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Deficit Spending During Higher Inflation and Interest Rates: Implications for Debt Sustainability

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SUMMARY

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Deficit Spending During Higher Inflation and Interest Rates: Implications for Debt Sustainability

Expansionary fiscal policy (an increase in the budget deficit through an increase in government spending, decrease in tax revenue, or some combination of both) can be an important tool in stimulating economic activity, particularly as economic growth declines. For example, unemployment tends to increase during such a downturn, further dampening private spending and growth. Boosting government spending during such a period can allow employers to hire more employees and pay them higher wages. Without adequate stimulus, the productive capacity of the economy could be affected in the long term. To do this effectively, the government must, if already running a budget deficit, increase the size of its deficit and borrow money to finance that stimulus. Running a budget deficit increases the amount of government debt, and increasing a deficit increases the rate that debt is growing.

While deficit spending can be an effective policy tool, it also comes with certain potential tradeoffs. Expansionary fiscal policy is generally thought to have certain outcomes that can reduce its effectiveness in the short term, including crowding out investment and other interest-sensitive spending, decreasing net exports, and increasing inflation. Persistently applying fiscal stimulus across the business cycle can negatively affect the economy in the long term. Persistent fiscal stimulus—particularly during economic expansions—can limit long-term economic growth by crowding out private investment. Additionally, rising debt requires a growing portion of the federal budget to be directed toward interest payments on the debt, potentially crowding out government spending on other projects and programs.

Higher interest rates can exacerbate the potential negative effects of deficit spending. They directly increase interest payments on newly issued debt, in turn increasing net interest outlays and potentially resulting in more borrowing to cover those increased costs. Higher interest rates can also decrease interest-sensitive spending and net exports in the economy, both of which work to lower GDP. Higher net interest outlays and slowed GDP growth both result in rising deficit and debt-to-GDP ratios. While GDP growth has been uneven in recent quarters, net interest outlays and the debt-to-GDP ratio have been increasing and are expected to continue to rise.

For most of the past 40 years, the federal government has run a budget deficit and added to the stock of publicly held debt. When compared to the size of the overall economy, the growth of relative size of the deficit and debt has been uneven, rising and sometimes falling as a result of various changes in economic conditions and tax and spending policies. Notably, in recent years, both the deficit-to-GDP and debt-to-GDP ratios have grown considerably, largely as a result of spending during the COVID-19 pandemic. Prior to COVID-19, the downside tradeoffs of deficit spending had arguably not been fully realized, because inflation and interest rates remained low despite persistent deficits. However, inflation and interest rates are both higher currently than prior to the pandemic, in part as a result of large deficits and growing debt. As a share of GDP, servicing the debt has increased since the pandemic and the increase in inflation. Even though some fiscal stimulus has been removed since 2020, the deficit-to-GDP ratio remains large by historical standards, particularly when compared to other economic expansions.

These recent changes and trends in economic conditions has brought the question of debt sustainability back to the forefront of several policy debates. Of particular concern is that the new interest rate environment could accelerate the timeline for reaching a “tipping point” where GDP growth is persistently and adversely affected or a default on the debt (a scenario in which the government would not be able to fully pay lenders) becomes imminent.

There is not a consensus among economists about if or at what level a “tipping point” at which debt becomes unsustainable would occur, but some estimates range from debt-to-GDP ratios of 80% to 200% and beyond. For context, the Congressional Budget Office currently projects the publicly held debt-to-GDP ratio to reach 100.4% in FY2024 and 180.6% by FY2053. Recent research into this topic generally points to the current projected path of fiscal policy and publicly held debt to be eventually unsustainable absent policy action or a change in economic conditions.

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Introduction

In recent years, the U.S. economy has experienced a fundamental shift from the paradigms of previous decades. Prior to the COVID-19 pandemic, inflation was low and stable despite conditions that were traditionally thought to spur inflation, including low unemployment, low interest rates, and periods of large budget deficits—when government spending was much larger than revenue.[1] As the pandemic has receded, inflation and interest rates have seemingly been more sensitive to these factors. After being persistently low for many years, inflation began rising in 2021, reaching highs not seen since the 1980s. Partially as a result of this shift in inflation and the monetary policy response to it, interest rates have also risen. While inflation has come down from its 2022 peak, it remains higher than its previous trend and above the policy target of 2%. While the causes of recent inflation are complex and not the result of any one single factor, this period has caused economists to reconsider the sensitivity of prices to certain phenomena, notably changes in employment and fiscal and monetary policy.

This report focuses on federal fiscal policy—government spending and tax policy—and how its effects on the economy have changed (in practice or in perception) in light of higher inflation and interest rates. This report outlines the ways in which expansionary fiscal policy (i.e., deficit spending) can be an important economic tool but can also have negative macroeconomic effects in the short and long run when applied persistently across the business cycle. It then focuses on recent fiscal trends and projections in the context of current economic conditions, which may be exacerbating some of the negative effects of persistent deficit spending, helping to further drive up annual deficits and the debt-to-GDP ratio. This has renewed concerns about the sustainability of the federal government's debt and the timeline for potentially reaching a tipping point at which the level of debt becomes unsustainable. As such, the report concludes with a discussion of the sustainability of the U.S. fiscal path and the potential tradeoffs and complications faced by policymakers in terms of decreasing the deficit and debt relative to the size of the economy.

Fiscal Policy and Economic Theory

To stimulate the economy, the government can increase spending, decrease tax revenue, or use some combination of both.[2] Known as expansionary fiscal policy, increases to government spending or tax cuts increase aggregate demand (total spending). Increasing government spending directly increases aggregate demand, while tax cuts indirectly increase aggregate demand by increasing disposable personal income, which in turn increases consumption.[3] However, to do this, the government must increase the size of its budget deficit and borrow money to finance that stimulus, which will increase the government's debt.[4]

[1] Brookings Institution, "What's (Not) Up with Inflation?," October 3, 2019, https://www.brookings.edu/wp-content/uploads/2019/10/es_20191003_inflation_transcript.pdf.

[2] Some types of stimulus are generally more effective than others. For more details, see CRS Report R45780, *Fiscal Policy Considerations for the Next Recession*, by Mark P. Keightley.

[3] For more details on fiscal policy and its effects on the economy, see CRS In Focus IF11253, *Introduction to U.S. Economy: Fiscal Policy*, by Lida R. Weinstock.

[4] If the government is running a budget surplus at the time of spending increases or tax cuts, such policy could be financed by reducing the size of the surplus or by starting deficit spending and borrowing money, depending on the size of the stimulus.

Benefits of Expansionary Fiscal Policy

Expansionary fiscal policy can stimulate economic activity during an economic downturn (recession), as described above. As the economy shrinks, people lose their jobs and wage growth slows, further dampening spending and growth. It can be crucial to a recovery to provide stimulus to boost overall spending, which can occur through either expansionary fiscal or monetary policy. When spending in the economy increases, employers are able to hire more employees and pay them higher wages. If not enough stimulus is provided and the recession is deep and long, the supply of labor, productivity rates, and capital accumulation rates may never fully recover. This could cause growth in gross domestic product (GDP) to be on a permanently lower trajectory.

