Hutchins Center
on Fiscal & Monetary Policy
at BROOKINGS

Federal Debt Policy in an Era of Low Interest Rates: A Guide to the Issues

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Introduction

This guide discusses issues related to the federal debt. Economists and others have worried about the long-run outlook for the federal debt for decades, recognizing that the aging of the baby boom generation would lead to budgetary pressures associated with increased spending on entitlements programs like Social Security and Medicare.

But debt has increased sharply in recent years for other reasons, including the effects of the Great Recession and the current COVID-19 recession. Looking forward, the retirement of the baby boom generation will put increasing pressure on the federal budget, and without changes in legislation, debt will continue to climb in coming decades.

As discussed in more detail below, this increase in debt has not been accompanied by the rise in interest rates that economists would have predicted. Instead, interest rates have fallen sharply. This decline in interest rates makes debt much less costly and has led some economists to rethink their stance on federal debt and federal borrowing. Most economists believe that changes in the federal budget—increased taxes or reduced spending—will eventually be necessary, but many feel that making changes now is not necessary, and that other problems confronting our country, like high and rising inequality and global climate change, should be higher priorities in the near term.

This guide develops these ideas in greater detail. The first section provides a brief overview of the federal budget, including a discussion of recent trends in federal debt and some basic information about where the government gets its money and what it spends it on. The second section discusses the long-run fiscal challenges associated with population aging. The third section discusses the economics of debt accumulation—whether high debt is a problem, and, in particular, whether recent declines in interest rates affect how policymakers should deal with the debt.

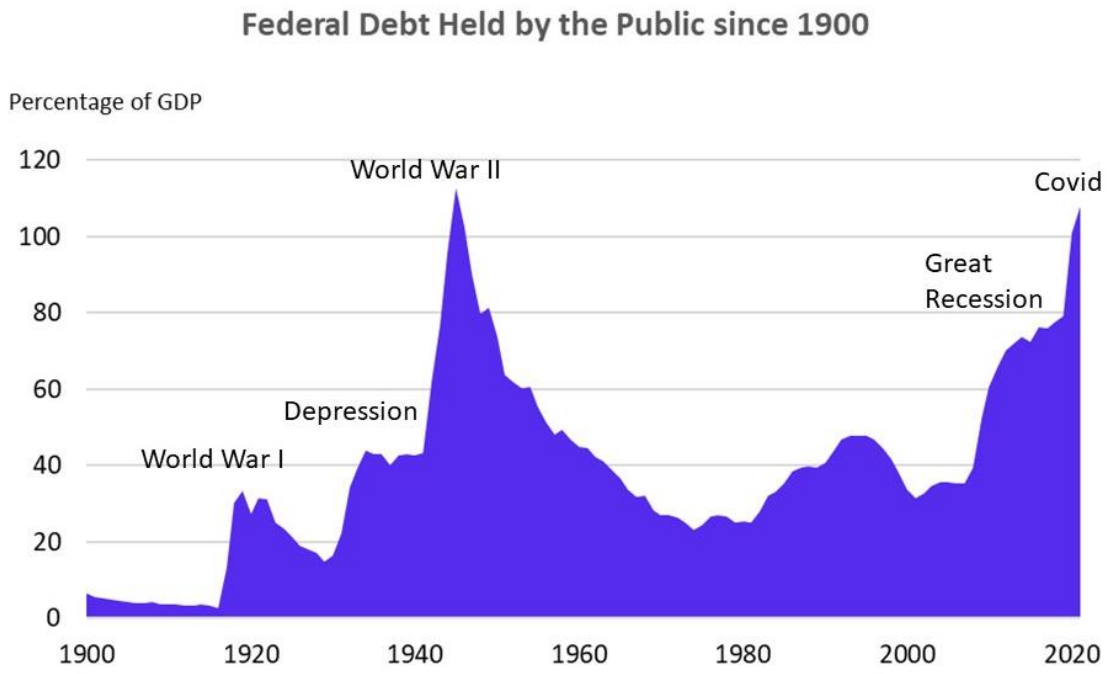
I. Background

The federal debt—the amount the federal government has borrowed from the public— is on a path to reach unprecedented levels over the next few decades. Because the economy is getting bigger over time—the result of population growth and productivity growth—the amount of debt that can be supported over time is also rising. For that reason, it is helpful to consider

debt, deficits, revenues, and outlays in relationship to Gross Domestic Product (GDP)—the value of all the goods and services produced in the economy. In 2007, the federal debt was $5 trillion, or 35 percent of GDP.

