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# THE FEDERAL BUDGET OUTLOOK

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# ABSTRACT

We examine the federal fiscal outlook in light of the most recent Congressional Budget Office (CBO) projections. While CBO projects that the ratio of federal debt to GDP will rise from 98% currently to 195% in 2053 under current law, we show that under current-policy adjustments (including extending the temporary provisions of the 2017 Tax Cuts and Jobs Act), debt would rise to 240% in 2053. Under either projection, debt would be expected to continue to rise thereafter. Interest payments on the debt are projected to rise dramatically and to exceed Social Security or Medicare by 2053. By any measure, the federal budget outlook is unsustainable and will eventually require federal action. For example, the current debt-to-GDP ratio could be achieved in 2053 with immediate and permanent spending cuts or tax increases exceeding 3% GDP – equivalent to a one-third increase in the income tax or a one-quarter cut in spending, other than Social Security, Medicare, and interest payments – or with larger changes enacted later. Which debt target to choose and how quickly actions are needed will depend on many factors, including the path of interest rates.

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# I. Introduction

In light of recent economic trends and the most recent Congressional Budget Office projections (CBO 2023), we offer new perspectives on the medium- and long-term fiscal outlook, updating our previous work, most recently in Auerbach and Gale (2022).

The basic story is familiar. Low revenues coupled with rising outlays on health-related programs and Social Security drive permanent, rising primary deficits as a share of the economy. Net interest payments also rise substantially relative to GDP due to high pre-existing debt, rising primary deficits, and gradually increasing interest rates. Unified deficits and public debt rise accordingly.

Under current law for the next 10 years, the CBO's projections imply that persistent primary deficits will average 3.0% of GDP. Net interest payments will rise from 2.4% of GDP currently to 3.6% in 2033, an all-time high. The unified deficit, and even the cyclically adjusted deficit, will exceed 7% of GDP at the end of decade. Debt will rise from 98% of GDP currently to 118% by 2033, another all-time high.

Over the following two decades, the projected trends are even less auspicious. Primary deficits rise further as spending on Social Security and health-related programs continue to grow faster than GDP and revenue growth remains anemic. The average nominal interest rate on government debt rises to exceed the nominal economic growth rate by 2046, setting off the possibility of explosive debt dynamics. By 2053, relative to GDP, annual net interest payments exceed 7%, the unified deficit exceeds 11%, and the public debt stands at 195%. All these figures would be all-time highs (except for deficits during World War II and in the first two years of the COVID-19 pandemic) and would continue to grow after 2053.

Budget outcomes would be even worse under "current-policy" projections that incorporate more realistic policy choices than those required by the baseline calculations. Allowing minor adjustments to discretionary spending to maintain current services per capita and making temporary tax provisions – such as those in the Tax Cut and Jobs Act of 2017 – permanent would drive the debt-to-GDP ratio to 240% by 2053.

Fiscal gap calculations indicate the magnitude of the changes required to meet a future fiscal target. For example, starting from the current-law baseline, we estimate that to keep the debt-to-GDP ratio at its current level (98%) in 2053 would require a combination of permanent spending cuts or tax increases equaling 3.14% of GDP if implemented starting in 2024. This represents about $824 billion in today's economy, or about 33% of current income tax revenues, a 17% increase in all current tax revenues, a 15% reduction in current non-interest spending, or a 25% reduction in current non-interest spending other than Social Security and Medicare. Delaying the implementation of the actions would raise the size of the intervention needed.

The fiscal outlook has changed somewhat over the past year. Recent legislation, higher projected defense spending, and higher projected interest rates have raised the cumulative 10-year deficit by about $3.1 trillion through 2032 under current law, with interest accounting for about half of that difference. The projected 2052 debt-to-GDP ratio rose from 185% to about 190%. In both baselines, of course, the debt-to-GDP ratio would continue rising thereafter.

Long-term budget projections, of course, are sensitive to parameter choices, and in particular are sensitive to interest rate projections. But it would take enormous and unlikely favorable variation from baseline parameters to put fiscal policy on a sustainable course.

Section II describes the construction of different budget baselines. Section III summarizes how projections for gross domestic product (GDP) and interest rates have changed over the past year. Section IV examines the 10- and 30-year current-law budget projections as of February 2023 and compares them to the July 2022 baseline. Section V estimates the effects of current-policy adjustments relative to current law. Section VI discusses cyclically adjusted deficits and sensitivity analysis. Section VII calculates fiscal gaps

under various scenarios. Section VIII concludes with a discussion of a variety of perspectives on and interpretations of the budget outlook.

# II. Constructing Budget Baselines

## A. TEN-YEAR OUTLOOK

To provide perspective on both the current budget outlook and how it has changed over the past year, we examine three baselines.[1] The "2022 current-law" baseline is based entirely on projections that the Congressional Budget Office (CBO 2022a) made in May 2022. The "2023 current-law" baseline is embodied in the most recent 10-year budget projection (CBO 2023). These projections – by law and convention – assume that Congress does (almost) nothing in the way of new programs or tax changes for the next 10 years. Current-law projections serve an important purpose – they show where the government is headed in the absence of almost any action.[2]

Another way to proceed, however, is to ask where the government is headed if policy makers continue to make choices like they have in the past. Constructing a baseline along these lines – typically characterized as "2023 current policy" – clearly requires judgment calls to project the consequences of Congress following a "business as usual" approach. Our current-policy projections start with the February 2023 current-law projections and make a series of adjustments (based largely on CBO data). These adjustments simply show the effects of what, in our judgment, can be viewed as a continuation of current policies. Given the wide array of provisions enacted in the last few years due to the COVID pandemic, judgments about what constitutes current policy are particularly difficult under present circumstances, so we take a conservative approach and focus narrowly on items that are conventionally included in "current-policy" estimates.

Specifically, we assume that, as it has often done in the past, Congress makes temporary tax-cut provisions permanent, including the temporary provisions in the 2017 Tax Cuts and Jobs Act.[3] We allow real non-defense discretionary spending to rise with population growth, rather than remaining constant over time, as CBO assumes in its current-law baseline, because maintaining current services for these programs is likely to require a population adjustment. In contrast, defense spending, which largely provides a non-rival public good, plausibly can maintain current services over the relatively short 10-year horizon without a population adjustment.[4] We assume all provisions of COVID-era legislation are allowed to expire as scheduled. We calculate the added net interest payments based on CBO data.[5]

## B. 30-YEAR OUTLOOK

Looking only at the next 10 years gives an incomplete picture of the fiscal outlook, even with adjustments made to characterize current policy. Projections covering 30 years are generally sufficient to capture most long-term trends. The long-term 2023 current-law projections use data from CBO (2023) for GDP, revenues, and outlays for social security, health-related programs, and other spending.

For the current-policy projections, we set "other" mandatory spending (mandatory spending not including Social Security and health-related programs) and discretionary spending equal to their 2033 share of the economy for 2033-2053. For revenues, we start with the 2033 value under the current-policy scenario and have it grow at the same rate as revenues in the current-law baseline; i.e., the revenue paths differ only because of the different 2033 starting values. These specifications, and the current-policy adjustments during the first 10 years, cause primary deficits to differ from the current-law baseline during years after 2033.

To calculate the change in net interest payments for 2033-2053, we first calculate, using parameters form the current-law baseline, the average interest rate on government debt, defined as the ratio of (a) net interest payments in a given year to (b) the sum of (i) half of the primary deficit in that year plus (ii) debt at the end of the previous year. Then, in the current-policy projections, we apply this interest rate to changes in

the primary deficit to calculate net interest payments, the unified deficit (as the primary deficit plus net interest), and the debt (as the previous year's debt plus the current year's unified deficit).

# III. Economic Projections

Figure 1 shows that the 2023 current-law baseline projects real GDP to be lower in the next few years but very similar in the medium-term (5-10 years) as in the 2022 current-law baseline. Figure 2 shows that the 2023 current-law baseline projects interest rates to be higher in the next five years than in the 2022 current-law baseline and then somewhat lower in the long-term.

Over the longer term, one of the key assumptions has to do with the relationship between the average nominal government interest rate and the nominal economic growth rate. Figure 3 shows that the average nominal interest rate is projected to rise gradually and remain below the nominal growth rate for about 20 years, and then to exceed the growth rate starting in 2045. (Presumably, this growth in the interest rate in CBO's economic forecast is at least partially attributable to the rising debt-GDP ratio.) These economic projections help drive the budget outcomes discussed below. In the 2023 current-law baseline, the average nominal government interest rate exceeds the nominal economic growth rate by 0.41 percentage points in 2053.

# IV. Comparing Current-Law Baselines: 2022 and 2023

Under the 2023 current-law baseline, revenues are 18.3% of GDP in 2023. Tax revenues fall in the short run from a high level of individual income taxes in 2023 and then slowly rise to 18.1% in 2033 and eventually to 19.1% of GDP in 2053 (Figure 4). Income tax revenues increase after 2025 due to the expiration of provisions in the Tax Cuts and Jobs Act of 2017 and in the long term due to bracket creep.

Non-interest spending is 21.3% of GDP in 2023, gradually rising to 21.7% in 2033 and 23.0% of GDP in 2053 (Figure 5). More than 100% of this increase is due to rising outlays for mandatory programs such as Social Security and health programs (Medicare, Medicaid, CHIPS, and exchange subsidies).

Primary deficits thus rise from 2.9% of GDP in 2023 to 3.9% in 2053 (Figure 6). (Figures may not add up exactly due to rounding.) This long stretch of large, uninterrupted, and gradually rising primary deficits suggests that the government budget is fundamentally out of balance.

Net interest payments rise by more than 30% as a share of the economy in just five years (from 2.4% of GDP in 2023 to 3.1% in 2028) and then grow to 3.6% of GDP in 2033, and 7.2% in 2053 (Figure 7). By comparison, the peak historical share of net interest in the economy was 3.2% in 1991.

Unified deficits, which combine the effects of primary deficits and net interest payments, rise gradually from 5.4% of GDP in 2023, to 7.3% in 2033, and 11.2% in 2053 under current law (Figure 8). Over the next 30 years, net interest is projected not only to rise faster than other programs but to become the biggest single expenditure item (Figure 9). Debt is projected to be 98% at the end of 2023 and 118% at the end of 2033 (Figure 10). After 2030, debt accumulates more rapidly and reaches almost 195% in 2053, due to both rising primary deficits and rising interest payments.