The Relationship Between Fiscal Policy and Debt

As discussed previously, a budget deficit occurs when the government's expenditures are larger than its revenues. The U.S. government has generally run budget deficits for more than 40 years, with the exception of four years in the late 1990s and early 2000s, when it ran budget surpluses. A budget surplus occurs when the government receives more in revenues than it spends in outlays. The budget deficit or surplus is measured in terms of a given fiscal year.

Federal debt is a measure of how much money the government owes to various debt holders. Budget deficits increase publicly held federal debt levels as the government borrows money to cover the difference in revenues and outlays in a given fiscal year.[5] As debt increases over time, this can result in further increases in deficit spending as the government pays interest on its stock of debt.[6]

Short-Term Risks of Expansionary Fiscal Policy

Expansionary fiscal policy is generally thought to have certain outcomes that can reduce its effectiveness in the short term, including crowding out investment and other interest-sensitive spending, decreasing net exports, and increasing inflation.[7]

Rising Interest Rate Risk

When the government borrows money to finance deficits, it does so from a supply of "loanable funds," meaning the money available from savers and investors who choose to lend the money to the government or private parties. When the government increases its borrowing of these funds, demand for the funds increases and, subsequently, so does the interest rate (the price of borrowing the funds). Rising interest rates can crowd out private investment as it becomes more expensive for firms to borrow and invest in capital.[8] Rising interest rates can also decrease interest-sensitive consumer spending, such as purchases of houses, cars, or large appliances.[9] The Federal Reserve (Fed) can use monetary policy and attempt to offset this, if it desires, by lowering the targeted federal funds rate, but the Fed's ability to affect private longer-term interest rates used to finance investment and consumer durables is limited.

[5] This report focuses solely on federal debt that is held by the public and does not include discussion of intragovernmental debt, which one part of the government owes to another.

[6] For more information on the relationship between deficits and debt, see CRS Report R44383, *Deficits, Debt, and the Economy: An Introduction*, by Grant A. Driessen. For information on how debt is issued by the Treasury Department, see CRS Report R40767, *How Treasury Issues Debt*, by Grant A. Driessen.

[7] Benjamin M. Friedman, "Crowding Out or Crowding In? Economic Consequences of Financing Government Deficits," Brookings Institution, https://www.brookings.edu/wp-content/uploads/2016/11/1978c_bpea_friedman.pdf.

[8] Laurence Ball and Gregory Mankiw, *What Do Budget Deficits Do?*, National Bureau of Economic Research (NBER), Working Paper no. 5263, September 1995, https://www.nber.org/system/files/working_papers/w5263/w5263.pdf.

[9] Ball and Mankiw, *What Do Budget Deficits Do?*

Another potential result of rising interest rates is lower net exports. As domestic rates rise relative to foreign rates, investors tend to seek out U.S. investments, because the relatively high interest rates mean relatively high returns on investment. Increased demand for U.S. investment from foreign investors means that the demand for the dollar would increase as foreign investors exchanged various foreign currencies for dollars that they could then invest. This increased demand for dollars increases the value of the dollar, referred to as *appreciation*. When the dollar appreciates, it becomes more expensive relative to other currencies—it takes more foreign currency to "purchase" one dollar—and, therefore, U.S. goods and services become more expensive relative to foreign goods and services, causing the trade deficit to increase as exports decrease and imports increase.[10] However, this export effect may be tempered as foreign capital flows into the United States, which can push interest rates back down as the supply of loanable funds increases, potentially offsetting the initial rise in rates caused by the stimulus.

These offsetting effects from rising interest rates would be expected to be partial such that stimulus expands aggregate demand on net, and their magnitude depends on the state of the economy. During a recession, there is less risk of increasing interest rates due to already depressed demand for investment and interest-sensitive spending. Because demand for loanable funds is depressed during a recession, the additional demand created by government borrowing does not increase interest rates as much and therefore does not crowd out as much private spending or decrease net exports as much as it would during an economic expansion.[11]

Rising Inflation Risk

The goal of fiscal stimulus is to increase aggregate demand within the economy. However, if fiscal stimulus is applied too aggressively or is implemented when the economy is already operating near full capacity, it can result in "overheating," a situation in which aggregate demand outstrips aggregate supply. This can cause inflation to accelerate. A rising inflation rate can introduce distortions into the economy and impose unnecessary costs on individuals and businesses.[12] The Fed can limit the risk of inflation by increasing interest rates, which would dampen aggregate demand, if there is any sign of the economy overheating. In doing so, the effects of rising interest rates discussed in the previous section—crowding out investment and increasing the trade deficit—would be exacerbated, thereby increasing the risk of triggering a recession.

Risks of Persistent Expansionary Fiscal Policy

Persistently applying fiscal stimulus—running budget deficits—across the business cycle can negatively affect the economy in the longer term. Persistent fiscal stimulus—particularly during economic expansions—can limit long-term economic growth by crowding out private investment. Additionally, rising debt requires a growing portion of the federal budget to be directed toward interest payments on the debt, potentially crowding out government spending on other programs. Issues of debt sustainability are discussed in a later section.

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[10] Olivier Blanchard, *Macroeconomics*, 5th ed. (Upper Saddle River, NJ: Pearson Education, 2009), pp. 450-451.

[11] Alan J. Auerbach and Yuriy Gorodnichenko, "Measuring the Output Responses to Fiscal Policy," *American Economic Journal: Economic Policy*, vol. 4, no. 2 (May 2012), https://www.aeaweb.org/articles/pdf/doi/10.1257/pol.4.2.1.

[12] See, for example, Richard G. Anderson, *Inflation's Economic Cost: How Large? How Certain?*, Federal Reserve Bank of St. Louis, July 2006, https://www.stlouisfed.org/publications/regional-economist/july-2006/inflations-economic-cost-how-large-how-certain.

Long-Term Growth

Long-term growth is determined, in part, by the amount of capital in an economy. Persistent fiscal stimulus, and the associated budget deficits, can decrease the size of the economy in the long term as a result of decreased investment in physical capital (long-lasting assets used to produce goods and services).[13] As discussed above, the government's deficit spending can result in higher interest rates, which generally lead to lower levels of business investment. Physical capital investment allows businesses to produce more goods and services with the same amount of labor and raw materials. Government deficits that lead to lower levels of business investment can therefore result in lower quantities of physical capital and, as a result, may reduce the economy's productive capacity in the long term.[14]

Crowding Out Government Spending

Rising debt may also be of concern due to its associated interest payments. When the government borrows money from the public, it must pay back that money with interest. The amount of interest the government has to pay in a given fiscal year is a function of the size of the debt and the interest rates on the debt. All else equal, an increase in the level of public debt (even absent an increase in interest rates) results in an increase in interest payments that the government must make each year, further increasing future deficits. Rising interest payments may therefore crowd out government spending on other policy priorities. If Congress decides to lower future deficits so as not to crowd out spending on particular policies, this would require spending cuts elsewhere or higher taxes.

Growing Deficits and Debt in the Current Macroeconomic Landscape

The economy today looks very different than it did even a few years ago. Deficits and growing debt can affect the economy in the short term and the long term. However, the state of the economy simultaneously contributes to the ways in which deficits and the debt are likely to affect certain parts of the economy. In order to elucidate policy questions surrounding fiscal policy, it is therefore helpful to first consider the current state of the budget and debt in the context of the economy and recent economic trends.