In 2019, before the onset of the pandemic, the debt held by the public was $16.8 trillion, equal to about 79 percent of our nation's economic output (measured by GDP).[1] Over the preceding 50 years, federal debt averaged just 42 percent of GDP. Historically, the highest level of debt was 106 percent in 1946, reflecting the huge run-up in borrowing during World War II.

The deep recession brought on by the COVID-19 pandemic and the very large spending increases that were enacted in response will result in sharp increases in federal debt. By the end of 2021, debt is now projected to reach 108 percent of GDP—the highest level ever recorded—and will be even larger if Congress passes additional legislation to help ease the pain of the continuing pandemic, as seems likely, or if the recession proves deeper or longer-lasting than currently projected.



Source: Congressional Budget Office

[1] Debt by the public is the federal debt less the amount held by other federal agencies, like the Social Security Trust fund. Debt held by the Federal Reserve is, however, considered debt held by the public.

What's the difference between debt and deficit?

The federal debt is the stock of outstanding borrowing—how much the government owes in total. The deficit is the *change* in that stock in a given year, or the amount of additional government borrowing. It is the difference between what the government takes in—revenues—and what it sends out—outlays, or spending.

Is the federal government a big part of the U.S. economy?

No matter how you measure it, the federal government has a large role in the economy. Revenues from 1970 to 2019 averaged 17.4 percent of GDP, while outlays averaged 20.4 percent of GDP. In 2019, total outlays were 21 percent of GDP, while revenues were 16.3 percent. The data for 2020 are not in yet, but outlays will be much higher—probably at least 30 percent of GDP—while revenues will be much lower, perhaps on the order of 12 percent of GDP—reflecting the automatic effects of the recession on taxes and spending, as well as the legislation enacted this year in response.

Where does the federal government get its money? The largest source of revenues is the individual income tax, accounting for about 50 percent of revenues, followed by payroll taxes, which account for another 35 percent. The remainder comes from corporate income taxes, estate taxes, and other taxes.

Where does the federal government spend all that money? About two-thirds of the budget goes to mandatory spending, like Social Security, Medicare, and Medicaid. These are programs for which the government does not set a spending cap in advance, but, instead, provides specified benefits to everyone who meets the eligibility criteria. For that reason, these programs are often referred to as "entitlements." For example, once Congress sets the rules for Medicare—the health insurance program for the elderly—the exact amount of spending varies from year to year based on the size of the elderly population and how much or how little they use heath care services. The other third of federal outlays, discretionary spending, is determined by Congress on an annual basis. About half of discretionary spending goes to defense. The other half includes everything from space exploration to salaries of folks who answer phones at the Internal Revenue Service: education and employment, transportation, veterans' healthcare, administration of justice, and other programs as diverse as international affairs, the FBI, and housing assistance.

What about COVID? What's been spent?