Over the next 10 years, the 2023 current-law baseline shows $3.1 trillion more in cumulative deficits than the 2022 current-law baseline. About half of the increase is due to legislation, with the biggest components being the Honoring Our Pact Act for veterans and increases in projected defense spending. The other half is due to economic and technical changes, the majority of which – just over $1 trillion – is accounted for by higher projected interest rates. Including increases

in debt service due to higher primary deficits, increases in interest payments account for just over half of the $3.1 trillion increase between the 2022 and 2023 projections.

Over the 30-year horizon, the projections are fairly similar. Debt in 2052 is 185% of GDP in the 2022 current-law baseline and 190% in the 2023 current-law baseline. Despite the higher debt load, 2052 net interest payments are slightly lower in the 2023 current-law baseline, due to lower projected long-term interest rates.

# V. Current Law Versus Current Policy

While comparing the 2022 current-law baseline to the 2023 current-law baseline shows the continuing impact of the pandemic and associated policies and economic developments, comparing the 2023 current-law baseline to 2023 current-policy projections shows the impact of certain "business as usual" changes that Congress tends to make. These differences occur during the first 10 years, given our process for generating projections, but they have ramifications for longer-term outcomes as well because we assume that the differences persist.

Making the temporary provisions of the Tax Cuts and Jobs Act permanent, extending other expiring tax provisions, and providing modest adjustments to spending causes the primary deficit to diverge sharply from its current-law values starting in 2025. The long-term effects are quite substantial. By 2053, revenues would be just 17.9% of GDP, compared to 19.1% under current law (Figure 5); the primary deficit would rise to 5.9% of GDP and interest payments would rise to 8.8% of GDP, compared to 3.9 and 7.2%, respectively, under current law (Figures 6 and 7). Under current policy, the 2053 debt-to-GDP ratio would be 240% compared to 195% under current law (Figure 10). The current-policy projections use the same interest rate assumptions as the current-law projections; incorporating any upward impact of higher debt in the current-policy projections on interest rates would raise debt by additional amounts.

# VI. Extensions and Sensitivity Analysis

## A. CYCLICALLY ADJUSTED DEFICITS

Figure 11 shows that projected actual GDP and potential GDP are close to each other in the second half of the decade. The ratio of actual to projected GDP over that period is 0.995. Using the approximate relationship between the output gap and the size of automatic stabilizers reported in CBO (2022c), we show historical and projected future cyclically adjusted deficits in Figure 12.[6] The figure clearly shows that the projected cyclically adjusted deficits would be high and persistent relative to prior values outside the Great Recession and the COVID pandemic. At the end of the decade, we estimate a cyclically adjusted deficit equal to approximately 7.1% of GDP.

## B. VARIATION IN ECONOMIC PARAMETERS

The projections above are sensitive to a variety of economic parameters. Because CBO has not released sensitivity analysis based on the 2023 projections, we examine the sensitivity of the budget projections over a 10-year horizon for the May 2022 baseline using the CBO workbook (2022d), and over a 30-year horizon for the July 2022 Long Term Budget Outlook (2022b).

As CBO (2022d) reports, if annual productivity growth rates were higher (lower) than projected by 0.5 percentage points for each of the next 10 years, the debt-to-GDP ratio would fall (rise) by 10 (11)% of GDP by 2032 under current law. If labor force growth rates were 0.75 percentage points higher (lower) than predicted over the next 10 years, the debt-to-GDP ratio would be higher (lower) by 8 (8)% of GDP by 2032 under current law. If interest rates were 1 percentage point higher (lower) than predicted over the next 10 years, the debt-to-GDP ratio would be higher (lower) by 8 (8)% of GDP by 2032 under current law. If inflation were higher (lower) by 1 percentage point, debt-to-GDP would fall (rise) by 11 (13)% of GDP by 2032 under cur-

rent law. If both interest rates and inflation were higher by 1 percentage point, debt-to-GDP would fall by 4% of GDP by 2032 under current law.

CBO (2022b) reports that if total factor productivity in the non-farm business sector was 0.5 percentage points higher (lower) than in the baseline, federal debt held by the public would be 140 (234) percent of GDP in 2052, compared to the 185 percent of GDP projected under the Long-Term Baseline. If the average nominal government interest rate is boosted by a differential starting at 5 basis points in 2022 and increases by 5 basis points each year (before macroeconomic responses), publicly held debt increases by 50 percentage points to 235 percent of GDP from 185 percent of GDP. On the other hand, if the average nominal government interest rate is decreased by the same differential as above, publicly held debt decreases by 38 percentage points to 147 percent of GDP from 185 percent of GDP.

As an extreme example of how results might differ at the 30-year horizon, we estimate a scenario under current law where the average nominal interest rate paid by the government remains constant through 2053 at the 2023 level projected in the February 2023 baseline. In that scenario, debt rises to 174% of GDP by 2053 and net interest payments rise to 4.7% of GDP. These figures are substantially lower than the 195% debt-to-GDP ratio and 7.2% net interest-to-GDP ratio projected under the current-law baseline with rising interest rates, but they are still substantially higher than the current values of debt and net interest.

### C. 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.

In the current projections, the Social Security (Old-Age and Survivors Insurance) Trust Fund is scheduled to be depleted by 2032 according to CBO, and 2034 according to the Social Security trustees (Board of Trustees, Federal Old Age and Survivors Insurance and Federal Disability Insurance Trust Funds 2022). The Disability Insurance Trust Fund is scheduled to be depleted by 2048 according to CBO, while it is projected to be able to adequately pay full benefits through the 75-year projection period calculated by the Social Security trustees.[7]

According to the CBO, the Medicare Part A (Hospital Insurance) Trust Fund appears likely to hit a similar constraint by 2033; according to the Medicare Trustees the constraint will occur in 2028 (Board of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Trust Funds 2022). Each of those dates may prompt at least limited fiscal action. In each case, legislators will be forced to reduce benefits, raise taxes, make interfund transfers, or allow for general revenue funding. 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.

## VII. Fiscal Gap

In addition to projecting debt and deficits over the 30-year horizon, we also present estimates of the "fiscal gap," an accounting measure that is intended to reflect the long-term budgetary status of the government.[8] The fiscal gap answers the question: if one starts a policy change in a given year to reach a given fiscal 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 combina-

tion of the two) that would be required, holding projected economic performance unchanged? For example, one might ask what immediate and constant-share-of-GDP policy change would be needed to obtain some debt-to-GDP target in 2053.[9] Or, one might ask what constant share-of-GDP change would be required, starting with a delay, say in 2026, or to achieve a real net interest-to-GDP ratio of 2% by 2053.

Results are presented in Table 1. We begin with current-law projections and policy actions taken beginning in 2024. Under those circumstances, obtaining a debt-to-GDP ratio in 2053 equal its 2023 level of approximately 98% would (ignoring any macroeconomic feedback effects) require permanent tax increases or non-interest spending cuts equaling 3.14% of GDP.

This would equal about $824 billion in today's economy and would be the equivalent to a sustained tax increase equal to about 33% of current income tax revenues, a 17% increase in all current tax revenues, a 15% reduction in current non-interest spending, or a 25% reduction in all non-interest spending other than Social Security and Medicare.

Policy makers could choose a net-interest-to-GDP target instead of a debt target. To hold 2050 interest payments equal to 3.2% of GDP – the historical maximum for this ratio, obtained in 1991 – would require policy changes equal to about 3.37% of GDP starting in 2024 under current law.

Furman and Summers (2020) argue that real net interest payments of 2% of GDP would be an appropriate target to stay below to ensure fiscal sustainability. To achieve that goal by 2053 would require fiscal retrenchment of 0.87% of GDP. Furman and Summers also suggest that 150% would be an appropriate debt-to-GDP ratio to stay below. To achieve that target by 2053 would require spending cuts or tax increases equal to 1.48% of GDP.

As Table 1 shows, all of the required policy changes to reach a given target would be larger under the current-policy scenario. Likewise, the fiscal gaps are larger if policy makers delay action, because the debt must be brought down to meet the assumed target over fewer years.[10]

# VIII. Perspectives[11]

If projected trends continue, the US will be in uncharted fiscal waters. From the nation's founding until about 1980, debt as a share of the economy rose only when we were at war or in recession, and it only rose temporarily. After the war or recession ended, the debt-GDP ratio fell rapidly as policy makers ran primary surpluses and interest rates stayed low.

Starting in 1981, Ronald Reagan's tax cuts and defense spending increases raised the debt-GDP ratio during peacetime prosperity. A series of largely bipartisan tax increases and budget deals from 1990 to 1997, along

TABLE 1

## Fiscal Gap

| | Current law beginning | | Current policy beginning | |
|---|---|---|---|---|
| *Target* | *2024* | *2029* | *2024* | *2029* |
| Debt = 98% of GDP | 3.14 | 3.79 | 4.72 | 5.60 |
| Debt = 150% of GDP | 1.42 | 1.75 | 3.01 | 3.56 |
| Net Interest = 3.2% of GDP | 3.62 | 4.31 | 5.15 | 6.11 |

**SOURCE:** CBO Budget and Economic Outlook (2023), authors' calculations

with the "peace dividend" associated with the breakup of the Soviet Union helped turn persistent deficits into surpluses by the end of the century.

Since 2000, however, policy makers appear to have lost interest in addressing long-term fiscal issues. Tax cuts and spending increases under George W. Bush and Donald Trump raised deficits. The Great Recession and the associated temporary stimulus under Barack Obama boosted debt further. The pandemic and associated fiscal responses caused debt to rise again. The Biden Administration has advocated and obtained several additional pieces of legislation that boost deficits further. The debt-to-GDP ratio rose from 39% in 2008 to 70% by 2012 and from 79% in 2019 to 100% in 2020 and has hovered just under that level since then, due to strong growth and low interest rates.

The 21 percentage-point rise in the debt-to-GDP ratio during the pandemic was sizable but not unprecedented. The ratio rose by 30 percentage points over three years during the coupling of World War I with the 1918 flu pandemic and it rose by 64 percentage points over six years during World War II. And as noted above, the ratio rose by 31 percentage points in four years during and after The Great Recession.