Recent Trends in Deficits and Publicly Held Debt

For most of the past half-century, the federal government has run budget deficits and added to the stock of publicly held debt (see **Figure 1** and **Figure 2** below). In relation to the size of the economy, both deficits and debt have increased over time. The deficit-to-GDP ratio tends to fluctuate around recessions, owing in part to fiscal policy changes based on the business cycle and also to *automatic stabilizers*—cyclical fluctuations in revenue and spending that change automatically, such as an increase in tax revenue when incomes rise during an expansion.[15] The deficit less these automatic stabilizers is known as the *structural deficit*.

[13] Infrastructure is a part of the capital stock, and therefore increased public investment financed via deficit spending can still lead to a higher capital stock overall and therefore increase the productive capacity of the economy.

[14] Ball and Mankiw, *What Do Budget Deficits Do?*

[15] For more details, see CRS In Focus IF11253, *Introduction to U.S. Economy: Fiscal Policy*, by Lida R. Weinstock.

When considering the economic effects of deficits and debt, some of the most common metrics to consider are the deficit-to-GDP ratio and the debt-to-GDP ratio. The nominal value of the budget deficit or the stock of debt matters less in theory than their ratios to GDP do because, so long as the economy is growing faster than the deficit or debt and interest rates are stable, the government should not face steep tradeoffs to running budget deficits or have difficulty servicing the debt. These ratios can be particularly useful when considering policy questions such as debt sustainability (which is discussed in detail in the "Debt Sustainability" section at the end of this report). For example, if the stock of debt is growing at 1% per year and GDP is growing at 2% per year, then the debt is actually getting smaller relative to the size of the economy, and the government's ability to meet its obligations is higher despite the stock of debt rising. Additionally, if the nominal growth rate in the economy is larger than the average interest rate paid on debt, the government will devote smaller portions of its budget to paying interest on the debt over time.

In recent years, both the deficit-to-GDP and debt-to-GDP ratios have reached new highs. While deficits were already relatively large prior to the pandemic, in response to COVID-19, significant expansionary fiscal policy was put in place, resulting in the largest deficit-to-GDP ratio since World War II.[16] Even though fiscal stimulus programs enacted during the pandemic have mostly expired, the deficit-to-GDP ratio remains large by historical standards, particularly when compared to other economic expansions. The fact that the economy is likely near or at full employment currently could make it more likely for some of the risks of expansionary fiscal policy to occur. Furthermore, the Congressional Budget Office (CBO) forecasts that the debt-to-GDP ratio will rise again in coming years under current policy. The current and projected trends in deficit spending also mean that debt has grown and is expected to continue to grow at a relatively rapid pace. According to CBO:

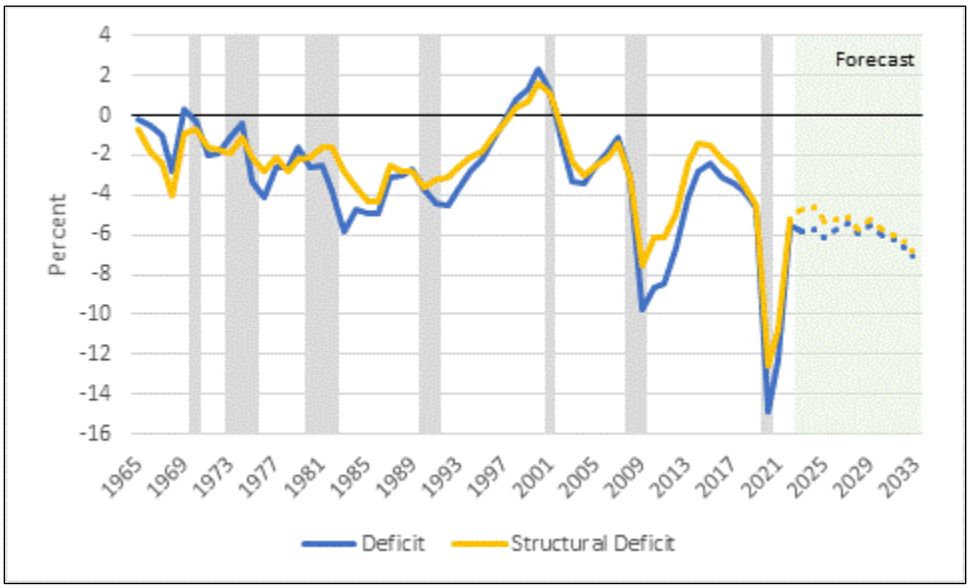
> Historically, when unemployment has been low, deficits have been much smaller as a percentage of GDP than the deficits in CBO's current projections. From 2024 to 2033—a period in which the average unemployment rate is projected to remain at or below 5.0 percent in each year—deficits in CBO's baseline projections are never less than 5.5 percent of GDP. From 1973 to 2022, the unemployment rate was at or below 5.0 percent in 12 years. Deficits in those 12 years (adjusted to exclude the effects of timing shifts) averaged 1.5 percent of GDP.[17]

[16] Office of Management and Budget, *President's Budget Historical Tables*, https://www.whitehouse.gov/omb/budget/historical-tables/.

[17] CBO, *The Budget and Economic Outlook: 2023 to 2033*, February 2023, https://www.cbo.gov/publication/58946. CBO projections assume no policy changes and average economic conditions over the longer term. Therefore, projections are not inherently more likely to be over- or underestimates. CBO publishes reports on the accuracy of its projections, available at https://www.cbo.gov/topics/budget/accuracy-projections.

Figure 1. Federal Deficit as a Percent of GDP

FY1965-FY2033



Source: Congressional Budget Office (CBO).

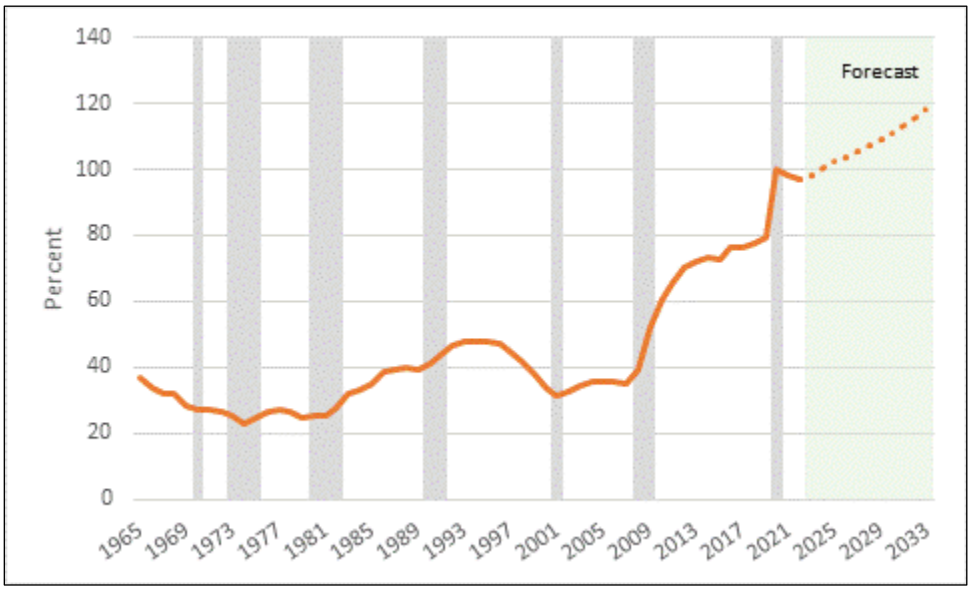
Notes: Gray bars denote recessions. A negative ratio indicates a budget deficit, and a positive ratio indicates a budget surplus for a given fiscal year.