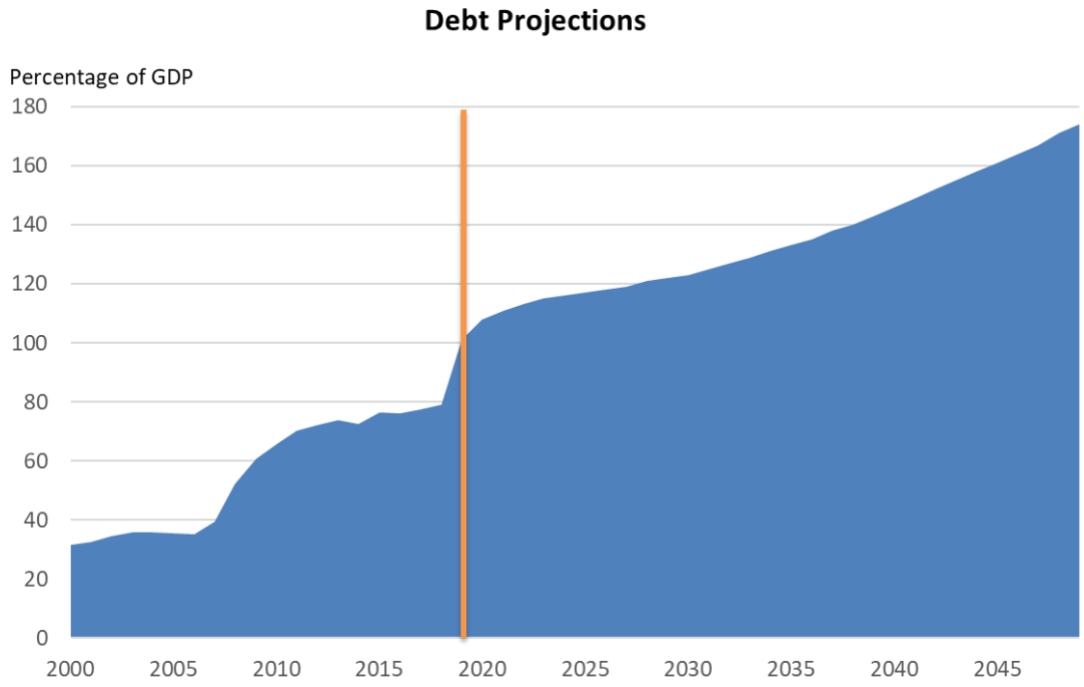
In response to the pandemic, the federal government has enacted measures to fight the pandemic and provide financial relief to families and businesses. In particular, Congress has allocated an additional $264 billion to expanding unemployment insurance, $660 billion in forgivable loans to small businesses, $280 billion in public health spending, and $293 billion in

rebate checks to taxpayers, as well as several smaller provisions. All told, this legislation is expected to increase the deficit by $2 trillion in 2020 and $400 billion in 2021.

II. Challenges Going Forward

The Congressional Budget Office (CBO) projects federal deficits and debt in future years under so-called "baseline" assumptions about tax and spending policies; the assumption is generally that current laws will remain unchanged. (For the purposes of projecting discretionary spending over the long run, the CBO assumes that annual appropriations grow with GDP.) Under this baseline, federal deficits and debt are projected to be on a steady upward path going forward. While the CBO has not released new long-term budget projections since the pandemic, the following chart is probably in the right ballpark for what the post-pandemic projections will look like. (This guide will be updated when new projections become available.)

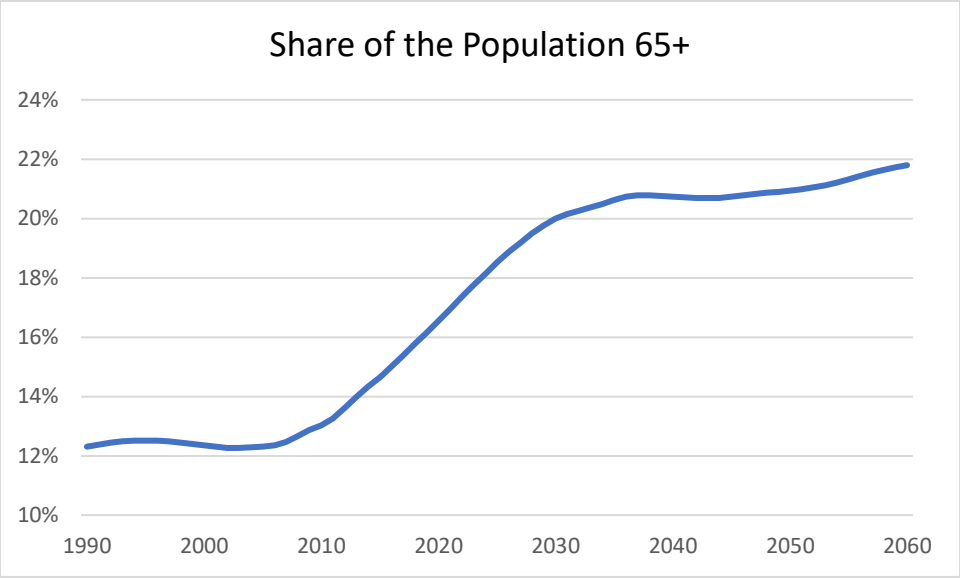
The projections show the debt climbing steadily following the sharp pandemic-induced jump. By 2030, debt will hit roughly 120 percent of GDP, and by 2050, about 180 percent of GDP. Of course, there is a great deal of uncertainty surrounding these projections—debt is affected by many factors that are hard to project, including the level of interest rates and economic growth—but the fact that, without changes in law, debt will climb over time is fairly certain.