But the current economic and budget situation is different than in the past. Relative to pre-1980 debt, current projected debt-to-GDP ratios are higher, and the upward trend in debt is permanent. There is no war or recession that will end and let the budget adjust.

Relative to the early 1980s or even more recent periods, we now face a much higher initial debt level and the headwinds generated by demographics. As a share of GDP, debt was just over a quarter as large in 1981 as it is today (and was only 38% as large as today just 14 years ago). During previous decades, the economy benefitted from the steady influx of baby boomers and women into the labor market. Now, boomers are retiring en masse and women's labor force participation has plateaued, suggesting that future growth prospects are dimming, even if immigration rises again to its pre-pandemic levels.

Policymakers have never had to address the projected permanent imbalances between non-interest spending and taxes, coupled with such high pre-existing debt. The closest historical antecedent occurred after World War II, when the United States faced a debt-to-GDP ratio of 106%. The ratio gradually dwindled to 25% over the ensuing 35 years, aided by three factors between 1945 and 1980: Defense spending declined precipitously as a share of GDP, interest rates on government debt were often below the economic growth rate, and the federal government maintained balanced primary budgets on average over the 1945-1980 period. In contrast, we project sizable, growing, and permanent primary deficits as a share of GDP. These primary deficits are sufficiently large to cause debt to grow inexorably relative to GDP through 2053 despite low (but rising) interest rates, and there is nothing in the projections to suggest that the growth of primary deficits or interest rates will slow after 2053.

Approaching a balanced primary budget through reductions in spending would be much more challenging now than in the earlier post-war period, because of differences in demographics and budget composition. In 1945 and the years that followed, defense spending was an important part of the federal budget, expenditures on Social Security were small, and Medicare and Medicaid did not exist. In fiscal year 2022, federal spending on defense was just 3.1% of GDP, while spending on the three major entitlement programs accounted for 11.0% of GDP and nearly half of non-interest federal spending. Moreover, spending on the entitlement programs is projected to grow faster than GDP over the next three decades, due to population aging and health care cost growth. At the same time, with greater inequality than during the period ending in 1980, there is stronger support for increased spending on social services. One may also conjecture that demand will increase for health insurance coverage, a stronger social safety net, and more redistribution, given the differential impact of both COVID illness itself and the associated economic burdens. In short, the upward pressure on federal spending is much stronger now than in the past.

Reducing the primary deficit through tax increases may prove difficult politically, but there is room to maneuver. If TCJA and other temporary provisions are extended, revenues are projected to average 17.4%

between 2023 and 2053, very much in line with the previous fifty years prior to 2020, when revenues averaged 17.3% of GDP, and well below the value of 19.6% reached in 2022.

Future interest rates are a key determinant of the fiscal outlook. Lower rates unambiguously reduce net interest payments – which, as documented above, are projected to grow rapidly – and improve the federal government's overall fiscal stance – because it is a net borrower. Low interest rates also undermine claims that current debt levels will cause a financial crisis. More generally, to the extent that low interest rates indicate a reduced marginal private return to capital, the opportunity cost of government borrowing falls, making it more attractive to pursue new programs, particularly investments. But if borrowing rises when interest rates are low, and interest rates subsequently rise, the result will be higher interest rates on higher levels of debt (Ball et al.1998) particularly if the rise in interest rates is not accompanied by a sufficiently large increase in the rate of productivity growth (Sheiner 2022).[12]

Finally, the willingness of investors to hold U.S. federal debt at low interest rates depends on their continued confidence as creditors and their perception of Treasury securities as safe assets, even as the debt-GDP ratio climbs well beyond its historical peak. As stressed by Mian, Sufi, and Straub (2022), the feasibility of the government's fiscal trajectory depends in part on how additional borrowing influences the interest rate investors are willing to accept. The CBO projections already incorporate feedback from rising debt to interest rates based on their historical relationship, but there is nothing to ensure that this relationship will not worsen as the debt-GDP ratio heads beyond historical experience.

Although it seems unlikely that the economics of rising US debt will create a crisis anytime soon, policymakers could create an emergency by forcing a default on the country's debt, as some Congressional Republicans threatened to bring about during the debt ceiling standoffs in 2011 and 2013 (Bartlett 2013; Weisman 2013) and are threatening to do now (Rappeport 2023). An intentional debt default would turn out poorly, of course, and would make it harder, not easier, to address the fiscal situation, because it would raise the interest rates that the government had to pay. But even if politicians do not manufacture a crisis, the United States still faces a debt problem. It's just one that's growing gradually. This may be less exciting than a crisis, but it can still be very damaging.

Although the long-term fiscal outlook has not been particularly damaged by recent events, it remains unsustainable and will eventually require federal action. How quickly those actions are needed will depend on many factors, including the path of interest rates.

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# END NOTES

1 Appendix Tables 1, 2, and 3 provide details on the key budgetary aggregates – in dollars and as a percentage of GDP – in the three baselines.

2 The current-law projections do assume that Congress increases or suspends the debt limit as needed to carry out the tax and spending programs in the baseline, that temporary entitlement programs (like SNAP and TANF) are reauthorized on schedule, and that outlays for discretionary spending programs remain constant in real terms over the decade, unless such authority is governed by a specific law. Also, current law projections assume that when the Social Security, Disability, and Medicare (part A) trust funds are exhausted, Congress will (a) authorize full payment of promised benefits and (b) cover any shortfalls with general revenue.

3 CBO 2022a, Tables 5-2 and 5-3. Examples of major expiring provisions in the 2017 tax act include "100 percent bonus depreciation" (expensing of business investment in qualifying equipment), the marginal individual rate cuts, the increased standard deduction, the repeal of personal exemptions, the increased estate and gift tax exemption, the cap on state and local tax deductions, and the 20 percent deduction for certain pass-through income. Examples of expiring provisions outside of the 2017 tax act include tax credits for biodiesel and alternative fuel mixtures and the deduction for mortgage insurance premiums. CBO (2022a, Table 5-3) provides estimates for changes in revenue and net interest payments if other expiring tax provisions were extended. These estimate cover years through 2032. We assume that the costs in 2033 are the same share of GDP as in 2032.

4 The 10-year current-law projections for discretionary spending are uncertain because the law does not specify appropriations over the whole period. Thus, one might argue that not all non-defense discretionary spending requires a population adjustment, implying that our projections are too high. On the other hand, defense spending depends not just on maintaining current services but also responding to the actions of our political adversaries, and so our projections may be too low given the current international environment. There is no way to know for sure, so we follow rules-of-thumb that are both plausible and easy to understand.

5 We calculate the change in net interest payments as follows: For revenue changes through 2032, we use the information on added interest payments reported in CBO (2022a, Table 5-2, 5-3). For revenue changes in 2033, we assume that revenue changes remain a constant share of GDP and calculate the change in net interest payments using the calculated average nominal government interest rate. We similarly allow non-defense discretionary spending to remain constant in real, per-capita terms and calculate changes in net interest using the calculated average nominal government interest rate.

6 CBO (2020) reports the cyclically adjusted deficit, the output gap, and the size of automatic stabilizers (all as a share of GDP) for historical data from 1965-2019 and for projected data for 2020-2030. Regressing the size of automatic stabilizers on the output gap yields a coefficient of about 0.4 (with a t-statistic of about 50), for a sample using the historical data, the projected data, or the combined data (with or without a constant term, which is estimated very precisely to be zero). We use the historical data on cyclically adjusted deficits for 2000-2021. For 2022-2033 we use CBO (2022c) data on actual GDP in 2027, projected GDP for 2022-2033 and estimates of potential GDP for 2020-2033. We estimate the output gap for each year, apply the coefficient noted above to generate the size of automatic stabilizers in that year, which we subtract from the projected unified deficit to generate an estimate of the cyclical-

ly-adjusted deficit.

7 The combined Old-Age, Survivors, and Disability Insurance program is scheduled to have to make forced adjustments by 2035 according to the Social Security Trustees.

8 Auerbach (1994). Auerbach et al. (2003) discuss the relationship between the fiscal gap, generational accounting, accrual accounting, and other ways of accounting for government. Note that estimates of the fiscal gap do not in any way imply that level reductions as a share of GDP are the best way to achieve a given fiscal target, rather than, say, level reductions as a share of primary deficits (which in the present circumstance would imply a growing path of primary deficit reductions). The fiscal gap measure just provides one convenient way to think about the magnitude of a fiscal shortfall, given a future fiscal goal.

9 Implementing the adjustments indicated by the fiscal gap does not stabilize debt after the target year—say 2050; it only adjusts tax and spending trajectories so that the debt hits a target by 2050. Under all the scenarios considered in this paper, the debt-to-GDP ratio would continue rising after hitting the specified target in a specified year.

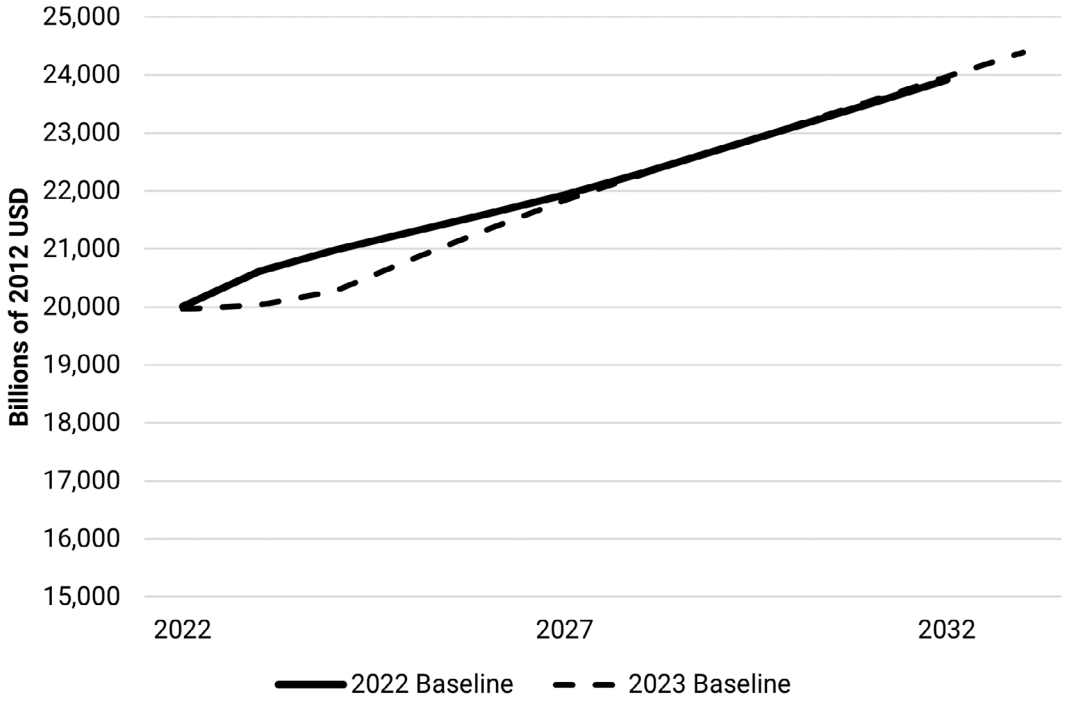
10 Note that the fiscal gap would be larger even if the debt were to be brought down over the same number of years, e.g., if the target date were 2055, because of the growing deficit-GDP ratio.