On the longer-term horizon, CBO forecasts that growing deficits under current policy will contribute to a growing publicly held debt-to-GDP ratio that is expected to reach 181% in 2053, leading to concerns about the sustainability of the debt (discussed in further detail in the subsequent "Debt Sustainability" section).[18]

[18] CBO, *The 2023 Long-Term Budget Outlook*, June 2023, https://www.cbo.gov/publication/59331.

Figure 2. Publicly Held Debt-to-GDP Ratio

FY1965-FY2033



Source: CBO.

Note: Gray bars denote recessions.

Current Economic Landscape

The extent to which the economy is likely to experience negative effects from persistent and increasing deficits and growing debt is dependent, in part, on certain underlying characteristics of the economy. Prior to the pandemic, interest rates and inflation remained low despite persistent deficit spending, which led some to believe that the risks of growing deficits and debt had diminished.[19] Now, the economic landscape is changed. Owing to a combination of factors, including expansionary fiscal policy, inflation rose in the post-pandemic economy and remains above target.[20] This recent dynamic has potentially changed the relative magnitudes of the tradeoffs of fiscal policy. This section discusses three aspects of the economy—inflation, interest rates, and real GDP growth—how each has changed in recent years, and how this change relates to the economics of fiscal policy.

High Inflation

Before inflation started rising in early 2021, it had largely remained below the Fed's target since the 2007-2009 financial crisis and recession. Low inflation allowed for accommodative monetary policy and low interest rates. In general, low interest rates reduce many of the risks associated with persistent deficit spending and a growing stock of debt—for example, crowding out private investment and increasing the trade surplus—because those risks largely are driven by rising interest rates. However, beginning in early 2021, inflation began rising, hitting highs not seen

[19] For example, see CRS Report R45976, *Deficit Financing, the Debt, and "Modern Monetary Theory"*, by Grant A. Driessen and Jane G. Gravelle.

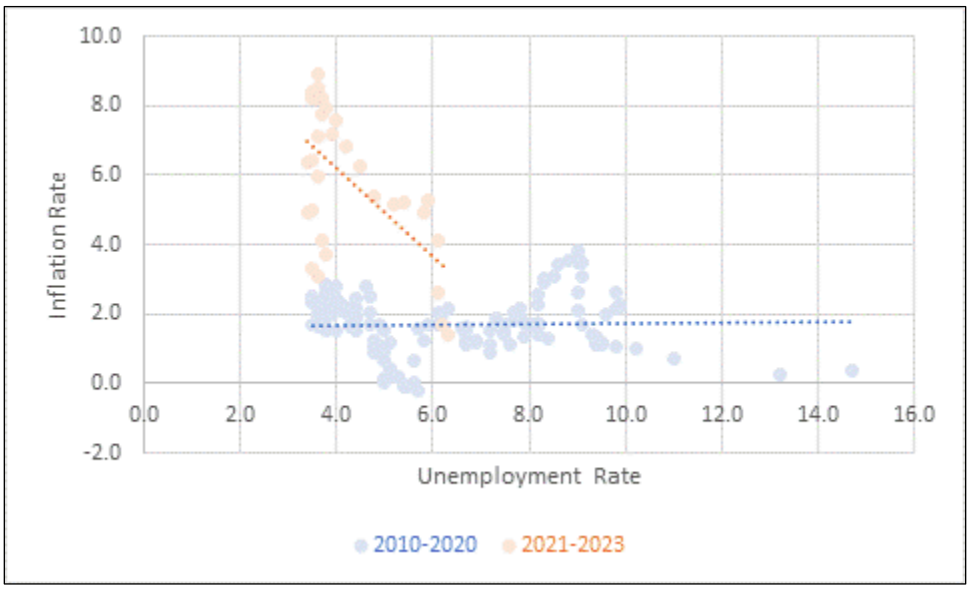
[20] For a more detailed discussion of the causes of inflation, see CRS Report R47273, *Inflation in the U.S. Economy: Causes and Policy Options*, by Marc Labonte and Lida R. Weinstock.

since the 1980s, which fundamentally changes how deficit spending is expected to affect the economy.

Not only might high inflation increase the risks of deficit spending, but deficit spending that brings the economy to or past full employment is itself a potential driver of inflation. One of the reasons inflation is associated with an overheating economy is that when aggregate demand rises (and in some cases outstrips aggregate supply), unemployment tends to fall. All else equal, this would tend to be accompanied by an increase in wages and prices.

The Phillips Curve is a graphical representation of the relationship between unemployment and inflation and can be used to illustrate how closely the two are related in a particular time period. In the post-financial-crisis years, the inverse relationship between these two variables was weaker, a phenomenon referred to as the flattening of the Phillips Curve (see relatively flat blue trendline in **Figure 3**). As mentioned, inflation remained relatively low during the 11-year expansion that preceded COVID-19, even as unemployment rates fell below 4% and the economy arguably neared full employment late in the expansion. However, the slope of the Phillips Curve has been relatively steep in recent years, with the low unemployment rate (similar to rates seen immediately prior to the pandemic) associated with higher inflation (see steeper orange trendline in **Figure 3**). These relationships suggest that deficit spending could be more likely to result in temporary increases in inflation moving forward than was previously observed (although the slope could change again). Some economists have posited other causes of inflation, but regardless of whether low unemployment was the main cause of the rise in inflation, tighter fiscal policy could still help reduce inflationary pressures going forward.

Figure 3. The Phillips Curve



Source: CRS representation using BLS Current Population Survey and Consumer Price Index data.

Notes: This figure is not a time series but a scatterplot that maps the relationship between two variables—inflation and unemployment—with each point representing the inflation rate and unemployment rate in a particular month. The blue points represent the combinations of inflation and unemployment in each month from January 2010 to December 2020. The orange points represent the same for the period January 2021 to August 2023.

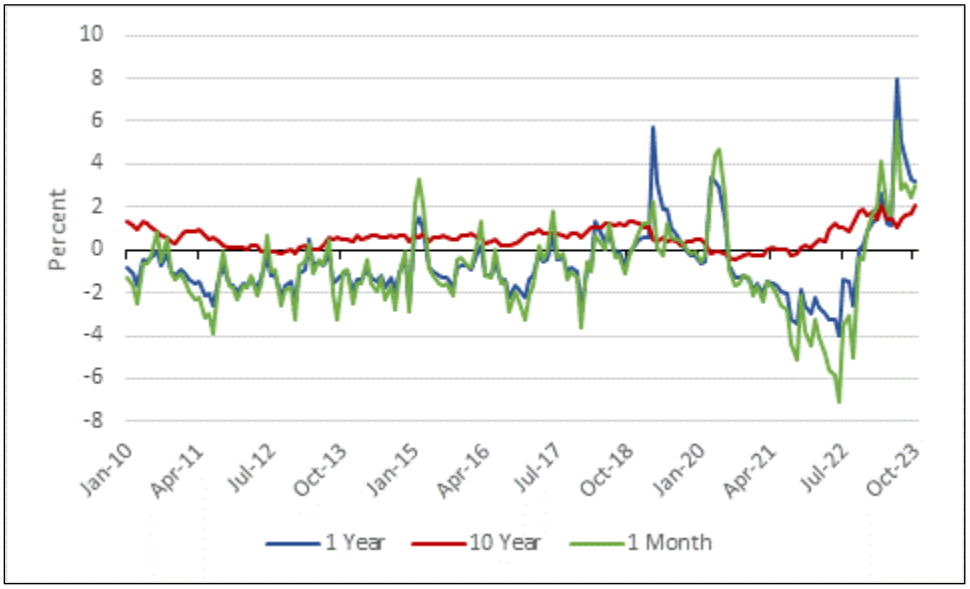
Inflation and Debt

Inflation reduces the *real* value (meaning the value in inflation-adjusted terms) of existing debt. Typically, higher inflation is seen as advantageous to borrowers because it lets the debtor pay back existing debt with money that is worth less than when it was initially borrowed. This is true of government debt as well. In this way, the high inflation of the past few years has reduced the burden of paying back pre-existing debt. However, the effects of inflation on new debt that has been issued in the past few years differ from the effects on pre-existing debt.