What is driving these changes?

There are three main factors responsible for rising debt over time.

(1) **Population aging.** The population is in the midst of a demographic transition. The share of elderly in the population was 12 percent in 2000; today, it is 16 percent, and by 2030 it is projected to be 20 percent.



Source: Social Security Trustees Report, 2020.

The rapid increase in the share of the elderly in the population is the result of the aging of the baby boom generation. The first baby boomers reached age 65 in 2011, and the last ones will hit 65 in 2029. But even once the baby boomers have passed away, the share of the elderly in the population won't decline, but will continue to increase, albeit at a slower pace.

Why is that? It's mostly about fertility. The baby boomers were born at a time when the fertility rate was high–families had an average of about three children each. But fertility fell to roughly two children per family after the baby boom generation, and it has fallen further since. When fertility is high, each successive cohort is larger than the one before it. The higher the fertility rate, the lower the average age of the population. Because no one expects families to start having three children again (although of course it could happen), this transition toward an older population is expected to be permanent. In addition, continued increases in life expectancy mean that there are more people who live well beyond 65, also pushing up the size of the elderly population.

Why does this matter for the federal budget? A large share of federal outlays are spent on entitlement programs geared toward the elderly—especially Social Security and Medicare. Increases in the share of the elderly in the population put upward pressure on spending under current law, increasing spending and deficits. In 2019, for example, Social Security spending was 4.9 percent of GDP. CBO projects that, without changes, it will increase to 6.4 percent of GDP by 2040.

(2) **Rising health spending.** Everyone complains about the high cost of health spending, and indeed, as a share of GDP, health spending has been increasing for decades. Most economists think that the increase in health spending isn't the result of higher prices for the same type of health care, but, instead, higher prices for better health care. That doesn't mean that health spending is necessarily worth it, or that it wouldn't be possible to get the same thing for less, but it does mean that it's not simply "health care inflation."

Regardless, higher health expenditures mean that federal spending on health programs—mostly Medicare (the program for those ages 65+, and some younger people with certain disabilities) and Medicaid (the program for lower-income Americans) has continued to climb over time as well. Looking forward, continued rapid increases in health spending will continue to put pressure on federal budgets. Aging and rising health spending is a double whammy for the Medicare program—not only will there be a larger share of the population who is Medicare-eligible, but each person will also be increasingly costly.

CBO projects that spending on the major health programs, which include Medicare and Medicaid, will rise to 9.3 percent of GDP in 2049 from 5.2 percent in 2019. Aging accounts for a third of that increase in spending, with the remainder due to rising health care expenditures per person.

Together, rising health spending and population aging mean that the federal budget will increasingly be an entitlements budget. The CBO projects that federal spending on people over 65 will account for half of all non-interest spending by 2040, up from 40 percent in 2019.

(3) Large pre-COVID deficits. Even before COVID, the federal government was running large deficits. (These were made much larger by big tax cuts enacted in the Tax Cut and Jobs Act of 2017.) For example, the deficit in 2019 was 4.7 percent of GDP. Continued borrowing on this scale year after year inevitably leads to increasing debt.

III. Is rising debt a problem, and, if so, how worried should we be?

Why do economists worry about debt? There are a few reasons. First, government borrowing can crowd out private investment. When the government borrows from private investors, it soaks up money that otherwise might have gone into private investment, including business investment in machines, computers, buildings, and research and development. The mechanism through which this happens is through higher interest rates: When the government wants to borrow more, the demand for saving (the amount that the government, businesses, and households would like to borrow) increases. That increase in demand raises the price of saving—the interest rate. When interest rates are higher, fewer private investments seem worth it. Lower investment means lower worker productivity and lower GDP. So high debt now makes us poorer in the future. When we borrow from foreigners, domestic investment is less likely to be crowded out (instead, investment is crowded out globally). But interest payments that we need to make to foreigners in the future make us poorer as a country, in any case. (Note that these arguments assume that government debt is being used to finance consumption today. If instead it is being used to finance investment, then we won't be poorer in the future if that investment yields good returns. We return to this topic below.)

In addition, high levels of debt might have consequences for the federal budget and the ability to respond to economic conditions. First, when our debt level is high, we need to make interest payments on that debt, thus crowding out the ability to use our tax revenues for other spending priorities. Second, some worry that if debt is high, we may lose our ability to borrow large amounts easily, which could prove problematic in a crisis. This is often talked about as a lack of "fiscal space." Also, some recognize that even if we could continue to borrow even with high levels of debt, the politics of high debt may be that politicians are unwilling to borrow, even if it makes sense economically.