11 This section is based in part on Auerbach et al. (2019), Auerbach et al. (2020), Auerbach and Gale (2022), and Gale (2019a, 2019b).

12 Mankiw (2022) and Reinhart (2022) provide recent explanations of why interest rates have remained so low for so long. Lower interest rates will also make pre-funding of Social Security and Medicare more difficult. In the past, policymakers have chosen to pre-fund a certain share of these obligations. With lower interest rates, any level of pre-funding will be more difficult to achieve; i.e., it will require higher taxes or lower spending than with higher interest rates. Policymakers will have to choose between imposing higher burdens to reach a given level of prefunding or pre-funding these programs to a lesser extent than in the past.

FIGURE 1

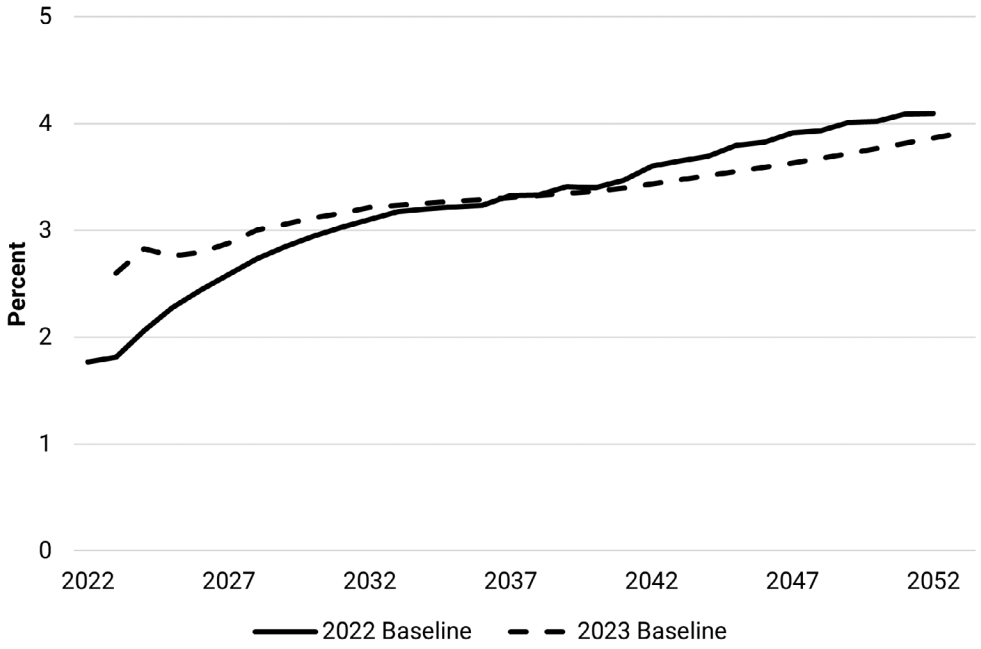
## Real GDP, 2022 - 2033




**SOURCE:** CBO (2022a, 2023)

FIGURE 2

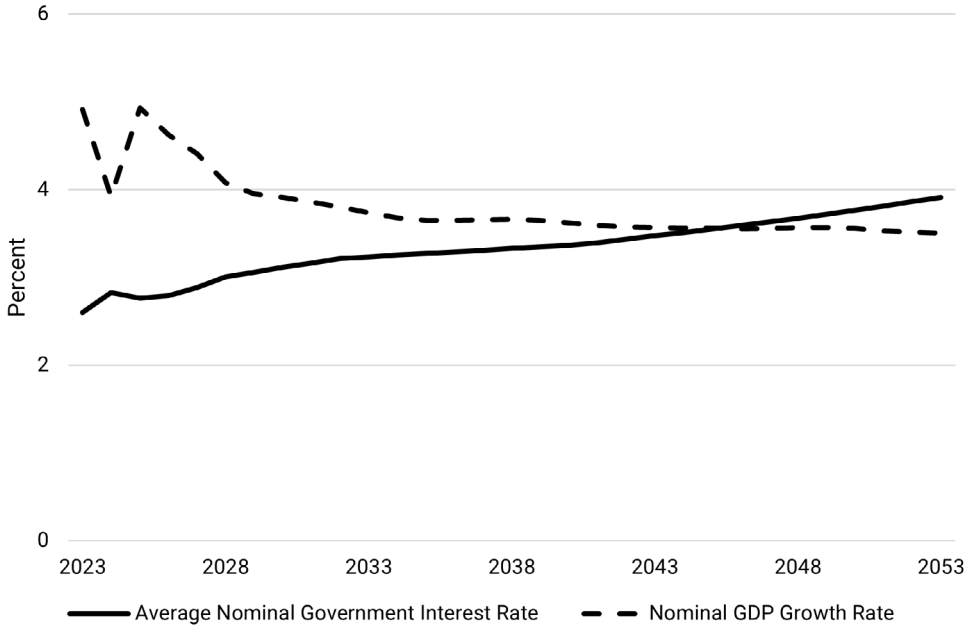
## Average Nominal Government Interest Rate, 2022 - 2053




**SOURCE:** CBO (2023) and authors' calculations.
**NOTE:** Nominal interest rate on government debt is calculated as the ratio of net interest payments to the sum of (a) debt at the end of the prior year and (b) one-half of the primary deficit in the given year.

FIGURE 3

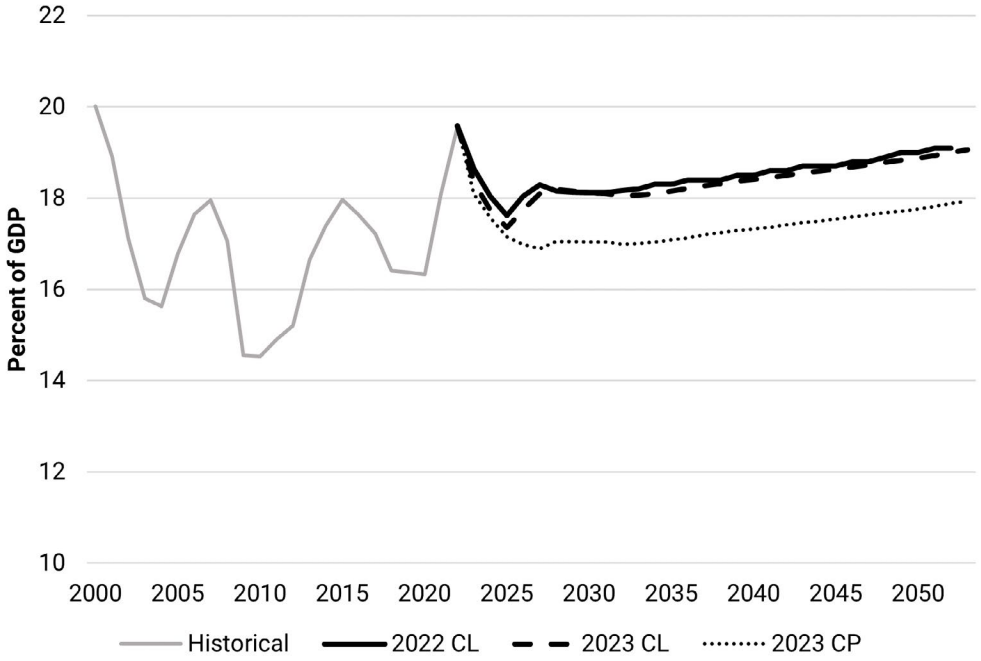
## Nominal Average Government Interest Rate and GDP Growth, 2023 - 2053 (2023 Baseline)




**SOURCE:** CBO (2022a) and authors' calculations.
**NOTE:** Nominal interest rate on government debt is calculated as the ratio of net interest payments to the sum of (a) debt at the end of the prior year and (b) one-half of the primary deficit in the given year.