The effect inflation has on the cost of newly issued debt depends on its rate relative to interest rates. Inflation can reduce real interest rates (meaning nominal interest rates minus inflation, which represent the inflation-adjusted cost of borrowing) if nominal interest rates do not rise as much as inflation does. (Further discussion on interest rates and their effects on debt burden can be found in the next section, "Rising Interest Rates.") However, nominal rate increases in the past year have been large enough to overtake the rise in inflation (as shown in **Figure 4**). Thus, in real terms, the cost of servicing new debt has increased.

Figure 4. Real Interest Rates

January 2010 to October 2023



Source: Federal Reserve Bank of Cleveland, "Inflation Expectations," https://www.clevelandfed.org/indicators-and-data/inflation-expectations.

Higher inflation could bring down the debt-to-GDP ratio under certain conditions (e.g., inflation sufficiently drives the growth in nominal GDP such that newly issued debt does not match or exceed GDP growth). However, this effect would generally be offset when interest rates are rising and deficit spending continues, as has been the case recently, because as existing lower-rate debt matures, the government pays it off but issues debt at the new higher rates. Additionally, persistently high inflation can result in lower GDP growth, further offsetting the beneficial effects of lowered borrowing costs on the debt-to-GDP ratio.

Research and past experience generally support the view that inflation does not tend to provide any longer-term benefits in terms of reducing debt burden.[21] In theory, inflation could play a larger role in reducing debt burdens if the Fed did not respond to inflation with rate hikes. However, inflation introduces many distortions to economic activity separate from the debt and can become entrenched if not adequately responded to.[22] As such, economists tend to agree that achieving low and stable inflation is vital for overall economic health.

Rising Interest Rates

Despite periods of significant budget deficits, both long- and short-term interest rates trended downward beginning in the mid-1980s and were consistently very low from the financial crisis in 2008 until 2022. These low rates were due in part to accommodative monetary policy and persistently low inflation that kept rates anchored despite any upward pressure from deficit spending. However, interest rates across the economy have been rising since 2022, spurred, in large part, by the Fed's aggressive hikes in the federal funds rate target range as it has aimed to lower inflation.[23] Rising deficits themselves are also likely playing a role in rising rates, as described in the "Rising Interest Rate Risk" section above. As a result of both forces, interest rates are the highest they have been since before the financial crisis and recession of 2007-2009. As the Fed slows and potentially ends its rate hikes, increasing deficits could continue to raise rates further.[24]

Monetary Policy

The Fed has raised the federal funds rate over 5 percentage points since March 2022, which may have a range of effects on the deficit-to-GDP and debt-to-GDP ratios. Higher interest rates directly increase interest payments on newly issued debt, in turn increasing net interest outlays and potentially resulting in more borrowing to cover those increased costs. Monetary policy tightening also generally works to lower demand in the economy, which can affect GDP in the short term. Higher interest rates, all else equal, can decrease interest-sensitive spending and net exports in the economy, which both work to lower GDP.[25]

Higher net interest outlays and lowered GDP would both result in rising deficit-to-GDP and debt-to-GDP ratios, all else equal. Nonetheless, a looser monetary policy stance could also result in rising ratios if it allowed high inflation to remain in the economy. Historically, situations in which the economy has experienced high inflation for extended periods has also resulted in lagging growth, a situation known as stagflation. Depending on the stance of fiscal policy, deficits and debt could rise faster than GDP in such a situation. Stagflation is also much harder to get under control, which could ultimately result in a more severe monetary policy tightening and even higher interest rates than the economy is currently experiencing.[26]

[21] For example, see Penn Wharton Budget Model, "Can Higher Inflation Help Offset the Effects of Larger Government Debt?," October 21, 2021, https://budgetmodel.wharton.upenn.edu/issues/2021/10/21/can-inflation-offset-government-debt; Christopher J. Neely, "Inflation and the Real Value of Debt: A Double-Edged Sword," Federal Reserve Bank of St. Louis, August 1, 2022, https://www.stlouisfed.org/on-the-economy/2022/aug/inflation-real-value-debt-double-edged-sword; and George Cole and Sara Grut, "DM Debt—How to Move Mountains," Goldman Sachs, September 11, 2023, https://publishing.gs.com/content/research/en/reports/2023/09/11/69271985-9bd9-4150-8f3e-0e90cd9ad21b.html.

[22] See CRS Report R47273, *Inflation in the U.S. Economy: Causes and Policy Options*, by Marc Labonte and Lida R. Weinstock.

[23] See CRS Insight IN11963, *Where Is the U.S. Economy Headed: Soft Landing, Hard Landing, or Stagflation?*, by Marc Labonte and Lida R. Weinstock.

[24] Greg Ip, "Rising Interest Rates Mean Deficits Finally Matter," *Wall Street Journal*, October 5, 2023, https://www.wsj.com/economy/central-banking/rising-interest-rates-mean-deficits-finally-matter-74249719.

[25] See CRS In Focus IF11751, *Introduction to U.S. Economy: Monetary Policy*, by Marc Labonte.

[26] See CRS In Focus IF12177, *Back to the Future? Lessons from the "Great Inflation"*, by Marc Labonte and Lida R. Weinstock.

Interest rates are generally expected to come down at some point as inflation falls. The Fed projects that the appropriate monetary policy path will result in a federal funds rate of 2.5% in the longer run—relatively low in historical terms but higher than most of the period since the 2007-2009 financial crisis and recession.[27] The Fed does not determine other interest rates in the economy, but rates are affected by movements in the federal funds rate (as well as changes in economic and financial markets), with shorter-term rates affected more so and longer-term rates less so.[28] A long-term federal funds rate higher than what it was for much of the 15 years up to 2022 would likely translate to higher interest rates in general and a higher average interest rate on the debt. Even if rates do go down somewhat, so long as they remain elevated from the previous period of very low rates, policymakers will face a steeper tradeoff when employing expansionary fiscal policy.

The federal government must pay interest on its debt to avoid default, and therefore the interest rate on any given debt instrument is important to how much money the government needs to spend on servicing the debt. Thus, net interest outlays are a function of the size of the amount of debt outstanding, the budget deficit (which determines how much new debt is issued), and interest rates. Lower rates can, if they are sufficiently low, keep stable or reduce the government's outlays even if the stock of debt increases. This can be seen in **Figure 5** during the expansion between the recession of 2007-2009 and the pandemic, when interest payments and GDP were growing at relatively similar rates despite the rising debt because of low interest rates. Conversely, higher rates put upward pressure on interest outlays.