How high can the debt get before we get into real trouble? The truth is, no one knows. But it is clear that debt cannot continue to climb forever. Eventually, interest rates will rise as lenders will get increasingly concerned about our ability to pay back the debt and as private investment is increasingly crowded out. Thus, at some point, changes to tax and spending policies likely will have to be enacted in order to rein in deficits and stabilize the debt. We say "likely" because many things in the economy could change which might affect debt to GDP ratios. A big increase in GDP growth, for example, could lower the debt-to-GDP ratio without such policy changes. While this possibility seems remote, it is not impossible. Indeed, it is what happened after World War II to bring down the debt to GDP ratio. Other changes in the economy—some not even foreseeable right now—could likewise have big effects on taxes or spending.

What about all the debt purchased by the Federal Reserve? Does it count? And will it create inflation?

Debt held by the public excludes debt held in intergovernmental funds like the Social Security trust fund, but it includes debt held by the Federal Reserve. How much debt has the Fed bought?

To limit the economic damage done by the pandemic, the Federal Reserve—the central bank of the United States—lowered its key short-term interest rate nearly to zero (as it did back in 2008.) Then it began purchasing hundreds of billions of dollars of Treasury debt securities from investors banks in what is known as Quantitative Easing, or QE. Even though the Fed isn't lending money directly to the Treasury, the more the Fed buys, the lower the interest rate on Treasury debt in the market and lower the interest rate that the Treasury has to pay to borrow – and the more it can borrow without worrying about pushing up interest rates. More importantly, the lower long-term interest rates, the more people are willing to borrow to buy homes, expand businesses, etc., helping to stimulate the economy. (For more on the Fed's recent actions, see here.)

Between mid-March 2020 and the beginning of July 2020, the Fed's portfolio of long-term Treasury securities rose from $2.3 trillion to $3.8 trillion, an increase of $1½ trillion. Over this same period, the Treasury borrowed about $3 trillion. In essence, the Fed bought about ½ of the additional Treasury securities issued to finance the increase in the debt.

When the Fed buys government debt, does that make the debt free?

No. When the Fed buys long-term Treasuries, it increases bank reserves—the deposits banks have at the Fed. The Fed pays interest on those reserves. Right now, interest rates are near zero, so the Fed isn't paying much interest on reserves. But as the economy recovers, the Fed will begin to raise interest rates to prevent the economy from overheating and producing too much inflation. As it raises interest rates, the Fed will start paying banks for those reserves. And since the Fed turns over its operating profits to the Treasury, any increase in interest payments made to banks will lower the amount they give to the U.S. Treasury. Thus, the Treasury will have to pay interest on the debt at prevailing interest rates regardless of whether the Fed buys debt.

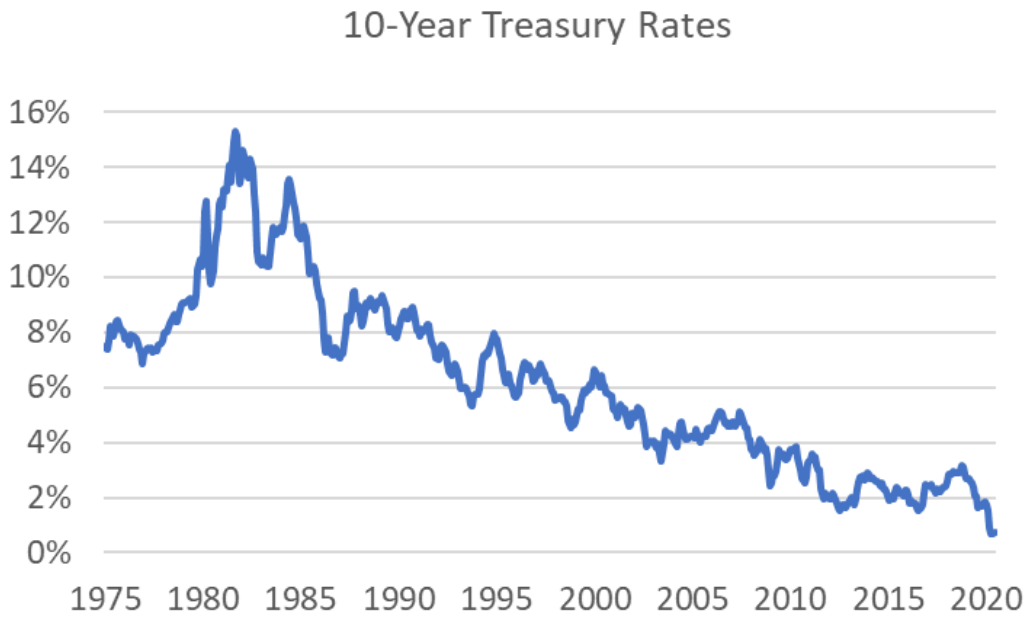
So, all that money the Fed is creating by buying Treasuries won't create inflation?