FIGURE 4

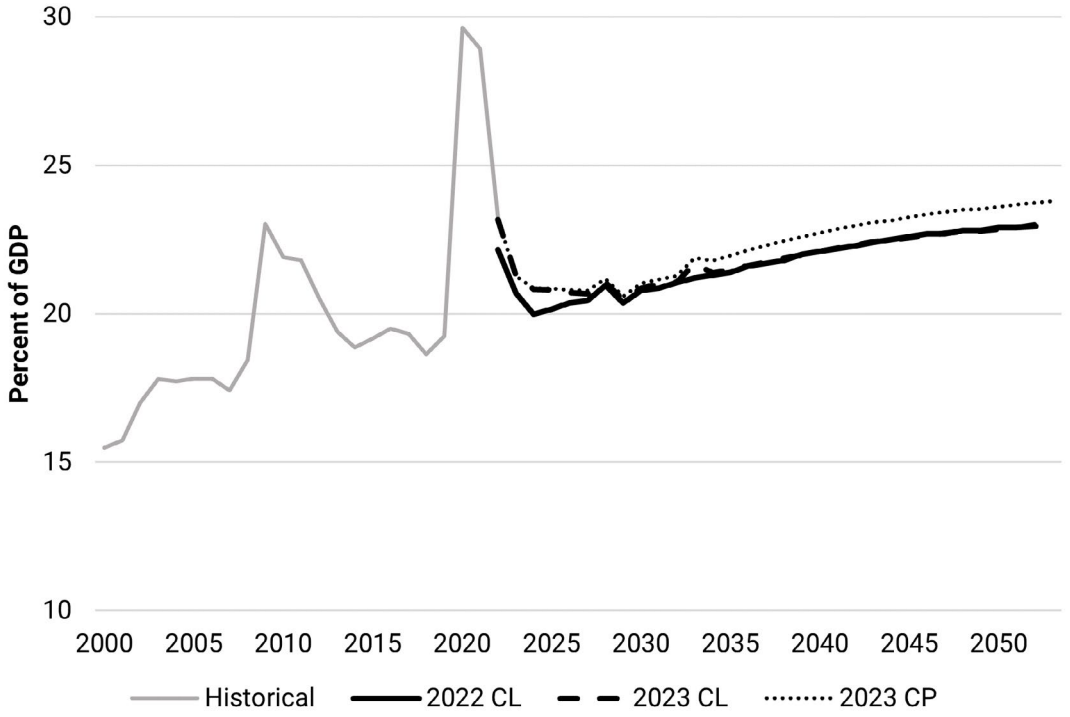
## Total Revenue, 2000 - 2053




**SOURCE:** CBO (2022b, 2023) and authors' calculations.

FIGURE 5

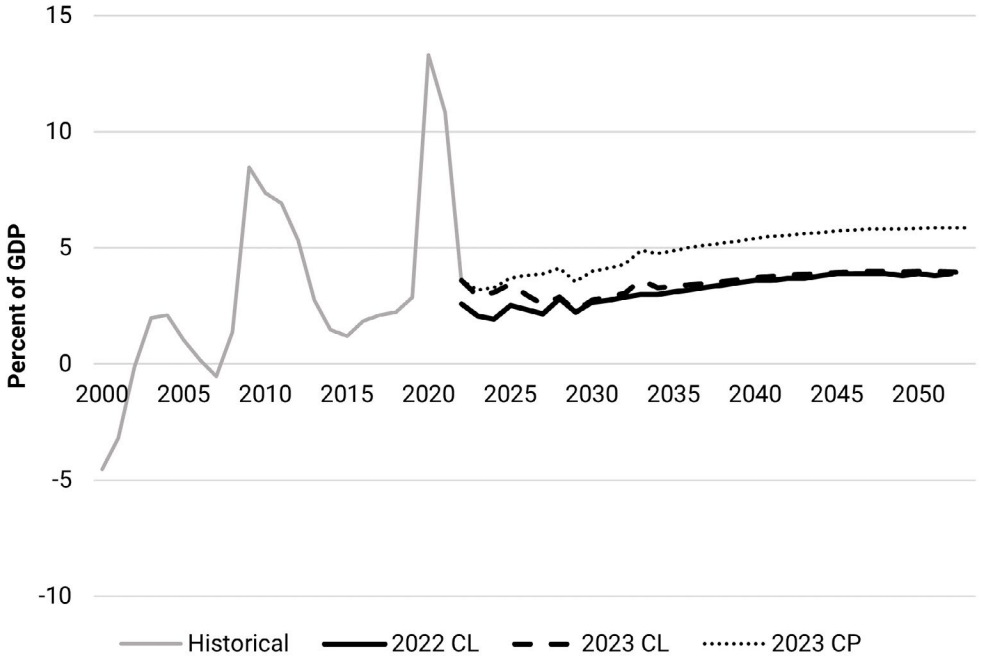
## Non-Interest Spending, 2000 - 2053




**SOURCE:** CBO (2022b, 2023) and authors' calculations.

FIGURE 6

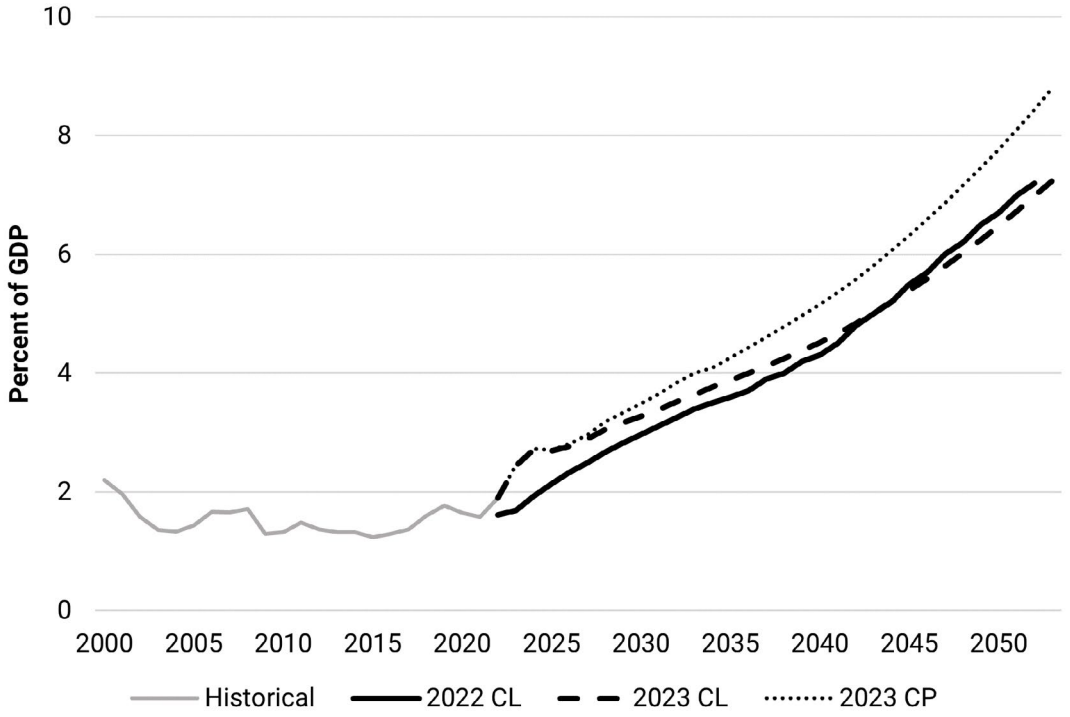
## Primary Deficit, 2000 - 2053




**SOURCE:** CBO (2022b, 2023) and authors' calculations.

FIGURE 7

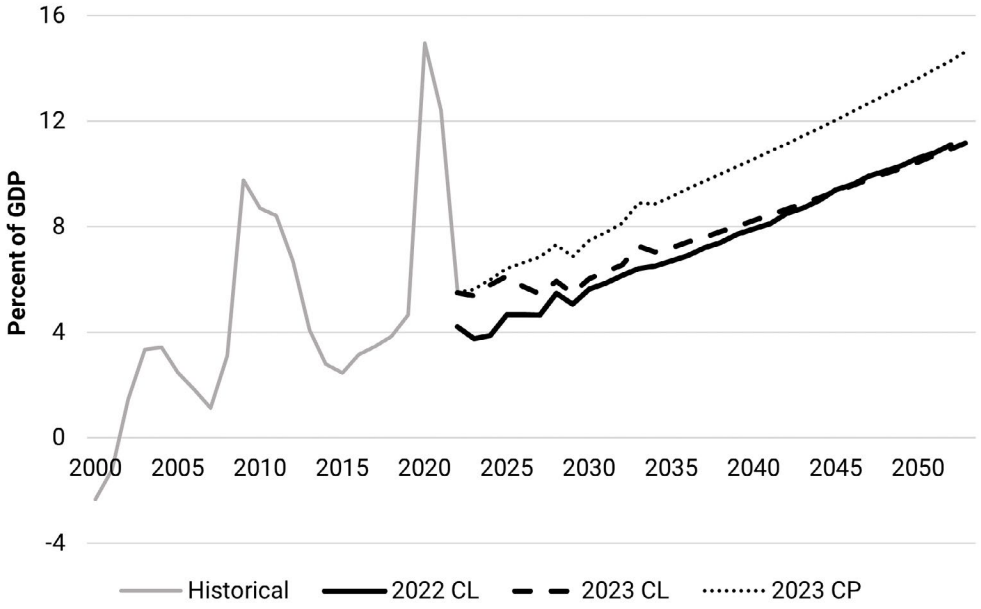
## Net Interest Spending, 2000 - 2053




**SOURCE:** CBO (2022b, 2023) and authors' calculations.

FIGURE 8

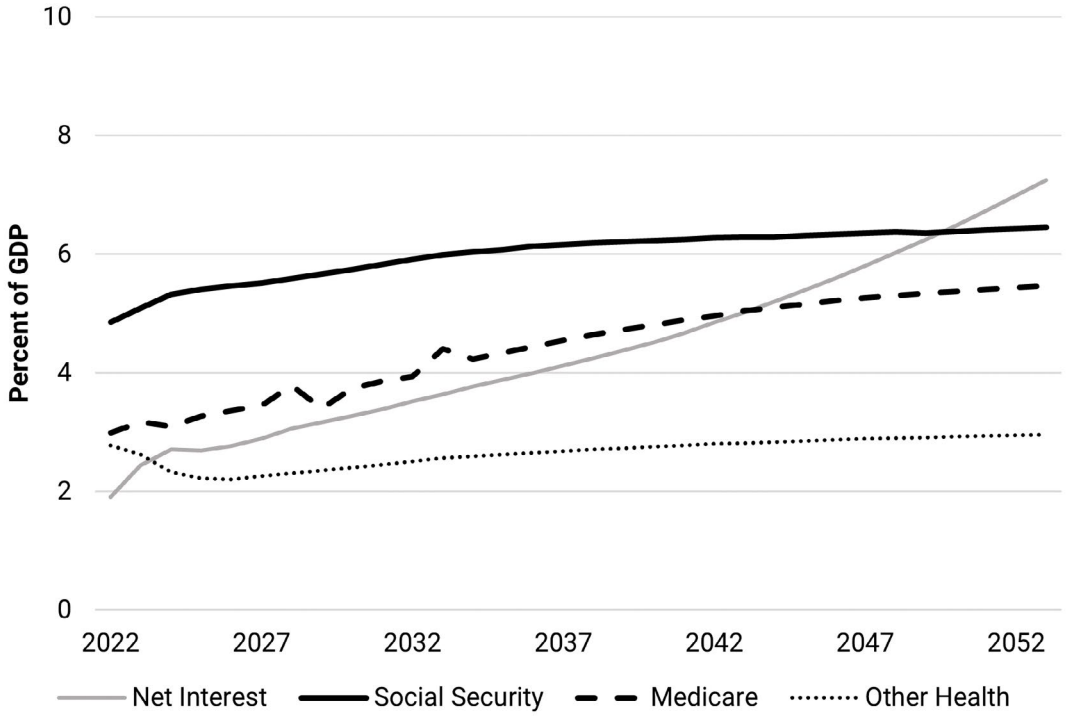
## Unified Deficit, 2000 - 2053




**SOURCE:** CBO (2022b, 2023) and authors' calculations.

FIGURE 9

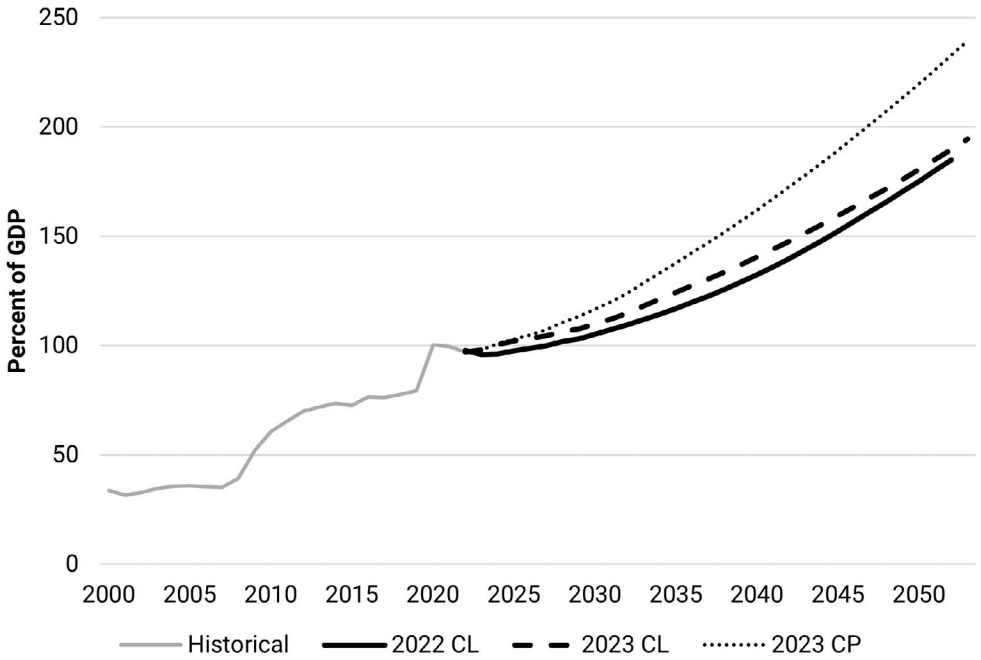
## Major Spending Categories, 2022 - 2053




**SOURCE:** CBO (2023) and authors' calculations.

FIGURE 10

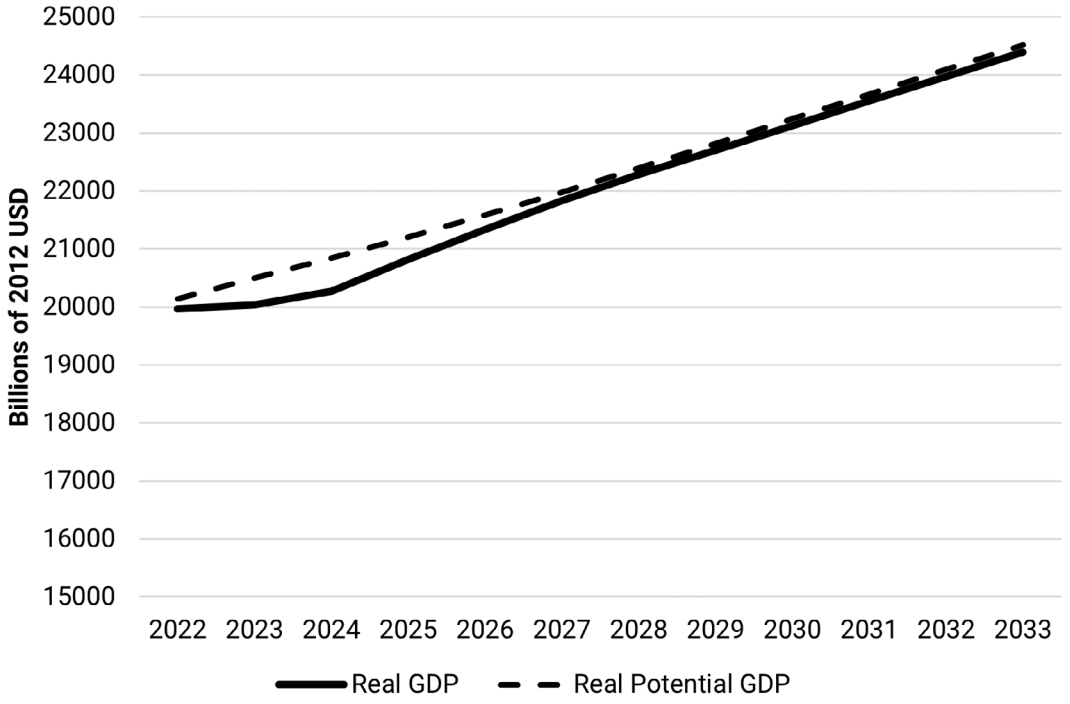
## Public Debt, 2000 - 2053




**SOURCE:** CBO (2022b, 2023) and authors' calculations.

FIGURE 11

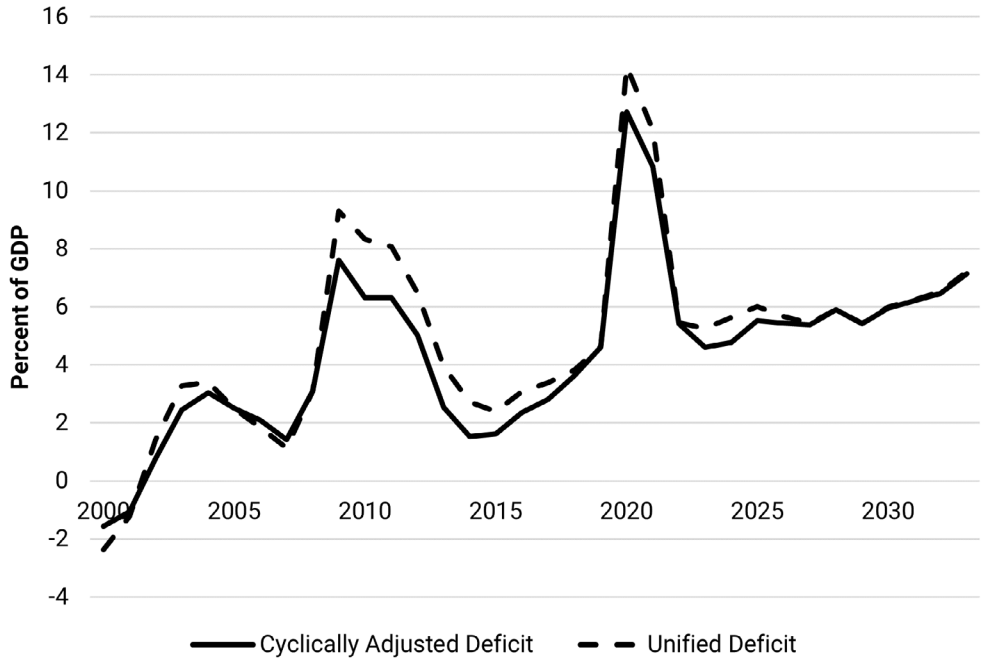
## Real and Real Potential GDP, 2022- 2033




**SOURCE:** CBO (2023) and authors' calculations.

FIGURE 12

## Cyclically Adjusted and Unified Deficit, 2000 - 2033




**SOURCE:** CBO (2022a, 2023), authors' calculations
**NOTE:** CBO (2022a) reports the output gap and the size of the automatic stabilizers (both variables as a share of potential GDP) for the historical data from 1970 – 2021 and for projected data from 2022 – 2032. Regressing the size of the automatic stabilizers on the output gap yields a coefficient of about 0.4, for a sample using the historical data, the projected data, or the combined data (with or without a constant term, which is estimated very precisely to be zero). Thus, using CBO (2023) data on historical and projected GDP and potential GDP for 2022 – 2033, we estimate the output gap for each year, apply the coefficient noted above to generate the size of the automatic stabilizer in that year, which we subtract from the projected unified deficit to generate an estimate of the cyclically-adjusted deficit.

