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Federal Deficits, Growing Debt, and the Economy in the Wake of COVID-19

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SUMMARY

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Federal Deficits, Growing Debt, and the Economy in the Wake of COVID-19

The Coronavirus Disease 2019 (COVID-19) pandemic caused a swift and deep economic downturn from which the country has yet to fully recover. In response to COVID-19, the federal government enacted expansionary fiscal policy to provide relief and stimulus to the economy. Several bills were enacted in FY2020, including the Coronavirus Aid, Relief, and Economic Security (CARES) Act (P.L. 116-136). The FY2020 federal budget deficit totaled $3.1 trillion, more than triple its FY2019 value, and the Congressional Budget Office (CBO) and Joint Committee on Taxation (JCT) project the bills enacted in FY2020 to increase FY2020-FY2030 deficits by $2.6 trillion.

Additional relief and stimulus was enacted in FY2021 in the Consolidated Appropriations Act, 2021 (P.L. 116-260), which CBO and JCT estimate would increase deficits by $1 trillion over the 2021-2031 period, $868 billion of which comes from COVID-19 related provisions. This was followed by the American Rescue Plan Act of 2021 (P.L. 117-2), enacted on March 11, 2021, which CBO and JCT estimate will increase deficits by nearly $2 trillion over the 2021-2031 period. Before P.L. 117-2 was enacted, CBO projected the FY2021 deficit to be 10.3% of gross domestic product (GDP).

To finance these deficits, the government needs to borrow money. The federal debt-to-GDP ratio rose significantly in FY2020, reaching slightly above 100%. CBO projects that deficits and debt will trend upwards in the coming decades, with the debt-to-GDP ratio surpassing 200% by 2051 under current policy. The current and projected size of deficits and the rising debt-to-GDP ratio are a topic of concern for many economists and policymakers given that FY2020 deficits and debt as a share of GDP were the largest on record since World War II. Some of the possible consequences of persistent deficit spending include the crowding out of private investment, which can in turn stunt long-term growth; increasingly large portions of the federal budget being directed toward interest payments on debt, which can crowd out other policy priorities; and an unsustainable level of debt, which can lead to a fiscal crisis.

Several economic factors are important for the sustainability of incurring debts, including interest rates, inflation, and the growth rate of real GDP. Both long- and short-term interest rates are relatively low from a historical perspective, and the Federal Reserve has indicated its intention to keep rates low for the time being, inflation has generally been below 2% for the past decade, real GDP growth has been smaller in recent decades, and real GDP fell by 3.5% in 2020 as a result of COVID-19. These are all relevant to the government's ability to service its debt and continue borrowing as needed.

Lower interest rates can lower the government's interest payments on its debt, even if the stock of debt increases. The amount of debt held by the public increased significantly in FY2020, but interest payments still fell from $375 billion in FY2019 to $337 billion as a result of lower interest rates. While rates remain low, the government is less likely to experience negative consequences of rising debt. Higher inflation would, all else equal, lower the size of the existing debt in real terms. However, rising inflation could cause the Federal Reserve to increase interest rates. While inflation is low, the nominal interest paid on debt is also likely to be low. If the economy grows faster than the debt and is higher than the interest rate paid on the debt, then, relative to the size of the economy, the debt becomes smaller. Theoretically, if a balance can be struck among the interest rate, the inflation rate, and the rate of economic growth, a rising level of debt can remain sustainable. However, the current trajectory of debt, as projected by CBO, indicates that debt will continue rising relative to GDP.

One of the largest concerns about growing debt is the scenario in which, for any number of possible reasons, investors lose confidence in the government's ability to service its debt and therefore demand significantly higher interest rates to compensate for the risk. This type of scenario has led to fiscal crises in other countries. However, the United States is, in many ways, a different case because of the wide international use of the dollar. In times of crisis, such as COVID-19, investors tend to flock to the dollar, which may allow the United States to borrow more easily and in larger amounts.

The point at which the level of U.S. debt might become unsustainable is not clear. Given the current economic landscape, the country is not likely headed to a crisis in the near term. However, depending on the speed and strength of the economic recovery and the way in which interest rates and inflation change, if at all, the size of the debt may become a more urgent concern in the future.

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Introduction

The Coronavirus Disease 2019 (COVID-19) pandemic caused widespread economic disruption. Commerce slowed, unemployment reached rates not seen since the Great Depression, and many businesses were forced to close. In response, the government enacted a series of laws aimed at providing relief to struggling individuals and businesses and stimulus to improve economic conditions, most recently the American Rescue Plan Act of 2021 (P.L. 117-2) enacted on March 11, 2021. Altogether, this resulted in large increases in the deficit in FY2020, and a large deficit is projected for FY2021 as well.