Given the increasing interest rates since the pandemic and the growing stock of debt, net interest costs have also been increasing. CBO projects, that as a percentage of GDP, net interest outlays will increase in coming decades, reaching 6.7% by 2053 under current policy.[29] CBO projects that under current policy and average economic conditions in the medium to long term, deficits will account for roughly one-third of the projected rise in net interest outlays and that increased interest rates will account for the other two-thirds over the 2023-2053 period.[30] All else equal, growing servicing costs may result in further increases in deficits, the crowding out of other policy priorities, and a rising debt-to-GDP ratio.[31]

[27] Federal Open Market Committee, *Summary of Economic Projections*, September 20, 2023, https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20230920.htm.

[28] See CRS In Focus IF11751, *Introduction to U.S. Economy: Monetary Policy*, by Marc Labonte.

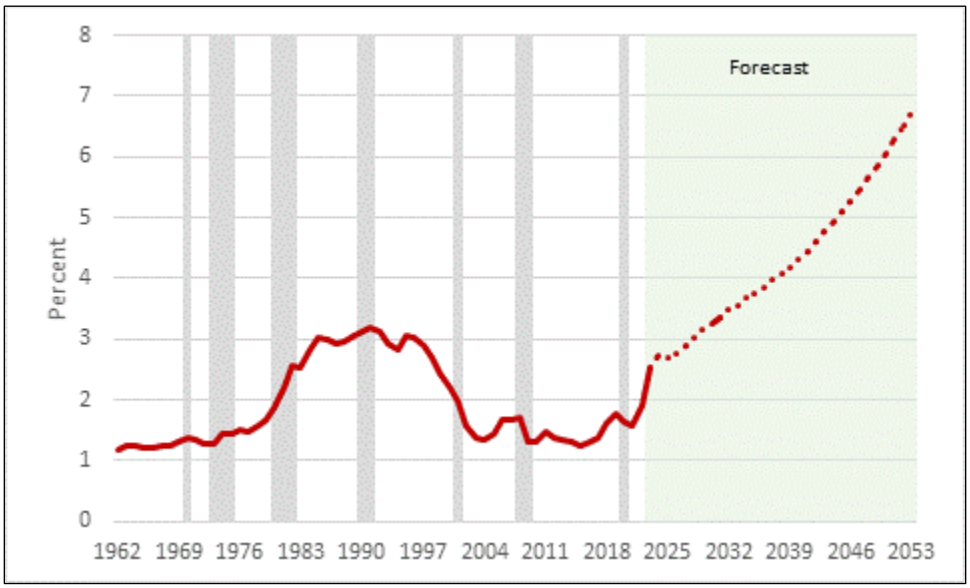
[29] CBO, *The 2023 Long-Term Budget Outlook*.

[30] CBO, *The 2023 Long-Term Budget Outlook*.

[31] Some research has suggested that rising interest costs may have a disproportionately smaller impact on the debt-to-GDP ratio than on the deficit-to-GDP ratio in the next decade owing to recent and projected nominal GDP growth that keeps pace with or outpaces nominal interest rate growth. See Jan Hatzius et al., "Interest Expense: A Bigger Impact on Deficits Than Debt," Goldman Sachs, October 3, 2023, https://publishing.gs.com/content/research/en/reports/2023/10/03/bb300860-1725-423b-a688-06f3198b6448.html.

Figure 5. Net Interest as a Percentage of GDP

FY1962-FY2053



Source: CBO.

Note: Gray bars denote recessions.

Interest Rates and Investment

As discussed previously, one of the main risks arising from rising interest rates is decreasing business investment. Business investment can affect the economy's short-term and long-term growth. In the short term, an increase in business investment directly increases the current level of GDP, because physical capital is itself produced and sold. Business investment is one of the more volatile components of GDP and tends to fluctuate significantly from quarter to quarter. In the long term, a larger physical capital stock increases the economy's overall productive capacity, allowing more goods and services to be produced with the same level of labor and other resources. Long-term economic growth generally depends on growth in the economy's productive capacity rather than swings in supply and demand.[32]

As measured by the annual percent change in quarterly real private domestic investment, the investment rate began decelerating in the second quarter of 2022 and has been negative in the fourth quarter of 2022 and first half of 2023.[33] The investment rate may pick up again assuming interest rates eventually come down from current levels. In the longer term, the investment will be dependent on a number of factors, including interest rates and deficits. As previously discussed, if long-term interest rates settle at a higher level and deficits grow, this could put downward pressure on the investment rate, all else equal. A lower investment rate could lower short-term and, in particular, long-term economic growth.

[32] For more information on business investment and the economy, see CRS In Focus IF11020, *Introduction to U.S. Economy: Business Investment*, by Lida R. Weinstock.

[33] Bureau of Economic Analysis, "National Income and Product Accounts," https://www.bea.gov/products/national-income-and-product-accounts.

Investment and Saving

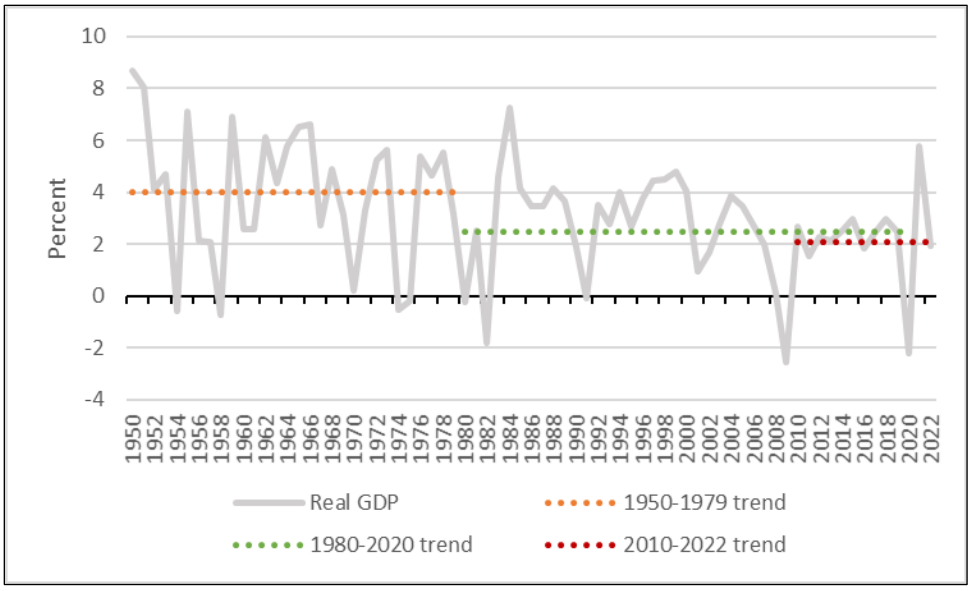
One of the long-term determinants of business investment is the level of savings available to the economy. When individuals deposit their savings with financial institutions, those funds are then available to be loaned out to businesses to invest. Because of the global nature of the U.S. economy, firms in the United States have access to savings from within the United States and from abroad. Thus, interest rates in the United States are influenced by the supply of global, in addition to national, savings. A higher supply of savings results in lower interest rates and higher business investment, and a lower supply of savings results in higher interest rates and lower business investment, all else equal.[34]

Stagnating Real GDP Growth

The U.S. economy has experienced slower real GDP growth in recent years than in previous years. Since the 2007-2009 recession, annual real growth has exceeded 3% once, in 2015, out of the 11 years of expansion prior to COVID-19. Prior to the 1980s, annual growth somewhat regularly exceeded 5%. As shown in **Figure 6** below, between 1950 and 1979, annual growth averaged about 4%. This dropped to an average annual growth rate of 2.5% between 1980 and 2020 and is even lower when only the past decade is considered—annual average growth between 2010 and 2022 was down to about 2.1%, despite higher-than-average growth in 2021.[35]

Figure 6. Average Annual Real GDP Growth

1950-2022



Source: CRS calculations using Bureau of Economic Analysis data.

