

# Revisiting the Federal Budget Outlook

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In this report, the authors provide estimates of the federal budget outlook based on new Congressional Budget Office and Social Security and Medicare trustees analyses.

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## I. Introduction

This report provides new estimates and perspectives on the federal budget outlook.<sup>1</sup> The Congressional Budget Office projects a debt-to-GDP ratio of 92 percent by fiscal 2029 under current law, up from 78 percent today.<sup>2</sup>

We start with that projection and build on it in three ways. First, under a current policy scenario similar to the CBO's alternative fiscal scenario — in which policymakers routinely extend temporary provisions, as they have in the past — we project a debt-to-GDP ratio near 106 percent in 2029, which would be just below the highest ratio in U.S. history.

Second, we highlight that the currently strong economy is masking the underlying fiscal problem. If the CBO and current policy projections hold, the next 10 years will include the first sustained period in U.S. history with sizable full-employment deficits, which will exceed 4 percent of GDP under current law and rise to 7 percent of GDP under current policy.

Third, after the coming decade, fiscal pressures will mount, with the debt-to-GDP ratio

<sup>1</sup>This report builds on Alan J. Auerbach, William G. Gale, and Aaron Krupkin, "If Not Now, When? New Estimates of the Federal Budget Outlook," The Brookings Institution (2019).

<sup>2</sup>CBO, "Updated Budget Projections: 2019 to 2029" (May 2019). Throughout this report, years refer to fiscal years, which go from October 1 through September 30 for the federal government. Neither the CBO projection nor our analysis includes the Bipartisan Budget Act of 2019 that suspends the debt ceiling for two years and raises the caps for discretionary spending for 2020 and 2021. Incorporating those provisions into our analysis would significantly raise the projections of deficits and debt under the "current law" scenario described below. But it would have much smaller effects under the "current policy" scenario that we describe and emphasize as the more plausible alternative, and which already incorporates policies like those in the legislation. For further details, see Gale and Krupkin, "The Big Budget Deal Is No Big Deal," The Brookings Institution (July 24, 2019).

rising to 194 percent under current policy by 2049. The fiscal gap is substantial; to ensure the debt-to-GDP ratio 30 years from now does not exceed the current level would require a combination of immediate and permanent non-interest spending cuts or tax increases totaling 3.9 percent of GDP. In 2019 this would be equivalent to a 21 percent cut in non-interest spending, a 47 percent increase in income tax revenue, or a 24 percent increase in all tax revenue. Over the longer term, the required adjustments are even larger.

Growth in annual net interest payments — attributable in part to projections of rising interest rates — accounts for a significant part of the rising debt projection. However, even if interest rates remain unchanged over the next 30 years, the debt-to-GDP ratio in 2049 would rise to 156 percent and the fiscal gap would be 3.2 percent of GDP. That is, there is a significant federal fiscal imbalance even if interest rates stay low. This is reflected in persistent and rising primary deficits, in the range of 3 to 5 percent of GDP over the next 30 years under current policy.

Sustained federal deficits and rising federal debt that are used to finance consumption or transfer payments in normal times (rather than to finance investments) have numerous problematic effects. First, they will reduce future national income. This can occur because deficits raise interest rates and crowd out future investment, reducing future production and income. But an increase in interest rates is not necessary to generate the decline in future national income. If a rise in deficits is financed by capital inflows (that are sufficiently large so that interest rates do not rise), future investment and production won't fall, but future national income — that is, Americans' claims on that production — will decline as more of the proceeds of production will have to be directed to repay foreign creditors.

Sustained deficits and rising long-term debt also make it more difficult to garner political support to conduct routine policy, address major new priorities, or deal with the next recession or emergency. Third, in those ways and by requiring future tax increases or spending cuts, the fiscal trajectory imposes burdens on future generations. Fourth, the current fiscal trajectory raises the possibility of a financial crisis, even if such an outcome remains a low-probability event.

One argument for more debt and less austerity during the Great Recession and the aftermath was summarized by a quote from John Maynard Keynes: "The boom, not the slump, is the right time for austerity at the Treasury."<sup>3</sup> Well, this is the boom. If policymakers do not address the fiscal imbalance now, the problem will become more difficult because of the growing size of the deficit and debt and the increased economic costs and political difficulty of enacting spending cuts or tax increases in less favorable times. Addressing the fiscal imbalance now does not necessarily require substantial, immediate cuts in spending or increases in taxes; it could instead be structured to provide gradual, phased-in changes.

## II. The 10-Year Budget Outlook

### A. Current Law

The CBO is constrained in how it projects the budget. It is required to assume that expiring tax provisions are not extended, that mandatory programs are reauthorized as scheduled, and that discretionary spending follows the Budget Control Act of 2011 caps (which were modified in subsequent legislation) through 2021 and remains constant in real terms thereafter. Figures 1 and 2 and Appendix Table 1 display deficits and debt under current law. The CBO projects that the current-law deficit will fluctuate between 4 and 4.7 percent of GDP over the next 10 years, equaling 4.2 percent of GDP in 2029. Adjusted for timing changes for some payments, the deficit rises to 4.5 percent in 2029.<sup>4</sup> End-of-year debt rises from 78 percent of GDP to 92 percent of GDP over the same period.

<sup>3</sup>Paul Krugman, "Keynes Was Right," *The New York Times*, Dec. 29, 2011.

<sup>4</sup>CBO, *supra* note 2, Table 2 shows that the deficit for fiscal 2029 will be about \$93 billion lower than would otherwise be expected because October 1, 2028 (the beginning of fiscal 2029) will fall on a weekend, thus pushing some October payments (mostly for Medicare) up to the end of September in the previous fiscal year. Thus, the deficit in 2028 will be about \$94 billion larger than otherwise expected. Of this \$93 billion in payments, \$64 billion applies to Medicare.