It's unlikely. The Federal Reserve's mandate is to promote maximum employment and stable prices. The Fed will in all likelihood take action—that is, raise interest rates—to prevent inflation from occurring. It is always possible, of course, that a future Federal Reserve—perhaps with a chair appointed by a populist president—would choose to allow inflation to increase sharply in order to lower the value of the debt. (Since most debt is promised in nominal dollars, higher inflation makes it easier to pay off the debt.) This would mean that the Federal Reserve

was no longer operating under its mandate, and such a policy turn could prove very costly to the economy.

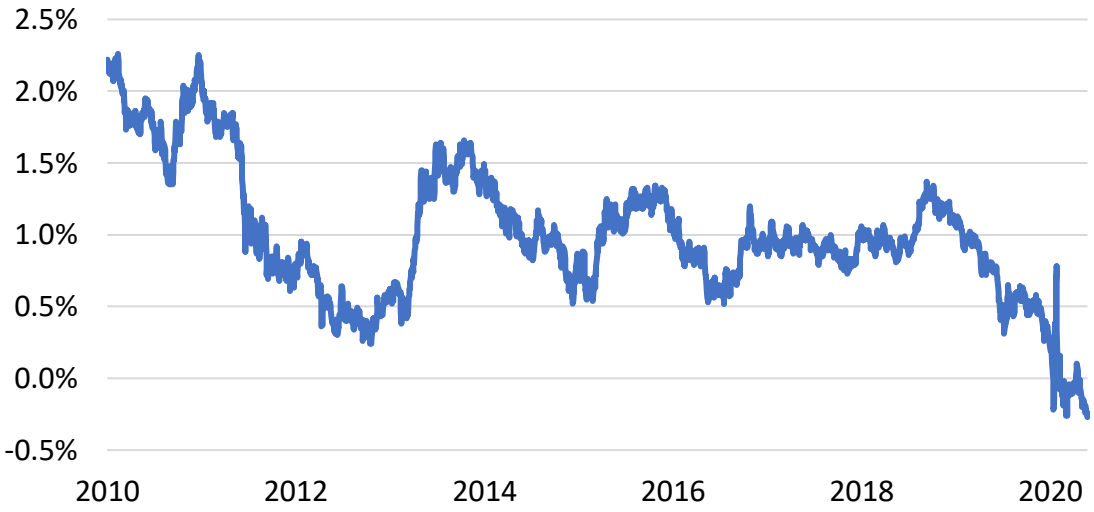
IV. Government Debt in a Low-Interest-Rate Environment

One of the most striking changes in the economy over the past few decades is the steady decline in interest rates on government debt and other assets.



Source: Federal Reserve.

Some of this decline represents falling inflation. But real rates (adjusted for inflation) have declined as well. For example, as shown below, the rate on 30-year Treasury Inflation-Indexed Securities (or "TIPS." These are securities that are adjusted by the changes in consumer price inflation in order to yield a guaranteed real rate of return) has declined from over 2 percent in 2010, to 1.5 percent by 2014, and to -0.3 percent in July of 2020. (A negative rate means that someone lending the government money will get back less money in inflation-adjusted dollars than they lent.) This decline in interest rates has occurred despite the massive build-up in debt, suggesting that other factors besides debt affect interest rates, and the relationship between debt and interest rates is more complicated than we understand. For example, it is likely that the factors that lead to higher debt—a weak economy and low productivity—also result in lower interest rates.



Source: Federal

These low interest rates drastically change the calculations of the cost of debt. Indeed, with interest rates this low, some claim that debt is "free."