A deficit occurs when the government's expenditures are larger than its revenues. The U.S. government has generally run budget deficits for the past few decades, with the exception of a short time in the 1990s, when it ran budget surpluses. The budget deficit in FY2020 was the largest on record in dollar terms[1] and resulted in a dramatic increase in U.S. debt held by the public.[2] The debt-to-GDP ratio in FY2020 was the largest on record since World War II,[3] leading to some concerns about the sustainability of the U.S. stock and trajectory of debt. The higher the debt grows, the larger interest payments on that debt become (assuming no change in interest rates). All else equal, this can then result in higher deficits as the government needs to spend more to service the debt.

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. It is therefore necessary to discuss the current state of the budget and debt in the context of the economy and recent economic trends. This report discusses the changing macroeconomic landscape, COVID-19, and how both might influence policy considerations for deficits and the debt.

Recent Trends

The economic downturn caused by COVID-19 and the government's response to the downturn has caused a large increase in federal borrowing.[4] Several relief bills were enacted in response to COVID-19 in FY2020, most notably the Coronavirus Aid, Relief, and Economic Security (CARES) Act (P.L. 116-136), which included funds for stimulus payments, forgivable loans to small businesses, and increased unemployment benefits, among others. The deficit totaled $3.1 trillion in FY2020, equal to 14.9% of nominal gross domestic product (GDP)—the highest share

[1] Federal Reserve Bank of St. Louis, "Federal Surplus or Deficit," October 16, 2020, https://fred.stlouisfed.org/series/FYFSD.

[2] The debt held by the public includes all federal debt held by individuals, corporations, state or local governments, Federal Reserve banks, foreign governments, and other entities abroad. It does not include debt held by other parts of the federal government. For more information, see U.S. Department of the Treasury, *Frequently Asked Questions about the Public Debt*, May 5, 2020, https://www.treasurydirect.gov/govt/resources/faq/faq_publicdebt.htm.

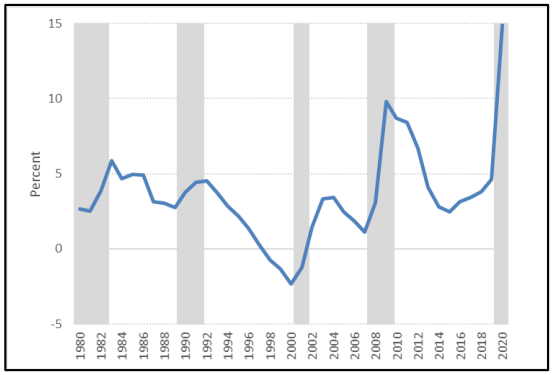
[3] Congressional Budget Office (CBO), *Monthly Budget Review: Summary for Fiscal Year 2020*, November 9, 2020, p. 1, https://www.cbo.gov/system/files/2020-11/56746-MBR.pdf.

[4] For more information about fiscal policy, deficit patterns, and the effects of COVID-19-related legislation, see CRS Report R45723, *Fiscal Policy: Economic Effects*, by Lida R. Weinstock; and CRS Report R46606, *COVID-19 and the U.S. Economy*, by Lida R. Weinstock.

of GDP since the end of World War II.[5] The relief measures enacted in FY2020 are projected to increase FY2020-FY2030 deficits by $2.6 trillion.[6]

Figure 1 and **Figure 2** below show budget and debt trends over the last several decades. As a share of GDP, both deficits and debt have trended upwards over the 1980-2020 period. Deficits do show cyclicality in line with the business cycle, although deficits have also been increasing in magnitude with every recession beginning in the early 2000s. The upward trend in debt as a share of GDP is more noticeable over the same time period. The debt-to-GDP ratio does not decrease in the same way as the deficit-to-GDP ratio has since 2000, although its growth did noticeably decelerate during the expansion prior to COVID-19. Both the deficit-to-GDP ratio and debt-to-GDP ratio increased substantially during COVID-19. How this pattern changes as a result of COVID-19 and the subsequent fiscal response is discussed in a subsequent section.