Figure 1. Alternative Deficit Projections, 2019-2029

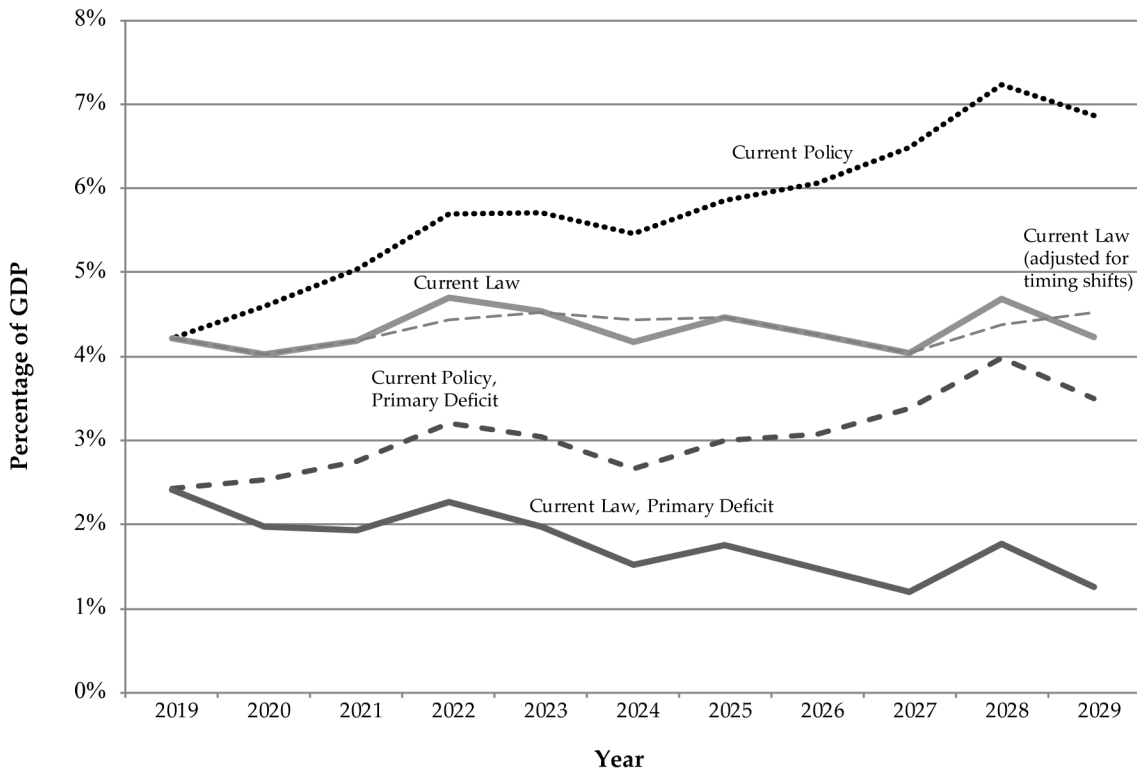
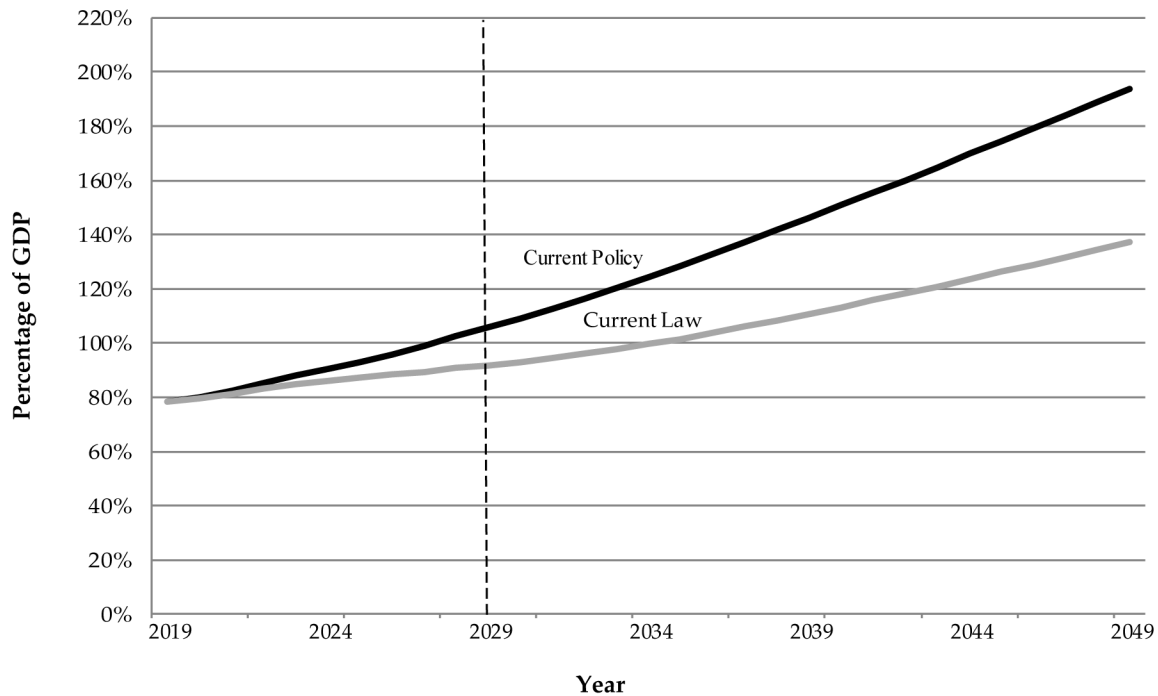


Figure 2. Debt to GDP Ratio, 2019-2049



## B. Current Policy

We construct alternative 10-year projections by starting with the CBO's May 2019 current-law baseline<sup>5</sup> and then making a series of adjustments.<sup>6</sup> In many cases, we use estimates that the CBO itself provides of alternative policy options. Appendix Table 1 outlines the size of the adjustments relative to the CBO baseline. We emphasize that these adjustments are not policy recommendations; they simply show the effects of what we view as a continuation of current policies.

We assume that major temporary tax cut provisions are made permanent, including those in the Tax Cuts and Jobs Act. This includes 100 percent bonus depreciation (expensing of business investment in qualifying equipment) and the personal income tax cuts scheduled to expire after 2025.<sup>7</sup> We also assume that enacted tax provisions for which implementation has already been delayed will be permanently delayed (that is, the provisions will be canceled and never take effect). This includes some postponed or suspended healthcare taxes in the Affordable Care Act, such as the medical device excise tax and the tax on high-premium insurance (the "Cadillac" tax). With bipartisan support, the implementation of these taxes was postponed by two years in the Protecting Americans From Tax Hikes Act in December 2015 and by another two years in the Extension of Continuing Appropriations Act, 2018.<sup>8</sup>

On the spending side, the CBO sets discretionary spending through 2021 at the levels created by the discretionary spending caps and sequestration procedures (as imposed in the

Budget Control Act of 2011 and modified by the Bipartisan Budget Acts of 2013, 2015, and 2018) and then allows them to rise with inflation. We allow defense spending to rise with inflation, starting in 2020, so that real defense expenditures remain constant at 2019 levels.<sup>9</sup> 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 2019 levels. Both assumptions are meant to reflect a rough approximation of a budget that maintains current services. For defense, largely a nonrival public good, it seems reasonable to assume that current services can be maintained without regard to population over the short term. For non-defense programs, it is more likely that maintaining current services requires a population adjustment.

Deficits and debt under current policy are reported in figures 1 and 2 and in Appendix Table 1. Current policy deficits rise from 4.2 percent of GDP in 2019 to 6.9 percent of GDP by 2029.<sup>10</sup> The debt-to-GDP ratio grows from 78.2 percent at the end of 2019 to 105.7 percent by the end of 2029.

## C. Discussion

### 1. Deficits.

Over the next decade, deficits average 4.3 percent of GDP under current law and 6 percent of GDP under current policy. In the post-war period, the United States has had deficits of at least 4.3 percent of GDP in only a handful of years: a few years in the mid-1980s during a steep recession, in 1991-1992, and in 2009-2012 following the financial crisis and Great Recession. The deficit exceeded 6 percent of GDP only from 2009-2012.

The projected deficits are, on average, full-employment deficits, because cumulative actual GDP is projected to equal cumulative potential GDP over the period.<sup>11</sup> The average full-

<sup>5</sup> CBO, *supra* note 2.