Is debt free?

What does it mean for debt to be free? It means the government can borrow today, spend the money, and never have to raise taxes or lower spending in the future to pay it back. When debt is free, there is no tradeoff between taxpayers today and taxpayers tomorrow.

From the position of the federal budget, the condition for debt to be "free" is for the interest rate to be less than the growth rate of the economy. Say the government borrows $100. Federal governments are not like households. Government go on forever, and so don't ever have to pay down debt. Typically, we think that debt is sustainable so long as it isn't growing as a share of GDP. So, the total amount of debt can grow by the growth rate of the economy, and debt as a share of the economy will remain stable. What that means is that the government doesn't have to pay all the interest on the debt, it just has to pay the interest on it ("r") less the rate of economic growth ("g").

The table below goes through a very simple example. It shows what happens to the ratio of debt to GDP when the government borrows $100 and then keeps borrowing money to pay the interest on the debt—i.e., the government borrows money and then doesn't lower spending or raise taxes to service the debt.

In Case 1, the interest rate is greater than the growth rate of the economy, or, r>g. This is the situation that prevailed from 1967 through 2012 and was viewed as the norm. In this case, if the government borrows money and then doesn't cut future consumption in some way (by cutting spending directly or by raising taxes) to service the debt, the debt to GDP ratio rises. This is unsustainable. Eventually, the government will need to take action to prevent debt from entering an upward spiral of ever-growing debt. If they don't, at some point debt will be so large that lenders will require higher interest on the debt or refuse to continue lending, thereby sticking future generations with a big bill.

Impact of r and g on debt sustainability			
Case 1. r>g . Interest rate is 5% and Growth Rate of the Economy is 3%			
Year	Debt	GDP	Debt to GDP Ratio
1	$100	$1,000	10.0%
2	$105	$1,030.00	10.2%
3	$110	$1,060.90	10.4%
Case 2. r=g. Interest rate is 3% and Growth Rate of the Economy is 3%			
Year	Debt	GDP	Debt to GDP Ratio
1	$100	$1,000	10%
2	$103	$1,030.00	10%
3	$106	$1,060.90	10%
Case 3. r<g. Interest rate is 2% and Growth Rate of the Economy is 3%			
Year	Debt	GDP	Debt to GDP Ratio
1	$100	$1,000	10%
2	$102	$1,030.00	9.9%
3	$104	$1,060.90	9.8%

In Case 2, the interest rate is equal to the growth rate of the economy. This is approximately what CBO expects on average over the next 30 years. In this situation, the government can borrow $100, just keep borrowing to pay the interest, and the debt to GDP ratio never increases. Future generations will be able to borrow as easily and at the same rates as they did before. This makes it seem like debt is free.

Finally, in Case 3, the interest rate is below the growth rate of the economy. With real interest rates now negative for 30-year bonds, this might be the situation we will face in coming years. Indeed, in CBO's latest post-pandemic 10-year economic projection, the rate on the 10-year Treasury is below the growth rate of the economy in every year from 2021 to 2030. In this case, not only does debt to GDP not increase after borrowing $100 and making no payments, it actually declines, as the economy is growing faster than the stock of debt. This is indeed a win-win. Current taxpayers get to spend an extra $100, and future taxpayers could also borrow more without increasing the debt to GDP ratio.

Policy implications of low-cost debt

Although at current interest rates, debt appears free or close to free, most economists are not advocating a wholesale abandonment of budget constraints. For one, while most indicators are that interest rates will remain low for quite a while, such an outcome is not guaranteed. Indeed, just because interest rates have fallen for years for reasons that economics can't fully explain, that doesn't mean that they will stay low; they could very well increase in the future. In addition, as deficits continue to mount with the retirement of the baby boom generation, it is likely that interest rates will begin to climb as well.

But the fact that rates are so low despite the recent increase in debt does mean that the amount of debt that the U.S. can easily sustain is a lot larger than people used to think. That means there should be much less fearmongering about the debt, and more focus on other national priorities. Furthermore, with interest rates this low, now is a great time to increase public investment, because there are likely many investments the government can make that will yield returns greater than the interest rate that will have to be paid on the debt. Such investments make future generations better off, not worse.