APPENDIX TABLE 1

## Fiscal Gap

| Year | Total Revenue | Non-Interest Spending | Primary Deficit | Net Interest | Unified Deficit | Public Debt |
|---|---|---|---|---|---|---|
| 2022 | 4836.0 | 5472.8 | 636.8 | 399.0 | 1035.8 | 24172.6 |
| | (19.584) | (22.163) | (2.579) | (1.616) | (4.195) | (97.888) |
| 2023 | 4889.6 | 5431.4 | 541.8 | 442.2 | 984.0 | 25192.8 |
| | (18.634) | (20.699) | (2.065) | (1.685) | (3.750) | (96.010) |
| 2024 | 4923.9 | 5454.7 | 530.8 | 525.1 | 1055.9 | 26217.0 |
| | (18.042) | (19.987) | (1.945) | (1.924) | (3.869) | (96.066) |
| 2025 | 4981.5 | 5695.7 | 714.2 | 604.1 | 1318.3 | 27561.1 |
| | (17.621) | (20.146) | (2.526) | (2.137) | (4.663) | (97.489) |
| 2026 | 5279.7 | 5962.4 | 682.7 | 681.1 | 1363.8 | 28925.1 |
| | (18.040) | (20.373) | (2.333) | (2.327) | (4.660) | (98.833) |
| 2027 | 5548.4 | 6201.3 | 652.9 | 756.5 | 1409.4 | 30326.0 |
| | (18.292) | (20.445) | (2.152) | (2.494) | (4.646) | (99.981) |
| 2028 | 5715.6 | 6598.5 | 882.9 | 842.2 | 1725.1 | 32105.1 |
| | (18.153) | (20.957) | (2.804) | (2.675) | (5.479) | (101.964) |
| 2029 | 5934.0 | 6660.1 | 726.1 | 924.6 | 1650.8 | 33760.0 |
| | (18.138) | (20.357) | (2.220) | (2.826) | (5.046) | (103.191) |
| 2030 | 6161.3 | 7066.2 | 904.8 | 1007.4 | 1912.2 | 35808.0 |
| | (18.124) | (20.785) | (2.662) | (2.963) | (5.625) | (105.329) |
| 2031 | 6401.8 | 7370.6 | 968.8 | 1098.6 | 2067.4 | 37949.3 |
| | (18.126) | (20.870) | (2.743) | (3.111) | (5.854) | (107.451) |
| 2032 | 6662.1 | 7721.7 | 1059.6 | 1193.6 | 2253.3 | 40212.9 |
| | (18.163) | (21.051) | (2.889) | (3.254) | (6.143) | (109.633) |
| 2033 | 6930.7 | 8073.2 | 1142.4 | 1294.8 | 2437.2 | 42650.7 |
| | (18.200) | (21.200) | (3.000) | (3.400) | (6.400) | (112.000) |
| 2034 | 7232.0 | 8417.5 | 1185.6 | 1383.2 | 2568.7 | 45209.7 |
| | (18.300) | (21.300) | (3.000) | (3.500) | (6.500) | (114.400) |
| 2035 | 7502.3 | 8773.1 | 1270.9 | 1475.9 | 2746.7 | 47965.3 |
| | (18.300) | (21.400) | (3.100) | (3.600) | (6.700) | (117.000) |
| 2036 | 7822.6 | 9183.0 | 1360.4 | 1573.0 | 2933.5 | 50931.8 |
| | (18.400) | (21.600) | (3.200) | (3.700) | (6.900) | (119.800) |

APPENDIX TABLE 1 CONT.

| Year | Total Revenue | Non-Interest Spending | Primary Deficit | Net Interest | Unified Deficit | Public Debt |
|---|---|---|---|---|---|---|
| 2037 | 8109.6 | 9564.1 | 1454.4 | 1718.9 | 3173.3 | 54078.8 |
| | (18.400) | (21.700) | (3.300) | (3.900) | (7.200) | (122.700) |
| 2038 | 8405.1 | 9958.2 | 1553.1 | 1827.2 | 3380.3 | 57465.4 |
| | (18.400) | (21.800) | (3.400) | (4.000) | (7.400) | (125.800) |
| 2039 | 8757.0 | 10413.7 | 1656.7 | 1988.1 | 3644.8 | 61109.5 |
| | (18.500) | (22.000) | (3.500) | (4.200) | (7.700) | (129.100) |
| 2040 | 9071.5 | 10836.7 | 1765.3 | 2108.5 | 3873.8 | 64971.4 |
| | (18.500) | (22.100) | (3.600) | (4.300) | (7.900) | (132.500) |
| 2041 | 9445.5 | 11273.6 | 1828.2 | 2285.2 | 4113.3 | 69114.3 |
| | (18.600) | (22.200) | (3.600) | (4.500) | (8.100) | (136.100) |
| 2042 | 9780.1 | 11725.6 | 1945.5 | 2523.9 | 4469.4 | 73560.8 |
| | (18.600) | (22.300) | (3.700) | (4.800) | (8.500) | (139.900) |
| 2043 | 10180.8 | 12195.2 | 2014.4 | 2722.2 | 4736.5 | 78343.5 |
| | (18.700) | (22.400) | (3.700) | (5.000) | (8.700) | (143.900) |
| 2044 | 10541.6 | 12683.7 | 2142.1 | 2931.3 | 5073.5 | 83430.6 |
| | (18.700) | (22.500) | (3.800) | (5.200) | (9.000) | (148.000) |
| 2045 | 10915.4 | 13191.8 | 2276.5 | 3210.4 | 5486.9 | 88899.0 |
| | (18.700) | (22.600) | (3.900) | (5.500) | (9.400) | (152.300) |
| 2046 | 11363.5 | 13720.8 | 2357.3 | 3445.3 | 5802.6 | 94715.7 |
| | (18.800) | (22.700) | (3.900) | (5.700) | (9.600) | (156.700) |
| 2047 | 11767.7 | 14208.8 | 2441.2 | 3755.6 | 6196.8 | 100901.5 |
| | (18.800) | (22.700) | (3.900) | (6.000) | (9.900) | (161.200) |
| 2048 | 12251.7 | 14779.9 | 2528.1 | 4019.1 | 6547.2 | 107478.2 |
| | (18.900) | (22.800) | (3.900) | (6.200) | (10.100) | (165.800) |
| 2049 | 12755.1 | 15306.1 | 2551.0 | 4363.6 | 6914.6 | 114460.1 |
| | (19.000) | (22.800) | (3.800) | (6.500) | (10.300) | (170.500) |
| 2050 | 13207.7 | 15918.7 | 2711.0 | 4657.4 | 7368.5 | 121788.5 |
| | (19.000) | (22.900) | (3.900) | (6.700) | (10.600) | (175.200) |
| 2051 | 13746.3 | 16481.1 | 2734.9 | 5037.9 | 7772.8 | 129618.0 |
| | (19.100) | (22.900) | (3.800) | (7.000) | (10.800) | (180.100) |
| 2052 | 14230.5 | 17136.2 | 2905.7 | 5364.4 | 8270.1 | 137834.3 |
| | (19.100) | (23.000) | (3.900) | (7.200) | (11.100) | (185.000) |

APPENDIX TABLE 2

## 2023 Current Law Baseline

| Year | Total Revenue | Non-Interest Spending | Primary Deficit | Net Interest | Unified Deficit | Public Debt |
|---|---|---|---|---|---|---|
| 2022 | 4896.1 | 5796.4 | 900.3 | 475.1 | 1375.4 | 24256.8 |
| | (19.577) | (23.177) | (3.600) | (1.900) | (5.500) | (96.991) |
| 2023 | 4811.7 | 5581.5 | 769.8 | 639.9 | 1409.8 | 25716.1 |
| | (18.339) | (21.273) | (2.934) | (2.439) | (5.373) | (98.011) |
| 2024 | 4838.4 | 5676.2 | 837.7 | 738.6 | 1576.3 | 27370.2 |
| | (17.745) | (20.818) | (3.072) | (2.709) | (5.781) | (100.381) |
| 2025 | 4966.4 | 5950.0 | 983.6 | 768.6 | 1752.3 | 29214.1 |
| | (17.359) | (20.797) | (3.438) | (2.687) | (6.125) | (102.111) |
| 2026 | 5309.9 | 6197.6 | 887.7 | 828.0 | 1715.7 | 30926.8 |
| | (17.740) | (20.705) | (2.966) | (2.766) | (5.732) | (103.322) |
| 2027 | 5654.6 | 6458.1 | 803.6 | 902.7 | 1706.3 | 32645.3 |
| | (18.094) | (20.665) | (2.571) | (2.889) | (5.460) | (104.461) |
| 2028 | 5916.2 | 6850.4 | 934.2 | 994.6 | 1928.7 | 34641.5 |
| | (18.190) | (21.062) | (2.872) | (3.058) | (5.930) | (106.506) |
| 2029 | 6139.0 | 6915.1 | 776.0 | 1071.2 | 1847.2 | 36406.0 |
| | (18.157) | (20.452) | (2.295) | (3.168) | (5.463) | (107.676) |
| 2030 | 6364.2 | 7329.9 | 965.7 | 1149.3 | 2115.1 | 38604.4 |
| | (18.115) | (20.863) | (2.749) | (3.271) | (6.020) | (109.882) |
| 2031 | 6602.8 | 7657.6 | 1054.8 | 1236.3 | 2291.1 | 40944.7 |
| | (18.096) | (20.987) | (2.891) | (3.388) | (6.279) | (112.215) |
| 2032 | 6837.5 | 7983.9 | 1146.4 | 1333.4 | 2479.8 | 43482.3 |
| | (18.053) | (21.080) | (3.027) | (3.521) | (6.548) | (114.807) |
| 2033 | 7097.7 | 8519.7 | 1422.0 | 1428.7 | 2850.6 | 46445.3 |
| | (18.066) | (21.685) | (3.619) | (3.636) | (7.256) | (118.217) |
| 2034 | 7372.5 | 8707.3 | 1334.8 | 1533.6 | 2868.3 | 49397.8 |
| | (18.100) | (21.377) | (3.277) | (3.765) | (7.042) | (121.275) |
| 2035 | 7665.6 | 9066.8 | 1401.2 | 1638.5 | 3039.7 | 52494.0 |
| | (18.157) | (21.476) | (3.319) | (3.881) | (7.200) | (124.339) |
| 2036 | 7967.1 | 9458.8 | 1491.7 | 1750.3 | 3242.1 | 55764.4 |
| | (18.207) | (21.616) | (3.409) | (4.000) | (7.409) | (127.437) |

APPENDIX TABLE 2 CONT.