<sup>6</sup> The CBO's most recent full 10-year economic outlook analysis was in January 2019. CBO, "The Budget and Economic Outlook: 2019 to 2029" (Jan. 2019).

<sup>7</sup> Examples of major expiring provisions in the TCJA include the marginal income tax rate and bracket changes, the increased standard deduction, the repeal of personal exemptions, the increased estate tax exemption, the cap on state and local tax deductions, and the 20 percent deduction for some passthrough income. Examples of expiring provisions outside the TCJA include tax credits for biodiesel and alternative fuel mixtures and the deduction for mortgage insurance premiums. See CBO, "The Budget and Economic Outlook: 2018 to 2028" (2018), for more details.

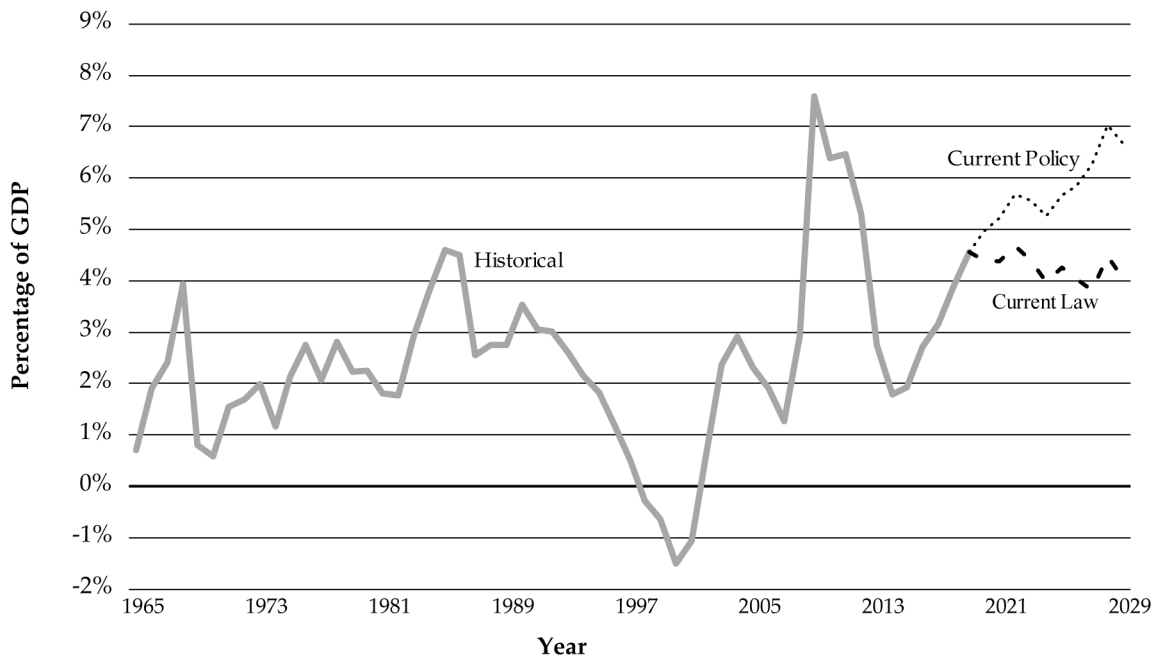
<sup>8</sup> The revenue adjustments also affect refundable tax credits, which, in accordance with CBO, *supra* notes 2 and 6, is considered an effect on outlays.

<sup>9</sup> CBO, *supra* notes 2 and 6, uses a mix of the employment cost index and the GDP price index to measure inflation.

<sup>10</sup> Under a timing-adjusted baseline, the deficit would be around 7.2 percent of GDP in 2029.

<sup>11</sup> CBO, *supra* note 6. Projected automatic stabilizers average less than 0.1 percent of GDP over the decade.

Figure 3. Full-Employment Deficits, 1965-2029



Source: Congressional Budget Office (2019a, 2019c).

employment deficit between 1965 and 2018 was just 2.7 percent of GDP.<sup>12</sup> Figure 3 shows previous and projected full-employment deficits. Under current law, the projected full-employment deficits are unprecedented in that they are persistently near 4 percent of GDP or higher. Under current policy, the full-employment deficits rise significantly, reaching 7 percent within the period. Unlike the temporary spikes in the full-employment deficit in prior episodes, the projected full-employment deficits are chronic. This gives a sense of how large the fiscal imbalance is.

The primary (ex-interest) deficit is positive under both current law and current policy and generally rises over time as a share of GDP under current policy (Figure 1), another sign of rising fiscal problems.

## 2. Debt.

At 78 percent of GDP, publicly held federal debt is already higher than at any time in U.S.

history other than 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, the last year before the financial crisis and the Great Recession, the ratio was 35 percent.

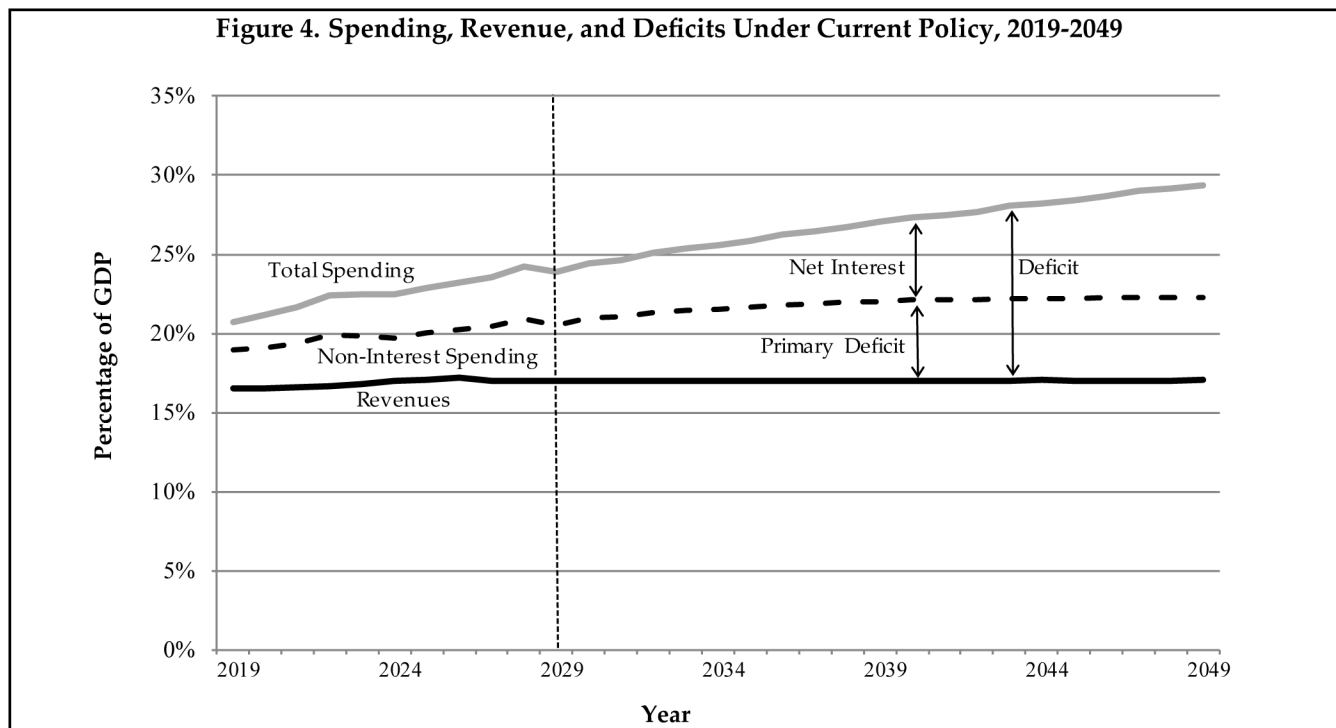
The debt-to-GDP ratio rises by more than 27 percentage points from 2019 to 2029 under current policy. By 2029 the debt-to-GDP ratio under current policy is projected to be near the highest ever, just barely below a figure of 106.1 percent from 1946.