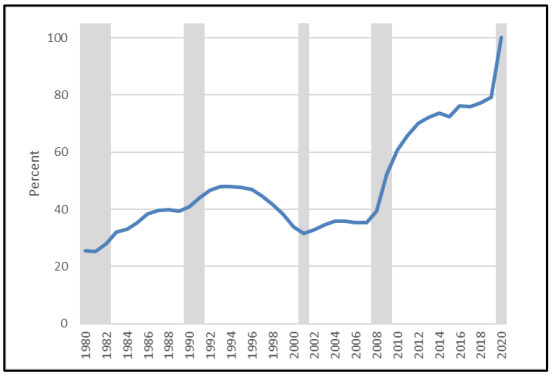
Figure 1. Deficit-to-GDP Ratio, FY1980-2020



Source: Congressional Budget Office (CBO) and Federal Reserve Economic Data (FRED).

Note: Gray bars denote recessions.

Figure 2. Debt-to-GDP Ratio, FY1980-2020



Source: CBO and FRED.

Note: Gray bars denote recessions.

In December 2020, additional relief and stimulus was enacted in the Consolidated Appropriations Act, 2021 (P.L. 116-260). The Congressional Budget Office (CBO) and the Joint Committee on Taxation (JCT) estimated that the act would increase deficits by $1 trillion over the FY2021-FY2031 period, $868 billion of which comes from COVID-19 related provisions.[7] CBO estimates that the American Rescue Plan Act of 2021 will increase deficits by over $1.8 trillion over the FY2021-FY2031 period.[8]

Fiscal Policy and Conventional Economic Theory

To provide stimulus for the economy, the government can increase spending, decrease tax revenue, or use some combination of both. To do this effectively, the government must increase

[5] CBO, *Monthly Budget Review: Summary for Fiscal Year 2020*, p. 1.

[6] CBO, *An Update to the Budget Outlook: 2020 to 2030*, September 2, 2020, p. 29, at https://www.cbo.gov/system/files/2020-09/56517-Budget-Outlook.pdf.

[7] CBO, *Summary Estimate for Divisions M Through FF H.R. 133, Consolidated Appropriations Act, 2021*, January 14, 2021, p. 1, at https://www.cbo.gov/system/files/2021-01/PL_116-260_Summary.pdf.

[8] CBO, *Estimated Budgetary Effects of H.R. 1319, the American Rescue Plan Act of 2021*, March 5, 2021, p. 2, at https://www.cbo.gov/system/files/2021-03/Estimated_Budget_Effects_of_H.R._1319_as_Engrossed_by_the_House.pdf.

the size of its deficit and borrow money to finance that stimulus. In this way, running a budget deficit will increase the stock of debt. Known as expansionary fiscal policy, increases to government spending or tax cuts can stimulate the economy during a recession by increasing aggregate demand (total spending). Increasing government spending directly increases aggregate demand, while tax cuts indirectly increase aggregate demand by increasing disposable personal income, which can then be spent.

Benefits of Expansionary Fiscal Policy

Expansionary fiscal policy can stimulate economic activity during an economic downturn, as described above. During a downturn, 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. When spending in the economy increases, employers are able to hire more employees and pay them higher wages. If not enough stimulus is provided, the supply of labor may never fully recover, which all else equal would cause potential GDP to be on a permanently lower trajectory.

As discussed, the federal government used expansionary fiscal policy in response to COVID-19. In the short term, CBO projects that the policies enacted in FY2020 will increase real GDP by 3.1% in 2021 and that real GDP will increase in total by 4.6%.[9] When additionally accounting for the Consolidated Appropriations Act and the American Rescue Plan Act, the Federal Reserve (Fed) projects that real GDP will increase by 6.5% in 2021.[10]

Short-Term Risks of Expansionary Fiscal Policy

Expansionary fiscal policy is generally thought to have certain potential 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.[11]

Rising Interest Rate Risk

When the government borrows money to finance deficits, it does so from a supply of loanable funds available to both the government and 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.[12] Rising interest rates can also decrease interest-sensitive consumer spending, such as purchases of houses, cars, or large appliances.[13] The Fed can attempt to offset this, if it desires, by lowering the targeted federal funds rate, which would tend to lower other interest rates.

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[9] CBO, *The Effects of Pandemic-Related Legislation on Output*, September 2020, https://www.cbo.gov/system/files/2020-09/56537-pandemic-legislation.pdf.

[10] Board of Governors of the Federal Reserve System, *Summary of Economic Projections*, March 17, 2020, p. 2, https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20210317.pdf.

[11] 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.

[12] 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.

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

Another potential result of rising interest rates is lowered 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. However, as foreign capital flows into the United States, this can push rates back down as the supply of loanable funds increases, potentially offsetting the initial rise in rates caused by the stimulus. Nonetheless, increased demand for U.S. investment from foreign investors also 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 exports to decrease and imports to increase.[14]

These offsetting effects 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.[15]

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.[16] 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, there is a risk of triggering a recession.

