grain of salt — perhaps a bushel. They are, at best, the educated guesses of informed people, and the role of uncertainty in budget projections should not be underestimated, particularly as the time horizon lengthens. In the past, budget projections by the CBO and others (including us) have proven to be too optimistic in some instances and too pessimistic in others.

Major sources of uncertainty — noted in the analysis above — include the behavior of interest rates, trends in healthcare spending, shifts in demographics, and, of course, the choices of policymakers. In each case, the uncertainty can create significant changes in outcomes because errors tend to compound over time. Nevertheless, although there is substantial uncertainty regarding the outlook, reasonable estimates imply an unsustainable fiscal path that will generate significant problems if not addressed.

How should that uncertainty affect when and how we make policy changes? One argument is that we should wait; after all, the fiscal problem could go away. But, for several reasons, ignoring the problem is unlikely to be an optimal strategy.

First, regardless of whether the long-term problem turns out to be somewhat better or worse than predicted, there is *already* a debt problem. The debt-to-GDP ratio has already doubled, to more than 70 percent. The future is already here. There are benefits to getting the deficit under control — including economic growth and fiscal flexibility — regardless of whether the long-term problem turns out to be as bad as mainstream projections suggest. If carrying high debt were economically and politically costless, many more countries would have done so before the Great Recession. In fact, very few had net debt-to-GDP ratios that exceed 70 percent.

Second, purely as a matter of arithmetic, the longer we wait, the larger and more disruptive the eventual policy solutions will need to be, barring a marked improvement in the fiscal picture. Policymakers may not have wanted to reduce spending or raise taxes during the relatively weak economic recovery starting in 2009, but that is different from not planning ahead. Note that addressing the issue now does not necessarily mean cutting back on *current* expenditures or raising *current* taxes substantially or even at all; rather, it may involve addressing future spending and revenue flows now, in a credible manner.

Third, uncertainty can cut both ways, and the greater the uncertainty, the more we should want to address at least part of the problem now. The problem could turn out to be worse — rather than better — than expected, in which case delay in dealing with the problem would make solutions even more difficult politically and even more wrenching economically. If people are risk-averse, the existence of uncertainty should normally elicit precautionary behavior — essentially ''buying insurance'' against a really bad long-term outcome by reducing the potential severity of the problem — through enactment of at least partial solutions to the budget problem right away.[18]

Lastly, although the point may seem obvious, it is useful to emphasize that even if the main driver of long-term fiscal imbalances is the growth of entitlement benefits, this does not mean that the only solutions are some combination of benefit cuts now and benefit cuts in the future. For example, when budget surpluses began to emerge in the late 1990s, President Clinton devised a plan to use the funds to ''Save Social Security First.'' Without judging the merits of that particular plan, our point is that Clinton recognized that Social Security faced long-term shortfalls. And, rather than ignoring those shortfalls, Clinton aimed to address the problem in a way that went beyond simply cutting benefits. A more general point is that addressing entitlement funding imbalances can be justified precisely *because* one wants to preserve and enhance the programs, not just because one might want to reduce the size of the programs. Likewise, addressing these imbalances may involve reforming the structure of spending, raising or restructuring revenues, or creating new programs, as well as simply cutting existing benefits.

[18]This argument is discussed at greater length in Auerbach, ''Fiscal Uncertainty and How to Deal With It,'' Hutchins Center, Brookings Institution (2014).

IV. Conclusion

Although current deficits are reasonably low, the medium- and long-term fiscal outlooks have deteriorated in the past year, due largely to legislative actions (and their implications for future policy) and changes in economic projections. Even under a low interest rate scenario, the long-term budget outlook is unsustainable. Moreover, the nation already carries a debt load that is twice as large as its historical average as a share of GDP, and that makes evolution of the debt-to-GDP ratio much more sensitive to interest rates.

The necessary adjustments will be large relative to those adopted under recent legislation. Moreover, the most optimistic long-run projections already incorporate the effects of success at ''bending the curve'' of healthcare cost growth, so further measures will clearly be needed.[19] These changes, however, relate to the medium- and long-term deficits, not the short-term deficit.

(Appendix table appears on the following page.)

[19]These projections must be viewed as even more optimistic than before the recent legislation to delay implementation of the Cadillac tax, as they have not been updated to reflect the faster growth in healthcare spending that may be a consequence of delay (or repeal) of this measure to restrain cost growth.

Appendix Table. Federal Budget Deficit
CBO Baseline and Extended Policy, 2016-2026[a]

	Deficit (dollars in billions)											
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2017-2026**
CBO baseline	**$544**	**$561**	**$572**	**$738**	**$810**	**$893**	**$1,044**	**$1,077**	**$1,089**	**$1,226**	**$1,366**	**$9,378**
as percent of nominal GDP	**2.9%**	**2.9%**	**2.8%**	**3.5%**	**3.7%**	**4.0%**	**4.4%**	**4.4%**	**4.3%**	**4.6%**	**4.9%**	**4.0%**
Adjustments for tax policy												
Extend partial expensing at the 50 percent rate	$0	$0	$9	$21	$52	$56	$38	$27	$20	$15	$11	$248
Repeal certain health taxes	$0	$0	$13	$15	$19	$28	$31	$35	$40	$45	$51	$277
Extend other expiring tax provisions	$0	$4	$12	$13	$15	$18	$19	$21	$23	$25	$28	$178
Subtotal	$0	$4	$33	$49	$86	$102	$89	$83	$83	$85	$89	$702
Net interest[b]	$0	$0	$1	$2	$5	$8	$12	$16	$19	$23	$27	$113
Total adjustments for tax policy	$0	$4	$34	$51	$90	$110	$100	$99	$102	$108	$116	$815
as percent of nominal GDP	0.0%	0.0%	0.2%	0.2%	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Adjustments for spending policy												
Increase non-defense discretionary spending with inflation and population	$0	$18	$40	$53	$63	$73	$81	$90	$100	$109	$118	$743
Increase defense spending with inflation	$0	$12	$27	$34	$38	$41	$43	$44	$45	$47	$49	$379
Mandatory adjustment from tax extenders	$0	$0	$0	$0	-$1	-$2	-$2	-$3	-$4	-$4	-$4	-$21
Subtotal	$0	$29	$67	$87	$99	$112	$122	$131	$141	$152	$162	$1,101
Net interest[b]	$0	$0	$2	$5	$8	$12	$17	$22	$27	$33	$40	$166
Total adjustments for spending policy	$0	$29	$68	$91	$107	$124	$139	$153	$168	$185	$202	$1,268
as percent of nominal GDP	0.0%	0.2%	0.3%	0.4%	0.5%	0.5%	0.6%	0.6%	0.7%	0.7%	0.7%	0.5%
Current Policy	**$544**	**$595**	**$674**	**$881**	**$1,007**	**$1,127**	**$1,283**	**$1,330**	**$1,360**	**$1,519**	**$1,684**	**$11,461**
as a percent of nominal GDP	**2.9%**	**3.1%**	**3.4%**	**4.2%**	**4.6%**	**5.0%**	**5.5%**	**5.4%**	**5.3%**	**5.7%**	**6.1%**	**4.9%**
GDP	$18,494	$19,297	$20,127	$20,906	$21,710	$22,593	$23,528	$24,497	$25,506	$26,559	$27,660	$232,382

[a]Columns may not sum to total due to rounding. The source of these estimates is CBO, ''The Budget and Economic Outlook: 2016 to 2016'' (2016).

[b]Net interest from tax adjustments is proportionally split into spending and tax policy by the primary deficit effects of tax extender revenue changes and tax credit outlays.