## 3. Spending.

Total spending under current policy rises from 20.7 percent of GDP in 2019 to 23.9 percent by 2029 (Table 1, Figure 4). By comparison, total spending averaged 20.4 percent of GDP from 1965 to 2018 (weighted by GDP) — a period over which the debt-to-GDP ratio rose significantly. As a share of GDP, net interest, Social Security, and healthcare spending (Medicare, Medicaid, the Children's Health Insurance Program (CHIP), and exchange subsidies) are projected to rise; defense, non-defense discretionary, and other mandatory spending is slated to decline.

<sup>12</sup>This figure is a weighted average, where the weight is GDP. The unweighted average is 2.4 percent.





Net interest payments are projected to rise from 1.8 percent of GDP in 2019 to 3.4 percent in 2029. The rise is attributable to projections of growing debt and rising interest rates.<sup>13</sup> Notably, interest rates on government debt stay below the economic growth rate over the entire decade. From 1965-2018, by comparison, net interest averaged 1.9 percent of GDP and the previous high was 3.2 percent of GDP in 1991.

Overall non-interest spending rises from 18.9 percent of GDP in 2019 to 20.5 percent by 2029 (Table 1, Figure 4), considerably above the average (weighted) value of about 18.6 percent from 1965 to 2018.

Mandatory spending is projected to rise from 12.7 percent of GDP in 2019 to 14.6 percent in 2029; a big part of this growth is attributable to

Social Security (about 1 percent of GDP) and net Medicare spending (0.9 percent of GDP).<sup>14</sup> Among the remaining programs, Medicaid benefits, CHIP, and exchange subsidies rise by almost 0.3 percent of GDP, offset in part by a decline of about 0.3 percent of GDP in spending on other entitlements (Table 1, Figure 5).

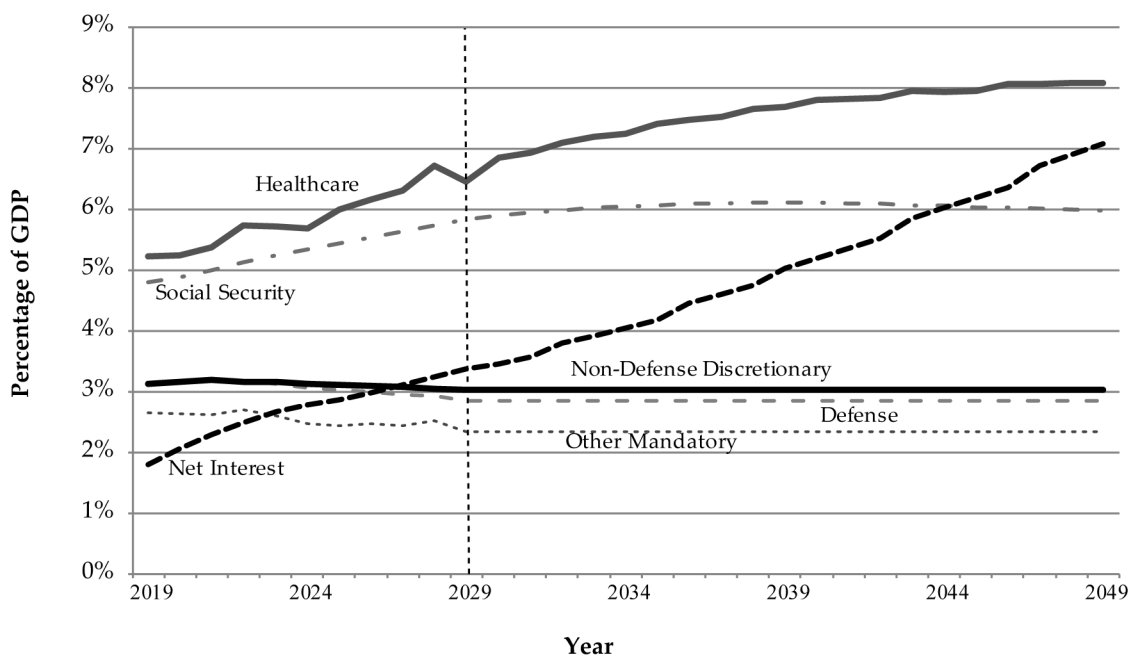
**Table 1. Spending Categories as a Percentage of GDP in Select Years**

	2019	2029	2049
Healthcare	5.2%	6.5%	8.1%
Social Security	4.8%	5.8%	6.0%
Defense	3.1%	2.9%	2.9%
Nondefense discretionary	3.1%	3.0%	3.0%
Other mandatory	2.7%	2.3%	2.3%
<b>Total non-interest spending</b>	<b>18.9%</b>	<b>20.5%</b>	<b>22.3%</b>
Net interest	1.8%	3.4%	7.1%
<b>Total spending</b>	<b>20.7%</b>	<b>23.9%</b>	<b>29.4%</b>

<sup>13</sup> CBO, *supra* note 6. The three-month Treasury bill rate rises to 3.2 percent in 2021 compared with 2.6 percent in 2019. The 10-year Treasury note rate rises to 3.7 percent in 2021 compared with 3.3 percent in 2019. Various measures of the inflation rate such as the consumer price index and employment cost index are expected to rise around 0.3 to 0.4 percentage points over the same period; the remainder of the interest rate increases represents changes in real interest rates. The three-month interest rate is projected to be 2.8 percent in 2029. Note, however, that this moderation is in part attributable to the removal of fiscal stimulus under current law through the expiration of tax provisions and very low discretionary spending growth — factors not present under our current policy scenario.

<sup>14</sup> About \$64 billion in Medicare spending is shifted from 2029 to 2028 because of the timing effects discussed in *supra* note 4.

Figure 5. Composition of Spending Under Current Policy, 2019-2049



Discretionary spending falls from 6.3 percent of GDP in 2019 to 5.9 percent in 2029, even under current policy. Within that category, defense spending declines from 3.1 percent in 2019 to 2.9 percent in 2029, while non-defense discretionary spending falls from 3.1 percent of GDP in 2019 to 3 percent of GDP in 2029 (Table 1, Figure 5). All these shares are low relative to historical figures. Since 1965, 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 previous low for non-defense discretionary spending share of GDP was 3.1 percent in 1999.