Spending to fight the pandemic and recession

One obviously valuable investment is for the government to ramp up public health spending to try to fight the spread of COVID-19 and to continue to spend money to support the economy during the recession and recovery. Any public health spending that allows the economy to reopen safely will yield huge benefits in terms of higher GDP—which in turn means higher tax revenues and lower debt. These types of investments will undoubtedly pay for themselves, and no expense should be spared. But providing financial help to people during the recession is also likely to yield long-term benefits, in addition to easing the pain during the recession. By providing help to individuals, businesses, and state and local governments, the federal

government can set the stage for a robust economic recovery once the pandemic itself subsides.

Furthermore, it is essential that the government not remove fiscal stimulus too soon, as many believe is what happened after the Great Recession. Given the fact that the CBO expects the pandemic to hold down GDP for almost a decade, now is certainly not the time to raise taxes or cut spending in some grand bargain that addresses long-run challenges or attempts to undo the recent rise in the debt. Instead, policymakers should be focused on doing everything they can do to get the economy back up to its full potential as quickly as possible.

As former Fed chairs Ben Bernanke and Janet Yellen put it, "With interest rates extremely low and likely to remain so for some time, we do not believe that concerns about the deficit and debt should prevent the Congress from responding robustly to this emergency ….At some point, we will have to think through how to ensure the long-run sustainability of federal finances. The top priorities now, however, should be protecting our citizens from the pandemic and pursuing a strong and equitable economic recovery." (See the list of additional materials at the end of this white paper for a series of explainers that talk about the economics of the pandemic.)

Public Investment

Another priority of the government should be to increase public investment. At very low borrowing costs, many government programs are likely to yield future benefits that more than cover the service costs of the debt, suggesting that future generations will be made better off, not worse off, from deficit-financed public investment. Thus, this is an ideal time to improve our roads and bridges, improve the safety of our drinking water, increase the quality of teaching in our schools, and increase investment in research and development. Similarly, steps taken now to reduce climate change will yield large benefits to future generations.

All of these expenditures are typically viewed as investments. But recent research has demonstrated that many public expenditures that are not typically viewed as public investment—and are instead viewed as current consumption—do actually yield sizable long-run returns and therefore are a form of public investment. In particular, research has shown that aid to poor families—particularly in the form of in-kind benefits like subsidized health insurance and housing—leads to much improved adult outcomes for the children (Butcher, 2017, Hoynes and Schwanzenbach, 2017 and Hendren and Sprung-Keyser, 2020). These improved outcomes include better health, more education, higher wages, higher labor force participation, and lower incarceration rates. In order to improve both the current lot of children and the welfare of future taxpayers, as well as help tackle inequality, policymakers should increase investment in these valuable programs.

Conclusions

Federal debt has exploded in recent years to levels never seen before. In addition, structural changes in the economy—mainly related to population aging and continued increases in health spending—mean that the debt is likely to only continue to increase unless policymakers raise taxes or cut spending.

Yet despite this unprecedented rise in the debt, interest rates have been falling, and real interest rates are now negative. This suggests that the debt is much less daunting a problem than used to be the case.

While changes will eventually be necessary, now is not the time to make them. Instead, policymakers should increase spending as much as is necessary to help the economy recover from the current recession as quickly as possible, and should ramp up investment on items like infrastructure and aid to poor families.

Additional Resources:

Explainers on Fiscal Policy during COVID-19

How will the coronavirus affect state and local government budgets? https://www.brookings.edu/blog/up-front/2020/03/23/how-will-the-coronavirus-affect-state-and-local-government-budgets/

Where is the US government getting all the money it's spending in the coronavirus crisis? https://www.brookings.edu/blog/up-front/2020/03/25/where-is-the-u-s-government-getting-all-the-money-its-spending-in-the-coronavirus-crisis/

What's the government done to relieve student loan borrowers of their burden during the corona crisis? https://www.brookings.edu/blog/up-front/2020/04/16/whats-the-government-done-to-relieve-student-loan-borrowers-of-their-burden-during-the-corona-crisis/

How does unemployment insurance work? And how is it changing during the coronavirus pandemic? https://www.brookings.edu/blog/up-front/2020/07/20/how-does-unemployment-insurance-work-and-how-is-it-changing-during-the-coronavirus-pandemic/

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12. https://www.brookings.edu/blog/up-front/2020/03/12/how-does-the-coronavirus-pandemic-compare-to-the-great-recession-and-what-should-fiscal-policy-do-now/.