In the aftermath of the adverse economic effects of the pandemic, real GDP growth has been especially uneven from quarter to quarter. As the economy recovered, real GDP growth accelerated and was significantly above average in 2021. However, real GDP growth was negative in the first half of 2022, owing in part to high inflation, and has since risen back to levels similar to before the pandemic. It is challenging to predict the exact path of GDP in the coming quarters, owing to uncertainty surrounding many factors, including how the economy will

[34] For additional discussion of the supply of savings, see CRS In Focus IF10963, *Introduction to U.S. Economy: Personal Saving*, by Lida R. Weinstock.

[35] Bureau of Economic Analysis, "National Income and Product Accounts."

continue to react to tighter monetary policy and any future policy changes. Additionally, economists expect certain demographic trends, notably slowing population growth, to continue to adversely affect long-term growth.[36] While the exact path of real GDP is uncertain, economists generally expect growth to continue in its downward trend—both CBO and the Federal Open Market Committee project longer-run real GDP growth rates of 1.8%.[37]

Policy Issues

Debt Sustainability

Debt sustainability is an issue with widespread and significant economic ramifications. One narrower definition of *debt sustainability* is a country's ability to service its debt without defaulting. However, as discussed in the "Risks of Persistent Expansionary Fiscal Policy" section, there can be negative economic consequences of having a large debt apart from such a fiscal crisis, and arguably a country's debt should be considered as unsustainable when this broader set of outcomes occurs. But whatever definition is used, persistent fiscal stimulus resulting in an ever-rising debt-to-GDP ratio—especially once it causes the perceived or real risk of the government defaulting on that debt to rise—can lead to an unsustainable level of debt. As the perceived risk of default begins to increase, investors will demand higher interest rates as compensation. If rates become too high, it could cause a fiscal crisis in which the government is unable to service its debts or is forced to print a significant amount of money to cover such costs, which could result in rapidly increasing inflation.[38]

Fiscal crises caused by a government reaching an unsustainable debt level have occurred many times in other countries, and perhaps some wisdom can be drawn from those foreign experiences. However, the United States may prove a different case because of the wide international use of the dollar. Foreign fiscal crises have often occurred during recessions as governments were forced to borrow above their means and faced a choice between defaulting on loans and printing currency to meet their obligations, which could then cause the currency to depreciate. This is less likely to happen in the United States during a recession as investors tend to flock to the dollar as a "safe haven" currency, causing it to appreciate. Further, the United States may be able to issue more debt relative to largely similar counterparts, because U.S. debt is often seen as one of the safest investments in the world and is widely used to underpin global financial transactions.[39] Foreigners make up one of the largest categories of holders of U.S. debt,[40] and some believe that foreigners might be less confident in the dollar than Americans are, although this has not been proven.

Recent trends, particularly that of rising interest rates, have brought the question of debt sustainability back to the forefront of the policy debate surrounding fiscal policy. Already rising interest costs are expected to continue rising in the short term, and the era of sustained low rates appears to have ended. (As previously discussed in the "Rising Interest Rates" section, interest

[36] Rainer Kotschy and David E. Bloom, *Population Aging and Economic Growth: From Demographic Dividend to Demographic Drag?*, NBER, Working Paper no. 31585, August 2023, https://www.nber.org/papers/w31585.

[37] Federal Open Market Committee, *Summary of Economic Projections*; and CBO, *Budget and Economic Data*, https://www.cbo.gov/data/budget-economic-data.

[38] CBO, *Federal Debt and Risk of a Fiscal Crisis*, July 27, 2010, p. 1, https://www.cbo.gov/sites/default/files/111th-congress-2009-2010/reports/07-27_debt_fiscalcrisis_brief.pdf.

[39] CBO, *Federal Debt and Risk of a Fiscal Crisis*, p. 5.

[40] U.S. Department of the Treasury and Federal Reserve Board, "Major Foreign Holders of Treasury Securities," March 15, 2021, https://ticdata.treasury.gov/Publish/mfh.txt.

rates are expected to come down in future years but not reach lows seen in recent decades.) A concern about this new interest rate environment is that it could accelerate the debt reaching a "tipping point" in which economic growth is clearly and adversely affected or default becomes imminent.

"Tipping Points"

There is not a general consensus about a tipping point at which debt becomes unsustainable. CBO goes so far as to purposefully not define such a point: "[T]he debt-to-GDP ratio has no identifiable tipping point because the risk of a crisis is influenced by other factors, including the long-term budget outlook, near-term borrowing needs, and the health of the economy."[41]

Nevertheless, there are those who have attempted to estimate such a tipping point. Prior to the pandemic, there were a few estimates that garnered attention. In 2010, one study argued that advanced countries with debt-to-GDP ratios above 90% had median growth rates about 1% lower and average growth rates about 4% lower than their less indebted counterparts.[42] Another group of economists published further research in 2013 that countries with debt-to-GDP ratios above 80% and persistent trade deficits are vulnerable to rapid fiscal deterioration.[43] The U.S. debt-to-GDP ratio exceeded 90% beginning in 2020, and, as of yet, the United States does not appear to have experienced any problems with sustainability, at least under definitions that require severe outcomes.

The Federal Reserve Bank of Kansas City published further estimates in November 2020—after the pandemic began but prior to increased inflation. The authors researched several different scenarios given different assumptions about economic conditions and policy. In the baseline scenario, the odds of default were found to begin increasing dramatically at a debt-to-GDP ratio of 200% and become nearly certain around 275%.[44] According to this model, the United States may run a risk of being unable to meet its debt obligations in the future. CBO projects that the debt-to-GDP ratio could reach 180.6% by 2053, below but nearing the 200% tipping point.[45]

An October 2023 analysis by the Penn Wharton Budget Model (PWBM) estimated that under current conditions, the debt-to-GDP ratio would reach a tipping point at 200%.[46] In the CBO and PWBM baseline scenarios, the debt-to-GDP ratio will not reach 200% by 2050. (The ratios are 169% and 183% for CBO and PWBM, respectively.) However, in an alternative scenario in

[41] CBO, *Federal Debt: A Primer*, March 2020, https://www.cbo.gov/publication/56309.