#### 4. Revenue.

Revenue is projected to increase from 16.5 percent of GDP in 2019 to 17 percent of GDP in 2029 under current policy (Figure 4). (Under current law, revenue rises to 18.3 percent of GDP by 2029.) By comparison, revenue averaged 17.1 percent of GDP from 1965 to 2018 (weighted by GDP). As noted, the ratio of debt to GDP rose significantly over this period. Notably, individual income tax revenue is projected to rise from 8.2 percent of GDP currently to 8.7 percent of GDP by 2029 under current policy. The increase in individual income tax revenue is paired with a

small increase in corporate tax revenue from 1.2 percent of GDP in 2019 to 1.3 percent of GDP in 2029 and a smaller increase in payroll tax revenue. Even though corporate tax revenue is projected to increase as a share of GDP over the next decade, it will still be significantly lower than the average since 1965 (weighted) of 1.8 percent of GDP. Moreover, the increase does not reverse the several-decade trend of shrinking corporate tax revenue. Other revenues are projected to drop as a share of the economy over the 2019-2029 period.

#### D. Trust Funds

The federal government runs several trust funds, most notably for Social Security (Old-Age and Survivors Insurance), Disability Insurance, Medicare (two separate funds), civilian and military retirement, and transportation spending. All 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 fund balances run 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 incoming revenue. The Social Security (Old-Age and Survivors Insurance) Trust Fund is currently scheduled to have to make forced adjustments by 2034 according to the Social Security trustees (2032 according to the CBO). The Disability Insurance Trust Fund is scheduled to have to make forced adjustments by 2052 according to the Social Security trustees (2028 according to the CBO).<sup>15</sup> According to the CBO and the 2019 trustees report,<sup>16</sup> the Medicare Part A (Hospital Insurance) Trust Fund appears likely to hit a similar constraint by 2026.<sup>17</sup> Each of those dates may prompt 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, the Medicare Part B (Supplementary Medical Insurance) and Part D (Prescription Drug Coverage) trust funds receive substantial general revenue funding and do not have the constraint that spending can be financed only by trust fund payments.

Although low trust fund balances may require action, low balances and actions to address them involve individual programs and the nature of their funding sources. They also 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

Looking at only the next 10 years gives an incomplete and overly optimistic picture of the fiscal outlook, even with adjustments made to characterize current policy. In this section, we examine the fiscal outlook over longer horizons.

<sup>15</sup> Board of Trustees, Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds, "The 2019 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds" (2019); and CBO, *supra* notes 2 and 6.

<sup>16</sup> Boards of Trustees, Federal Hospital Insurance and Federal Supplemental Medical Insurance Trust Funds, "The 2019 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplemental Medical Insurance Trust Funds" (2019).

<sup>17</sup> *Id.*

### A. Background

The fiscal gap is an accounting measure that is intended to reflect the long-term budgetary status of the government.<sup>18</sup> The fiscal gap answers this question: If one starts a policy change in a given year to 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, holding projected economic performance unchanged? For example, one might ask what immediate and constant policy change would be needed to obtain the same debt-to-GDP ratio in 2049 as exists today.<sup>19</sup> Or one might ask what constant-share-of-GDP change would be required, starting in 2025, to achieve a debt-to-GDP ratio of 60 percent by 2049.

For our base case, we use the current policy projections developed above for the first 10 years, assume that policymakers start making fiscal adjustments in 2019, and set a debt-to-GDP target for the future equal to the ratio at the beginning of fiscal 2019, 77.8 percent.

We use long-term economic growth assumptions implied in the CBO's 2019 long-term budget outlook.<sup>20</sup> Over the 2030-2049 period, the average nominal economic growth rate is 4 percent. The CBO does not report growth rates after 2049, so we assume that the economy grows at the 2030-2049 average rate in subsequent years.<sup>21</sup>

We assume the weighted average nominal interest rate on government debt rises gradually from 3.4 percent in 2029 to 3.9 percent in 2049,

<sup>18</sup> Auerbach, "The U.S. Fiscal Problem: Where We Are, How We Got Here, and Where We're Going," in 9 *Nat'l Bureau of Econ. Res. Macroecon. Ann.* 141-175 (1994); Auerbach et al., "Budget Blues: The Fiscal Outlook and Options for Reform," in *Agenda for the Nation*, 109-143 (2003), discuss the relationship between the fiscal gap, generational accounting, accrual accounting, and other ways of accounting for government.

<sup>19</sup> Over an infinite planning horizon, this requirement is equivalent to assuming that the debt-to-GDP ratio does not explode. Auerbach 1994, *id.*; and Auerbach, "Quantifying the Current U.S. Fiscal Imbalance," 50 *Natl. 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 effect on our long-term calculations would be small (reducing the fiscal gaps by less than 0.1 percent of GDP).

<sup>20</sup> CBO, "The 2019 Long-Term Budget Outlook" (2019).

<sup>21</sup> *Id.*



following the static estimates from the CBO.<sup>22</sup> After 2049 we gradually increase the interest rate to 4.8 percent by 2094, consistent with the long-term nominal interest rate projected by the board of trustees, adjusted for differences in economic growth between the trustees report<sup>23</sup> and the CBO's long-term budget outlook.<sup>24</sup>

For Medicare and the Old-Age, Survivors and Disability Insurance program, we project all elements of spending and dedicated revenues (payroll taxes, income taxes on benefits, premiums, and contributions from states) using the growth rates in the intermediate projections in the 2019 trustee reports for the period between 2030 and 2094.<sup>25</sup> For Medicaid, CHIP, and exchange subsidies, we use growth rates implied by the CBO's most recent long-term static projections through 2049.<sup>26</sup> After 2049, the growth rate follows the 2015 CBO budget outlook,<sup>27</sup> but the level is adjusted for the difference in average spending between the CBO's 2015 and 2019 long-term budget outlooks for 2045-2049.<sup>28</sup>

We assume that all other revenue, all other mandatory spending, and all discretionary spending remain constant at their 2029 shares of GDP. This implicitly assumes that policymakers will make a series of (small) tax cuts and discretionary spending increases over time.

After 2094 (for our "permanent" calculations), all non-interest spending and all revenues are assumed to be constant as a share of GDP, in all the scenarios.

<sup>22</sup> The static projections are based on macroeconomic forecasts for a constant debt-to-GDP ratio and constant marginal tax rates after 2029 — that is, excluding the negative economic effects of economic policy during this period.

<sup>23</sup> Board of Trustees, *supra* note 15.

<sup>24</sup> CBO, *supra* note 20.

<sup>25</sup> Details of the computations are available from the authors upon request. Because \$64 billion of Medicare payments are shifted from 2029 to 2028 in CBO, *supra* note 2, our default procedure would result in artificially low Medicare estimates after 2029. To compensate for the timing shift, we modify our procedure so that 2029 Medicare spending is based on the unadjusted baseline, but the 2030 estimate grows from the higher value implied by the timing-adjusted baseline for 2029.

<sup>26</sup> CBO, *supra* note 20.

<sup>27</sup> CBO, "The 2015 Long-Term Budget Outlook" (2015).