Risks of Persistent Expansionary Fiscal Policy

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 will require a growing portion of the federal budget to be directed toward interest payments on the debt, potentially crowding out other sources of government spending. Issues of debt sustainability are discussed in a later section.

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

[15] 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.

[16] 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).[17] As discussed, 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 may therefore reduce the economy's productive capacity in the long term.[18]

Crowding Out Government Spending

Rising debt may also be of concern due to its associated interest payments. All else equal, an increase in the level of public debt will result in an increase in interest payments that the government must make each year. Rising interest payments may therefore crowd out government spending on other policy priorities or require higher taxes.

The Changing Macroeconomic Landscape

The likelihood of offsetting effects from running budget deficits depends on certain aspects of the economy. In the past several decades, some economic trends have emerged in the U.S. economy that affect the ways in which fiscal policy affects the larger economy and the extent to which the federal government is able to continue to borrow money without negative consequences. This section discusses three aspects of the economy—interest rates, inflation, and real GDP growth—how each has changed over time, and how this change relates to the economics of growing debt.

Interest Rate Environment

Both long- and short-term interest rates have trended downward for the past several decades from relative highs in the 1980s. This has happened despite periods of significant budget deficits. There are several reasons why this could be occurring. The first is that the Fed has taken an increasingly accommodative stance toward monetary policy over the same time period. As shown in **Figure 3**, the Fed has targeted increasingly lower federal funds rates—the overnight rate at which banks lend to one another in the federal funds market. In response to COVID-19, the Fed lowered the target range for the federal funds rate twice in 2020, once to 1.00%-1.25% on March 3 and then to 0.00%-0.25% on March 16.[19] The Fed has indicated it will maintain the current range until such a time when "labor market conditions have reached levels consistent with the Committee's assessments of maximum employment and inflation has risen to 2 percent and is on track to moderately exceed 2 percent for some time."[20] The Fed's intention to keep the federal

[17] 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.

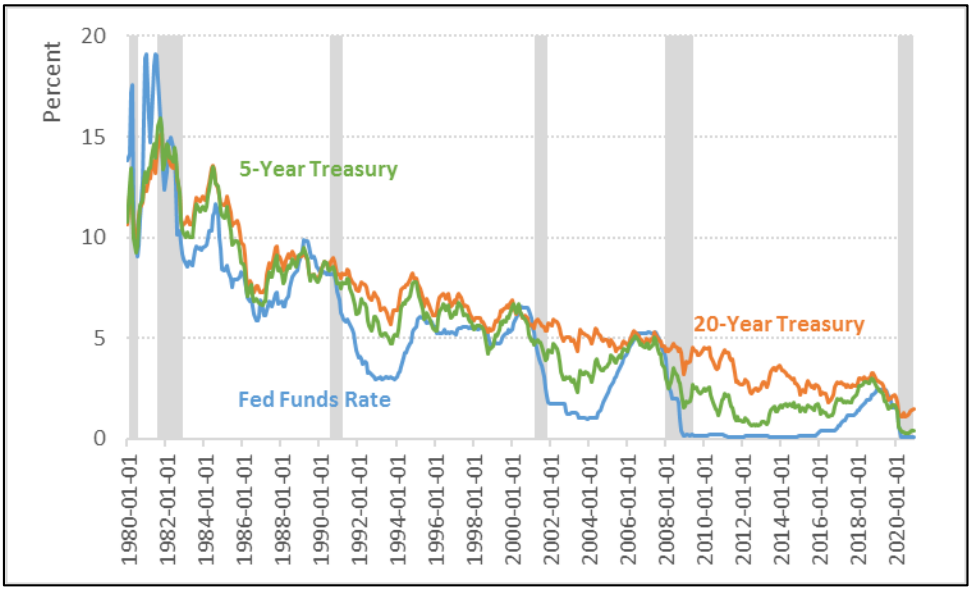
[18] Ball and Mankiw, *What Do Budget Deficits Do?*

[19] Board of Governors of the Federal Reserve System, *Policy Tools*, https://www.federalreserve.gov/monetarypolicy/openmarket.htm.

[20] Jerome H. Powell, *Semiannual Monetary Policy Report to the Congress*, Board of Governors of the Federal Reserve System, before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate, February 23, 2021, https://www.federalreserve.gov/newsevents/testimony/powell20210223a.htm.

funds target at the zero lower bound for the foreseeable future is likely to keep short-term interest rates (which are more substitutable with the federal funds rate than longer term rates) low as well.