| Year | Total Revenue | Non-Interest Spending | Primary Deficit | Net Interest | Unified Deficit | Public Debt |
|---|---|---|---|---|---|---|
| 2037 | 8287.9 | 9861.8 | 1573.9 | 1871.0 | 3445.0 | 59209.4 |
| | (18.272) | (21.742) | (3.470) | (4.125) | (7.595) | (130.537) |
| 2038 | 8614.4 | 10285.0 | 1670.6 | 1998.3 | 3668.9 | 62878.8 |
| | (18.321) | (21.874) | (3.553) | (4.250) | (7.803) | (133.730) |
| 2039 | 8954.1 | 10719.3 | 1765.2 | 2133.1 | 3898.3 | 66777.2 |
| | (18.373) | (21.995) | (3.622) | (4.377) | (7.999) | (137.020) |
| 2040 | 9294.8 | 11165.3 | 1870.5 | 2280.0 | 4150.5 | 70928.5 |
| | (18.406) | (22.110) | (3.704) | (4.515) | (8.219) | (140.456) |
| 2041 | 9650.9 | 11625.1 | 1974.2 | 2442.4 | 4416.6 | 75345.5 |
| | (18.449) | (22.223) | (3.774) | (4.669) | (8.443) | (144.033) |
| 2042 | 10023.4 | 12093.1 | 2069.7 | 2624.0 | 4693.6 | 80039.5 |
| | (18.500) | (22.320) | (3.820) | (4.843) | (8.663) | (147.728) |
| 2043 | 10411.1 | 12579.2 | 2168.2 | 2818.0 | 4986.1 | 85026.3 |
| | (18.554) | (22.418) | (3.864) | (5.022) | (8.886) | (151.529) |
| 2044 | 10802.4 | 13061.2 | 2258.8 | 3024.7 | 5283.5 | 90309.9 |
| | (18.589) | (22.476) | (3.887) | (5.205) | (9.092) | (155.407) |
| 2045 | 11215.3 | 13581.6 | 2366.3 | 3247.3 | 5613.6 | 95924.3 |
| | (18.636) | (22.568) | (3.932) | (5.396) | (9.328) | (159.394) |
| 2046 | 11644.0 | 14112.4 | 2468.4 | 3486.7 | 5955.1 | 101879.9 |
| | (18.685) | (22.646) | (3.961) | (5.595) | (9.556) | (163.485) |
| 2047 | 12088.6 | 14660.4 | 2571.7 | 3745.6 | 6317.3 | 108198.3 |
| | (18.732) | (22.717) | (3.985) | (5.804) | (9.789) | (167.659) |
| 2048 | 12559.1 | 15221.9 | 2662.7 | 4024.2 | 6686.9 | 114885.7 |
| | (18.791) | (22.775) | (3.984) | (6.021) | (10.005) | (171.892) |
| 2049 | 13032.6 | 15773.7 | 2741.1 | 4322.1 | 7063.1 | 121949.3 |
| | (18.828) | (22.788) | (3.960) | (6.244) | (10.204) | (176.178) |
| 2050 | 13529.4 | 16378.0 | 2848.5 | 4643.4 | 7491.9 | 129441.0 |
| | (18.875) | (22.849) | (3.974) | (6.478) | (10.452) | (180.584) |
| 2051 | 14049.9 | 17002.6 | 2952.8 | 4992.0 | 7944.7 | 137387.1 |
| | (18.933) | (22.912) | (3.979) | (6.727) | (10.706) | (185.137) |
| 2052 | 14595.9 | 17630.9 | 3035.0 | 5366.4 | 8401.4 | 145789.0 |
| | (19.001) | (22.952) | (3.951) | (6.986) | (10.937) | (189.789) |
| 2053 | 15150.9 | 18282.7 | 3131.8 | 5763.5 | 8895.3 | 154684.4 |
| | (19.056) | (22.995) | (3.939) | (7.249) | (11.188) | (194.554) |

APPENDIX TABLE 3

## 2023 Current Policy Baseline

| Year | Total Revenue | Non-Interest Spending | Primary Deficit | Net Interest | Unified Deficit | Public Debt |
|---|---|---|---|---|---|---|
| 2022 | 4896.1 | 5796.4 | 900.3 | 475.1 | 1375.4 | 24256.8 |
| | (19.577) | (23.177) | (3.600) | (1.900) | (5.500) | (96.991) |
| 2023 | 4747.7 | 5581.5 | 833.8 | 640.9 | 1474.8 | 25781.1 |
| | (18.095) | (21.273) | (3.178) | (2.443) | (5.621) | (98.259) |
| 2024 | 4788.4 | 5684.2 | 895.8 | 741.6 | 1637.3 | 27496.3 |
| | (17.562) | (20.847) | (3.285) | (2.720) | (6.005) | (100.844) |
| 2025 | 4906.4 | 5966.9 | 1060.6 | 773.6 | 1834.2 | 29422.1 |
| | (17.149) | (20.856) | (3.707) | (2.704) | (6.411) | (102.838) |
| 2026 | 5081.9 | 6221.7 | 1139.8 | 842.0 | 1981.8 | 31400.8 |
| | (16.978) | (20.786) | (3.808) | (2.813) | (6.621) | (104.906) |
| 2027 | 5277.6 | 6490.1 | 1212.5 | 926.7 | 2139.2 | 33552.3 |
| | (16.888) | (20.767) | (3.880) | (2.965) | (6.845) | (107.363) |
| 2028 | 5546.2 | 6890.0 | 1343.8 | 1034.6 | 2378.3 | 35998.1 |
| | (17.052) | (21.184) | (4.131) | (3.181) | (7.312) | (110.677) |
| 2029 | 5766.0 | 6962.1 | 1196.0 | 1128.2 | 2324.2 | 38239.6 |
| | (17.054) | (20.591) | (3.537) | (3.337) | (6.874) | (113.099) |
| 2030 | 5985.2 | 7384.9 | 1399.7 | 1225.3 | 2625.0 | 40948.0 |
| | (17.036) | (21.020) | (3.984) | (3.488) | (7.472) | (116.552) |
| 2031 | 6214.8 | 7721.1 | 1506.3 | 1333.3 | 2839.6 | 43836.7 |
| | (17.033) | (21.161) | (4.128) | (3.654) | (7.782) | (120.141) |
| 2032 | 6434.5 | 8055.8 | 1621.3 | 1454.4 | 3075.8 | 46970.2 |
| | (16.989) | (21.270) | (4.281) | (3.840) | (8.121) | (124.017) |
| 2033 | 6679.7 | 8600.4 | 1920.7 | 1572.8 | 3493.5 | 50576.1 |
| | (17.002) | (21.891) | (4.889) | (4.003) | (8.892) | (128.732) |
| 2034 | 6938.6 | 8873.8 | 1935.2 | 1666.3 | 3601.5 | 54261.9 |
| | (17.035) | (21.786) | (4.751) | (4.091) | (8.842) | (133.217) |
| 2035 | 7214.5 | 9270.7 | 2056.2 | 1799.7 | 3856.0 | 58174.3 |
| | (17.088) | (21.959) | (4.870) | (4.263) | (9.133) | (137.794) |
| 2036 | 7498.2 | 9693.7 | 2195.5 | 1938.5 | 4134.1 | 62336.8 |
| | (17.135) | (22.153) | (5.017) | (4.430) | (9.447) | (142.457) |
| 2037 | 7800.1 | 10120.3 | 2320.2 | 2087.6 | 4407.7 | 66744.6 |
| | (17.197) | (22.312) | (5.115) | (4.602) | (9.718) | (147.149) |

APPENDIX TABLE 3 CONT.

| Year | Total Revenue | Non-Interest Spending | Primary Deficit | Net Interest | Unified Deficit | Public Debt |
|---|---|---|---|---|---|---|
| 2038 | 8107.4 | 10560.4 | 2453.0 | 2248.9 | 4701.9 | 71446.9 |
| | (17.243) | (22.460) | (5.217) | (4.783) | (10.000) | (151.953) |
| 2039 | 8427.2 | 11011.7 | 2584.5 | 2420.8 | 5005.3 | 76452.3 |
| | (17.292) | (22.595) | (5.303) | (4.967) | (10.270) | (156.872) |
| 2040 | 8747.8 | 11476.3 | 2728.5 | 2603.4 | 5331.9 | 81785.0 |
| | (17.323) | (22.726) | (5.403) | (5.155) | (10.558) | (161.954) |
| 2041 | 9082.9 | 11954.6 | 2871.7 | 2802.2 | 5673.9 | 87459.3 |
| | (17.363) | (22.853) | (5.490) | (5.357) | (10.846) | (167.190) |
| 2042 | 9433.5 | 12443.0 | 3009.5 | 3021.4 | 6030.9 | 93490.6 |
| | (17.411) | (22.966) | (5.555) | (5.577) | (11.131) | (172.554) |
| 2043 | 9798.3 | 12949.5 | 3151.2 | 3265.9 | 6417.0 | 99908.3 |
| | (17.462) | (23.078) | (5.616) | (5.820) | (11.436) | (178.051) |
| 2044 | 10166.7 | 13453.4 | 3286.7 | 3527.6 | 6814.3 | 106722.7 |
| | (17.495) | (23.151) | (5.656) | (6.070) | (11.726) | (183.650) |
| 2045 | 10555.2 | 13997.3 | 3442.1 | 3807.2 | 7249.3 | 113972.7 |
| | (17.539) | (23.259) | (5.720) | (6.326) | (12.046) | (189.384) |
| 2046 | 10958.7 | 14551.7 | 3592.9 | 4109.0 | 7701.9 | 121675.1 |
| | (17.585) | (23.351) | (5.766) | (6.594) | (12.359) | (195.250) |
| 2047 | 11377.2 | 15124.3 | 3747.1 | 4433.7 | 8180.8 | 129857.1 |
| | (17.630) | (23.436) | (5.806) | (6.870) | (12.677) | (201.220) |
| 2048 | 11820.0 | 15711.7 | 3891.7 | 4785.3 | 8677.0 | 138534.5 |
| | (17.685) | (23.508) | (5.823) | (7.160) | (12.983) | (207.275) |
| 2049 | 12265.6 | 16290.7 | 4025.1 | 5163.8 | 9188.9 | 147723.8 |
| | (17.720) | (23.535) | (5.815) | (7.460) | (13.275) | (213.414) |
| 2050 | 12733.2 | 16922.6 | 4189.4 | 5569.8 | 9759.2 | 157482.9 |
| | (17.764) | (23.609) | (5.845) | (7.770) | (13.615) | (219.705) |
| 2051 | 13223.0 | 17576.2 | 4353.2 | 6009.1 | 10362.2 | 167846.5 |
| | (17.819) | (23.685) | (5.866) | (8.098) | (13.964) | (226.183) |
| 2052 | 13736.9 | 18234.6 | 4497.7 | 6485.9 | 10983.6 | 178830.6 |
| | (17.883) | (23.738) | (5.855) | (8.443) | (14.299) | (232.803) |
| 2053 | 14259.2 | 18918.6 | 4659.4 | 6998.9 | 11658.3 | 190489.0 |
| | (17.934) | (23.795) | (5.860) | (8.803) | (14.663) | (239.587) |

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