<sup>28</sup> The CBO's 2015 budget outlook includes a 75-year projection, while its 2019 budget outlook has only a 30-year projection. Our procedure is intended to extend the data in the 2019 CBO budget outlook, *supra* note 20, for the other 45 years. From 2045-2049 (CBO, *supra* note 20) projections for Medicaid, CHIP, and exchange subsidies as a share of GDP are about 3 percent larger than the projections in the 2015 CBO budget outlook, *supra* note 27.

## B. Basic Projections

Under the base assumptions, we project that total spending will rise from 23.9 percent of GDP in 2029 to 29.4 percent of GDP by 2049. Most of this increase is attributable to interest payments, which rise from 3.4 percent of GDP in 2029 to 7.1 percent of GDP in 2049, at which point net interest payments will exceed outlays for Social Security benefits.

Non-interest spending will rise from 20.5 percent of GDP in 2029 to 22.3 percent of GDP in 2049 (Table 1, Figure 4). Healthcare spending will rise from 6.5 percent of GDP in 2029 to 8.1 percent of GDP in 2049, while Social Security will rise at a slower pace, from 5.8 percent of GDP in 2029 to 6 percent of GDP in 2049. As discussed above, we assume that discretionary spending and other mandatory spending remain constant as a share of GDP after 2029 (Table 1, Figure 5).

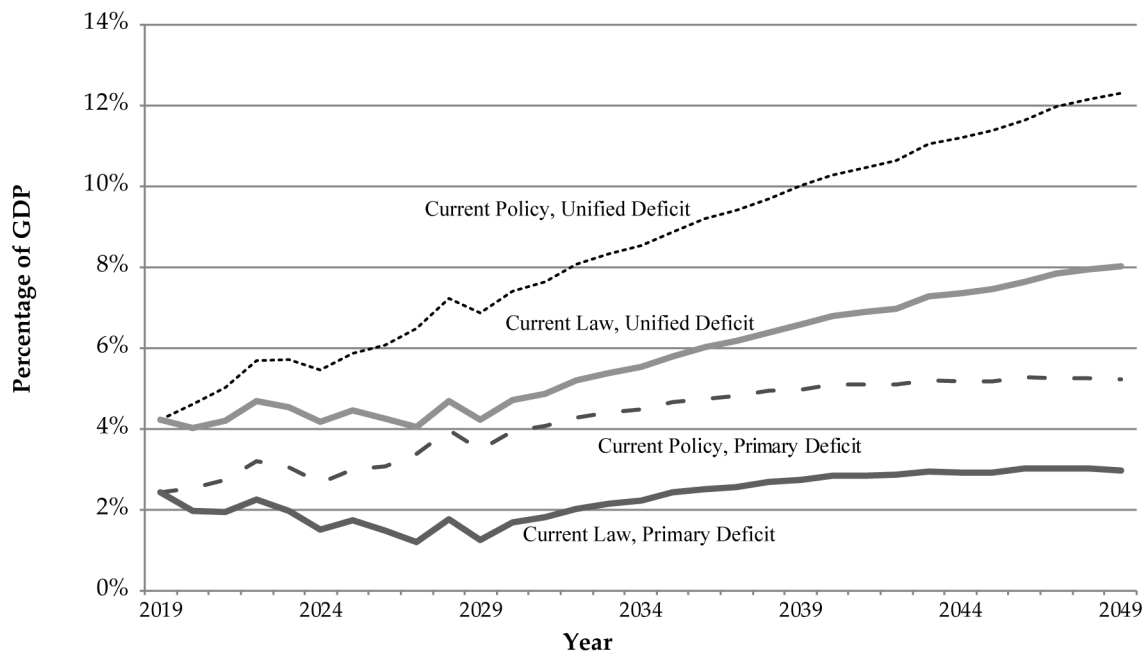
Revenue is projected to remain almost constant as a share of GDP between 2029 and 2049 (Figure 4). Thus, under current policy, the deficit rises from 6.9 percent of GDP in 2029 to 12.3 percent by 2049 (Figure 6). Most of this increase is attributable to net interest payments. Still, the primary deficit rises from 3.5 percent of GDP in 2029 to 5.2 percent of GDP in 2049. Debt rises from 106 percent of GDP in 2029 to 194 percent by 2049 (Figure 2).

This pattern highlights a key difference between the current situation and previous high-debt episodes in U.S. history, which occurred mainly in wars or economic depressions. In those war 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. In the projections, however, the nation faces a built-in chronic imbalance between revenue and spending, in considerable part attributable to the aging of the population, rather than a temporary spike in spending resulting from war or a temporary decline in revenue resulting from an economic depression.

## C. Fiscal Gap Estimates

Table 2 shows that under current policy, immediate and permanent tax increases or non-interest spending cuts totaling 3.9 percent of GDP starting in 2019 would be required to bring the

Figure 6. Primary and Unified Deficit Projections, 2019-2049



debt-to-GDP ratio in 2049 down to 77.8 percent, the level at the end of 2018. In 2019, for example, this is equivalent to a 47 percent increase in income tax revenue, a 24 percent increase in all tax revenue, or a 21 percent reduction in all non-interest spending.

The rest of Table 2 shows sensitivity analyses.<sup>29</sup> Using the current-law baseline for the first 10 years reduces the 2049 debt-to-GDP ratio

by 57 percentage points and reduces the 2049 fiscal gap by 1.9 percent of GDP.<sup>30</sup>

As noted, the longer policymakers wait to make the adjustments, the larger the eventual adjustments will have to be. The required adjustments to meet a 2049 target would be about 0.3 percent of GDP larger if implementation were delayed until 2021 and 0.9 percent of GDP larger (relative to the baseline) if delayed until 2025.

The differences in the fiscal gaps implied by different Medicare scenarios are relatively small through 2049 (but rise in later years). Our base case uses 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 Medicare projections have assumed a much

<sup>29</sup> The results are roughly additive across scenarios. For example, the fiscal gap through 2049 of a scenario with current law for the first 10 years, lower spending, higher revenue, and the illustrative scenario for Medicare could be approximated by the base case gap plus the incremental gaps to generate an approximate fiscal gap through 2049 of 1.30 percent of GDP ( $= 3.90 - 1.92 - 0.54 - 0.30 + 0.15$ , with rounding). A formal estimate that explicitly incorporates all those factors generates a fiscal gap of 1.33 percent of GDP. For additional perspective on these assumptions, see 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).

<sup>30</sup> The CBO, *supra* note 20, reports a current-law debt-to-GDP ratio of 144 percent in 2049, compared with our estimate of 137 percent. Major differences between our current-law baseline and the extended CBO baseline include the following: We use trustees' report data for Social Security and Medicare after 2029 instead of CBO data; we hold corporate tax revenues constant at 1.4 of GDP after 2029, while the CBO allows corporate tax revenues to fall to 1.3 percent of GDP; and unlike in the CBO's extended baseline, we do not incorporate the macroeconomic feedback effects of growing debt in our interest rate and economic growth projections.