[42] Carmen M. Reinhart and Kenneth S. Rogoff, "Growth in a Time of Debt," *American Economic Review*, vol. 100 (May 2010), pp. 573-578. This research was largely put in doubt a few years later when academics from the University of Massachusetts at Amherst discovered coding errors in Reinhart and Rogoff's spreadsheets and unsound statistical methodology. See Thomas Herndon, Michael Ash, and Robert Pollin, "Does High Public Debt Consistently Stifle Economic Growth? A Critique of Reinhart and Rogoff," University of Massachusetts Amherst Political Economy Research Institute, Working Paper no. 322, April 15, 2013. Reinhart and Rogoff have admitted to the coding errors but maintain the soundness of their conclusions. See Carmen M. Reinhart and Kenneth S. Rogoff, "Debt, Growth and the Austerity Debate," *New York Times*, April 25, 2013, https://www.nytimes.com/2013/04/26/opinion/debt-growth-and-the-austerity-debate.html?hp&_r=0.

[43] David Greenlaw et al., "Crunch Time: Fiscal Crises and the Role of Monetary Policy," NBER, Working Paper no. 19297, August 2013.

[44] Huixin Bi, Wenyi Shen, and Shu-Chun S. Yang, "U.S. Federal Debt Has Increased, but Appears Sustainable for Now," Federal Reserve Bank of Kansas City, November 16, 2020, https://www.kansascityfed.org/research/economic-bulletin/us-federal-debt-increased-appears-sustainable/.

[45] CBO, *The 2023 Long-Term Budget Outlook*.

[46] PWBM, "When Does Federal Debt Reach Unsustainable Levels?," October 6, 2023, https://budgetmodel.wharton.upenn.edu/issues/2023/10/6/when-does-federal-debt-reach-unsustainable-levels.

which interest rates are at least 50 basis points higher than baseline, the debt-to-GDP ratio will surpass this tipping point by 2050.

Altogether, the research on tipping points—particularly the more recent research that was able to account for more recent deficit spending trends—points to the United States being on an ultimately unsustainable fiscal path, albeit with the potential tipping points and severe outcomes occurring several decades in the future. Future economic trends remain uncertain, however, and changes to the macroeconomy or fiscal policy stance could significantly alter spending and debt outcomes. Ultimately, estimating such a number can be challenging, especially given the unique position of the U.S. economy, as illustrated by the fact that post-pandemic estimates are generally much larger than pre-pandemic ones.

Tradeoffs of Deficit Reduction

Given recent economic trends and the potentially increased risks of budget deficits given those economic conditions, deficit reduction is at the forefront of many policy debates. In terms of economic impacts, deficit reduction's effects can be challenging to forecast given that the effects in the short term and long term are likely to differ, potentially significantly so. The main determinants of short-term growth and long-term growth are different, and while deficit reduction can slow the economy in the short term, it can also spur the economy over the long term, resulting in a balancing act for policymakers.

Deficit reduction would entail lowering government spending, raising taxes, or some combination of both. In the short term, deficit reduction can help to lower inflation and interest rates but can also lower aggregate demand. Similar to contractionary monetary policy, contractionary fiscal policy can cause GDP to decrease and potentially result in recession depending on the timing and scope of such reductions. A low inflation, low interest rate environment is more favorable for questions of debt sustainability, but slower growth would be less favorable.

Short-term fluctuations in the economy can have very real consequences for economic actors. For example, deficit reductions severe enough to result in significant decreases in aggregate demand may affect labor markets, increasing unemployment and halting wage gains. A one-time deficit reduction that is quickly reversed will not affect longer-term trends in deficits or debt. For deficit reductions to be effective in altering the sustainability of debt, they must change both short-term and long-term fiscal policy trends.

In the current context of low unemployment, higher-than-target inflation, rising interest rates, and large deficits, there may be more room for deficit reductions without triggering a recession. However, as discussed previously, the Fed has been tightening monetary policy, which may give policymakers less leeway.

Is the U.S. Economy Headed for Recession?

Historically, periods of monetary policy tightening have more often than not resulted in recession. Given the magnitude and speed with which the Fed increased interest rates since early 2022, economists have been concerned to varying degrees about a "hard landing," the outcome in which monetary policy becomes overly restrictive and the economy slides into a recession. To this point, the economy has proved more robust than expected, and inflation has come down considerably without any significant disturbance to the labor market. Projections of a recession in the next 12 months have declined steadily over the course of the rate hikes. For example, a quarterly survey of private sector economists by the *Wall Street Journal* showed that in September 2023

economists believed the probability of a recession occurring within the next year was 48%, the first time the probability was below 50% since the middle of 2022.[47]

A recession could result in opposing trends in terms of the effects on debt. On the one hand, a recession could result in expansionary monetary policy and lowered interest rates, which, all else equal, could help lower net interest payments. On the other hand, a recession could also result in expansionary fiscal policy, increased structural deficit spending, and increased borrowing, which, all else equal, could result in increased net interest payments and an increased debt-to-GDP ratio. In either scenario, GDP would likely dip temporarily, resulting in upward pressure on the ratios. Over the longer term, a recession is less likely to impact deficits or the debt-to-GDP ratio. The longer-term debt dynamics will depend primarily on where interest rates settle and longer-term trends in deficit spending.

Fiscal policy that lowers demand in the short term, can, in theory, improve longer-term economic prospects if immediate deficit reductions are not just offset by larger deficit spending and subsequently larger deficit-to-GDP ratios in the long term. This is because, in the long term, economic growth is largely determined by the amount of physical and human capital and the rate of technological change in the economy. The stock of physical capital is, in turn, largely dependent on the rate of investment in the economy.[48] Because sustained deficits can raise interest rates, which disincentivize investment, deficit reduction can increase long-term growth.

Economists have tended to agree that, on the current fiscal policy path and absent policy changes, the debt-to-GDP ratio will not stabilize or decrease over the long term.[49] When, how, and by what degree to reduce deficits, though, is highly debated. In general, when debating the appropriate fiscal path and a sustainable level of debt, economists tend to focus on longer-term variables. However, policy decisions are made with more certain information about the short term and with short-term consequences clearer and more immediate. Finding a fiscal policy balance that allows for both short-term and long-term growth—particularly long-term growth that keeps pace with (or outpaces) debt growth—is likely to be challenging. Nonetheless, many economists agree that deficit reductions of some degree may be necessary to ensure robust growth and avoid any issues of debt sustainability and that the magnitude of any necessary reductions may increase the longer current trends persist.[50]

[47] Harriet Torry and Anthony DeBarros, "A Recession Is No Longer the Consensus," *Wall Street Journal*, October 15, 2023, https://www.wsj.com/economy/a-recession-is-no-longer-the-consensus.

[48] See CRS In Focus IF10408, *Introduction to U.S. Economy: GDP and Economic Growth*, by Mark P. Keightley and Lida R. Weinstock.

[49] See U.S. Government Accountability Office (GAO), *The Nation's Fiscal Health: Road Map Needed to Address Projected Unsustainable Debt Levels*, GAO-23-106201, May 8, 2023, https://www.gao.gov/products/gao-23-106201; and U.S. Department of the Treasury, *Executive Summary to the Fiscal Year 2022 Financial Report of U.S. Government: An Unsustainable Fiscal Path*, April 6, 2023, https://www.fiscal.treasury.gov/reports-statements/financial-report/unsustainable-fiscal-path.html.

[50] For example, see above Treasury and GAO reports or the following reports from CBO: *The Economic Effects of Waiting to Stabilize Federal Debt*, April 28, 2022, https://www.cbo.gov/publication/57867; and *Options for Reducing the Deficit*, March 6, 2023, https://www.cbo.gov/publication/58981.

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