Table 2. 2049 Fiscal Gaps and Debt

Central Estimate	2049 Debt (percentage of GDP)	2049 Fiscal Gap (percentage of GDP)	Required Percentage Change (in 2019 terms) if Just Through		
			Income Taxes	All Taxes	Non-Interest Spending
Current policy baseline <sup>a</sup>	194%	3.9%	47%	24%	-21%
<b>Alternative options (individual incremental effects relative to current policy baseline)</b>					
Current law for the first 10 years	-57%	-1.92%			
Start in 2021	0%	0.25%			
Start in 2025	0%	0.91%			
CMS illustrative alternative health spending	4%	0.15%			
CBO extended baseline health spending	11%	0.37%			
NDDS and other mandatory grows with inflation and population, defense grows with inflation	-16%	-0.54%			
Income tax grows with bracket creep and retirement withdrawals	-9%	-0.3%			
Low interest rates	-37%	-0.71%			
<i>Source:</i> Authors' calculations.					
<sup>a</sup> Uses current policy for the first 10 years and Boards of Trustees (2019) for Medicare.					

stronger slowdown, attributable to provisions in the ACA. These assumptions, although they may be consistent with the effect 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. The illustrative scenario in the board of trustees report<sup>31</sup> and the extended baseline in the CBO's 2019 budget outlook<sup>32</sup> include projections showing faster spending growth.

If baseline outlays for non-defense discretionary and other mandatory programs are held constant in real, per capita terms after 2029 and defense spending remains constant in real terms (instead of each item being a constant share of GDP), the 2049 debt-to-GDP ratio falls by 16 percentage points and the fiscal gap falls by about 0.5 percent of GDP.

If baseline income tax revenue (other than Social Security and Medicare benefits) grows with

bracket creep and retirement withdrawals after 2029 (instead of remaining a constant share of GDP), the 2049 debt-to-GDP ratio falls by about 9 percentage points and the fiscal gap falls by about 0.3 percent of GDP.

Some analysts believe the economy has entered a new era of permanently lower interest rates.<sup>33</sup> To test the role of interest rates on the budget outlook, we estimated the impact of what we believe is an extremely optimistic scenario (for budgetary purposes): that a weighted average of nominal interest rates on all government debt stays constant at its implied 2019 value (2.4 percent) for the next 30 years.<sup>34</sup> This scenario reduces the 2049 debt-to-GDP ratio by 37 percentage points relative to the current policy baseline and reduces the fiscal gap by about 0.7 percent of GDP. Thus, rising interest rates play a

<sup>31</sup> *Supra* note 16.

<sup>32</sup> CBO, *supra* note 20.

<sup>33</sup> Douglas Elmendorf and Louise Sheiner, "Federal Budget Policy With an Aging Population and Persistently Low Interest Rates," 31 *J. Econ. Persp.* 175-194 (2017); and Lawrence H. Summers, "The Age of Secular Stagnation," *Foreign Affairs* (Mar./Apr. 2016).

<sup>34</sup> This interest rate is calculated by dividing the estimated net interest payments in 2019 from CBO, *supra* note 2, by the debt at the end of 2018.

key role in the fiscal outlook, but the United States faces significant unfunded future liabilities (for example, Social Security and Medicare) even with a low-interest-rate path.<sup>35</sup>

Combining “optimistic” estimates gives a sense of what it would take to keep the debt-to-GDP ratio from rising very much over the next 30 years. If policymakers (1) followed current-law projections for the next 10 years, (2) let taxes rise with bracket creep in subsequent years, and (3) held defense spending constant in real terms and non-defense discretionary spending and other mandatory spending constant relative to the price level and population growth, the debt-to-GDP ratio in 2049 would be 113 percent. Note that this would require allowing all temporary tax provisions to expire; never cutting taxes; having no wars or military expansions over a generation; and allowing no increase in domestic spending per capita for three decades. If, in addition, interest rates were to stay constant, the 2049 debt-to-GDP ratio would be 96 percent.<sup>36</sup>

Table 3 shows fiscal gaps for various start dates, target dates, and target ratios. The first row shows that the fiscal gap through 2094 is 5.3 percent of GDP; on a permanent basis, the required adjustment is 6.3 percent of GDP. With a debt target of 60 percent — the level proposed by two commissions<sup>37</sup> and William Gale<sup>38</sup> — the fiscal gap rises to 4.4 percent of GDP through 2049. With a debt target of 36 percent of GDP — the average ratio between 1957 and 2007 — the fiscal gap is 5.2 percent through 2049. Delaying implementation makes the fiscal gaps larger.

<sup>35</sup> Indeed, a strategy of providing full or partial pre-funding of those future liabilities would be made more difficult by low interest rates.

<sup>36</sup> CBO, *supra* note 20, provides other sensitivity analyses, noting, for example, that if annual total factor productivity growth rates were 0.5 percentage points higher than projected (1.6 percent rather than 1.1 percent), the debt-to-GDP ratio in 30 years would be about 38 percentage points lower than in the baseline.

<sup>37</sup> See Debt Reduction Task Force, “Restoring America’s Future: Reviving the Economy, Cutting Spending and Debt, and Creating a Simple, Pro-Growth Tax System,” Bipartisan Policy Center (2010); and Peterson-Pew Commission on Budget Reform, “Red Ink Rising: A Call to Action to Stem the Mounting Federal Debt” (Dec. 2009).

<sup>38</sup> William G. Gale, *Fiscal Therapy: Curing America’s Debt Addiction and Investing in the Future* (2019).

**Table 3. Additional Fiscal Gap Estimates**

	Through 2049	Through 2094	Permanent Gap
Start date: 2019			
Debt target			
Current	3.90	5.26	6.29
60	4.40	5.44	N/A
36	5.24	5.74	N/A
Start date: 2024			
Debt target			
Current	4.62	5.62	6.39
60	5.21	5.81	N/A
36	6.21	6.12	N/A

#### IV. Discussion

Over the next 10 years, the nation is on course for routine trillion-dollar annual deficits, the highest debt-to-GDP ratio in its history, and large, permanent, rising full-employment deficits. Beyond the next decade, deficits and debt are projected to rise steadily because of rising entitlement spending and net interest payments and, as of yet, an unwillingness to either reduce those outlays or provide the revenue needed to finance them. All this is projected to occur even though interest rates will remain below the economy’s growth rate.

Recent papers have argued that current debt levels are not a problem, in large part because interest rates are so low, but they are careful not to rule out problems from the projected sustained long-term debt build-up.

A recent, highly publicized article by Olivier Blanchard<sup>39</sup> notes that if the interest rate on government debt is smaller than the growth rate of the economy ( $r < g$ ) and if primary deficits (excluding interest) are small, the government can roll over debt and still have the debt-to-GDP ratio stay constant or fall. Under those circumstances, there is no need to raise taxes or cut spending to sustain a given debt level (although the impact of

<sup>39</sup> Olivier Blanchard, “Public Debt and Low Interest Rates,” 109 *Am. Econ. Rev.* 1197-1229 (2019).



higher debt on the economy may nonetheless provide a reason to cut debt).

Although this is mathematically correct, it misses an important element of the current U.S. situation, as Blanchard acknowledges. Although  $r < g$ , U.S. primary deficits are large.<sup>40</sup> Thus, as shown in Figure 2, rather than staying constant or falling over time, the debt-to-GDP ratio is projected to rise inexorably in the future, even if the economy stays strong and even if  $r$  remains below  $g$ . Indeed, in a *Financial Times Alphachat* podcast, Blanchard says very specifically that current U.S. deficits do not “make any sense.”<sup>41</sup>

Paul Krugman, even while acknowledging that rising long-term debt could be a problem, notes correctly that  $r < g$  implies that we can’t get a national debt spiral simply from interest payments.<sup>42</sup> But that does not rule out a debt spiral from the combination of interest payments and primary deficits. While we would not necessarily describe the current projections as a “spiral,” they do show a steady, substantial, continuing increase in the debt-to-GDP ratio.

Jason Furman and Lawrence H. Summers are also careful to acknowledge that rising long-term debt could be problematic, but they nevertheless conclude that debt concerns need not be addressed currently.<sup>43</sup> They argue that policymakers should pay for any new spending or revenue initiatives, unless there is a recession or an infrastructure initiative, but should not try to reduce future deficits through active policy. This is a stronger fiscal constraint than is being used by proponents of ambitious new programs for healthcare and the environment. Still, their view downplays several advantages of making proactive choices on fiscal policy.

First, we face high and persistent primary deficits in a strong economy. As President Kennedy said, “The time to fix the roof is when

the sun is shining.”<sup>44</sup> If we can’t undertake deficit-reducing measures even during good times, it will only be harder in the future if the economy falls into recession — automatically reducing revenue and raising spending — and aging patterns boost Social Security and Medicare outlays.

Second, the projected growing debt is not associated with achieving important economic objectives. When deficits finance government investment or anti-recession efforts, increased debt can boost the economy. But the debts we are accumulating do not involve these priorities. Indeed, federal investment in infrastructure and human capital is projected to decline as a share of GDP. Thus, government borrowing will reduce future national income *even if it does not raise interest rates*. Government borrowing tends to reduce national saving, the sum of saving by the private and public sector. Once current national saving falls, future national income will fall. This could happen through higher interest rates, which then choke off investment and reduce future production and income — the standard “crowd out” mechanism. Indeed, federal deficits, national saving, and national investment are highly correlated.<sup>45</sup>

But suppose capital inflows from abroad are large enough to offset the entire decline in national saving caused by higher deficits. In that case, interest rates may not rise, and investment and future GDP may not fall, but future national income (for example, gross national product) will fall because, given the same amount of production, more of the proceeds must be directed to pay the foreigners who lent us the money.<sup>46</sup> If interest rates remain very low, borrowing from abroad can increase future domestic consumption even as it reduces future national income. But if we finance our current debt trajectory with capital inflows and interest rates later rise to exceed growth rates, the nation would be left with an enormous and expensive debt burden.

<sup>40</sup> The 2019 primary deficit is expected to be 2.4 percent of GDP. The last time the United States had full employment, in fiscal 2001, the primary budget had a *surplus* of 3.2 percent, a turnaround of 5.6 percent of GDP from today, or almost \$1.2 trillion in the 2019 economy.

<sup>41</sup> *Financial Times Alphachat*, “Olivier Blanchard on Debt: ‘Relax. Don’t Relax Too Much, but Relax’” (Jan. 18, 2019).

<sup>42</sup> Paul Krugman, “Melting Snowballs and the Winter of Debt,” *The New York Times*, Jan. 9, 2019.

<sup>43</sup> Jason Furman and Summers, “Who’s Afraid of Budget Deficits? How Washington Should End Its Debt Obsession,” *Foreign Affairs* (Jan. 27, 2019).

<sup>44</sup> John F. Kennedy, “Annual Message to Congress on the State of the Union” (Jan. 11, 1962).

<sup>45</sup> Gale, *supra* note 38.

<sup>46</sup> For example, CBO, *supra* note 7, estimates that the TCJA will raise GDP (production) by 0.5 percent in 2028 but that GNP (income) will rise by only 0.1 percent, with the difference accruing to foreign holders of U.S. capital.



Third, if the future deficit path looked favorable — that is, if our current primary deficits were thought to be temporary — the argument for simply letting it evolve would be stronger. But it is the future primary deficit projections that hang over the present and mean that we are going to have to address federal budget deficits sooner or later. Doing it when the economy is strong is far preferable to waiting until countercyclical fiscal stimulus may be needed.

Addressing the long-term fiscal issue now does not necessarily mean sharp immediate expenditure cuts or tax increases; rather, it may involve phasing in changes for future spending and revenue in a gradual, although credible, manner. However, the longer we wait to act, the larger and more disruptive the eventual policy solutions will need to be, and it may be difficult to make future actions credible if they are not paired with at least some immediate measures.

There is substantial uncertainty regarding budget projections. Nevertheless, a range of reasonable estimates implies an unsustainable fiscal path that will generate significant problems if not addressed. How should the presence of that uncertainty affect when and how we make policy changes?<sup>47</sup> One argument is that we should wait; after all, the fiscal problem could go away. However, uncertainty can cut both ways, and the greater the uncertainty, the more we should want to address at least part of the problem now. There are benefits to getting future deficits under control — including economic growth and fiscal flexibility, and the current economic climate provides a good opportunity to do so.

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Appendix Table. Federal Budget Deficit, CBO Baseline and Extended Policy, 2019-2029<sup>a,b</sup> (Continued)

	Deficit (billions of dollars)											
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020-2029
Net interest <sup>d</sup>	\$0	\$2	\$6	\$13	\$20	\$27	\$35	\$44	\$55	\$66	\$78	\$344
Total adjustments for spending policy	\$0	\$108	\$169	\$201	\$227	\$250	\$271	\$293	\$333	\$357	\$382	\$2,592
As percentage of nominal GDP	0%	0.5%	0.7%	0.8%	0.9%	1%	1%	1.1%	1.2%	1.2%	1.3%	1%
Current policy	\$897	\$1,018	\$1,155	\$1,355	\$1,409	\$1,399	\$1,563	\$1,678	\$1,865	\$2,158	\$382	\$15,730
As percentage of nominal GDP	4.2%	4.6%	5%	5.7%	5.7%	5.5%	5.9%	6.1%	6.5%	7.2%	1.2%	6%
GDP	\$21,252	\$22,12	\$22,939	\$23,778	\$24,672	\$24,642	\$26,656	\$27,667	\$28,738	\$29,862	\$31,006	\$263,080
<sup>a</sup> Columns may not sum to total due to rounding.												
<sup>b</sup> The source of these estimates is CBO (2019c), "Updated Budget Projections: 2019 to 2029."												
<sup>c</sup> These include the Cadillac tax, the medical device tax, and the tax on health insurance providers.												
<sup>d</sup> Net interest for tax extenders is proportionally allocated between the revenue and spending effects.												

<sup>a</sup>Columns may not sum to total due to rounding.<sup>b</sup>The source of these estimates is CBO (2019c), "Updated Budget Projections: 2019 to 2029."<sup>c</sup>These include the Cadillac tax, the medical device tax, and the tax on health insurance providers.<sup>d</sup>Net interest for tax extenders is proportionally allocated between the revenue and spending effects.