Figure 3. Nominal Interest Rates



Source: FRED.

Note: Gray bars denote recessions.

Another reason rates, including longer-term rates, have been low is that inflation has been low. Inflation lowers the real return on investment, and as such, investors will demand higher interest rates to compensate for this. However, with inflation relatively low since the 1990s, nominal rates have been able to stay low as well. Even so, real interest rates have also been low in recent decades and especially since the 2007-2009 recession. This is posited to be due, in part, to the supply of savings exceeding the demand for investment and therefore driving down the real interest rate in the loanable funds market.[21]

CBO projects that longer-term interest rates will increase but remain relatively low throughout the next decade, with the interest rate on the 10-year Treasury reaching 3.4% in 2031.[22] If economic conditions improve more rapidly or by more than expected, or if expectations of future inflation increase, then it is possible that longer-term rates will rise more than expected as well.

Interest Rates and Debt

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. The higher the rates, the more the government pays. Lower rates can lower the government's obligations even if the stock of debt increases. For instance, despite a roughly 25% increase in the amount of publicly held debt in FY2020,[23] interest payments fell to

[21] For more information on the causes of low real interest rates, see CRS Insight IN11074, *Low Interest Rates, Part 3: Potential Causes*, by Marc Labonte.

[22] CBO, *10-Year Economic Projections*, February 2021, https://www.cbo.gov/system/files/2021-02/51135-2021-02-economicprojections.xlsx.

[23] U.S. Department of the Treasury, *Debt Position and Activity Report for September 2019 and September 2020*,

$337 billion from $375 billion in 2019, due in large part to lower interest rates.[24] Interest rates are relatively low currently, and many expect them to stay low for some time to come. If interest rates do stay low, the federal government's ability to service the debt—and do so without crowding out other policy priorities—may be less likely to be an immediate concern.

Additionally, concerns that running persistent budget deficits would lead to rising interest rates have not yet come to pass. Some interest rates have begun to rise modestly, perhaps in response to some expectations of high real GDP growth and inflation, but still remain low by historical standards.[25] If inflation proves to be a problem in the coming months and years, interest rates would likely be raised to combat this trend. The likelihood of that scenario remains highly contested.[26]

Inflation

As discussed, deficit spending can cause temporary increases in inflation. However, the federal government has been running budget deficits for decades without any significant increases in inflation. Inflation has been lower than the Fed has desired for several years. As measured by the personal consumption expenditures index, inflation has largely remained below the Fed's 2% target[27] since the 2007-2009 recession. Several stimulus and relief laws were enacted in response to the economic downturn caused by COVID-19, but inflation remained relatively low nonetheless. Given that aggregate demand was already depressed, it was less likely that stimulus measures would cause inflation than if they had been enacted during an expansion. The Fed projects that inflation will rise modestly to 2.4% in 2021 but decrease to 2% in the longer run.[28] However, some economists believe that P.L. 117-2 is too large and will result in overheating and a large temporary or sustained increase in inflation.[29]

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, which all else equal would tend to be accompanied by an increase in wages and prices. Therefore, deficit spending that brings the economy to or past full employment is associated with rising inflation.

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https://www.treasurydirect.gov/govt/reports/pd/pd_debtposactrpt.htm.

[24] CBO, *Monthly Budget Review: Summary for Fiscal Year 2020*, p. 5.

[25] Paul Kiernan, "Powell Confirms Fed to Maintain Easy-Money Policies," *Wall Street Journal*, March 4, 2021, https://www.wsj.com/articles/feds-powell-to-take-questions-on-job-market-interest-rates-bond-yields-11614872817.

[26] For example, see Peter Coy, "Summers and Krugman Debate Stimulus. Here's a Blow-by-Blow Account," *Bloomberg Businessweek*, February 12, 2021, https://www.bloomberg.com/news/articles/2021-02-12/summers-and-krugman-debate-stimulus-here-s-a-blow-by-blow-account; or Joseph E. Gagnon, *Inflation Fears and the Biden Stimulus: Look to the Korean War, Not Vietnam*, Peterson Institute for International Economics, February 25, 2021, https://www.piie.com/blogs/realtime-economic-issues-watch/inflation-fears-and-biden-stimulus-look-korean-war-not-vietnam.

[27] In August 2020, the Federal Reserve announced that instead of targeting an inflation rate of 2%, it would target an average rate of 2%. For more information, see Board of Governors of the Federal Reserve System, *Guide to Changes in the Statement on Longer-Run Goals and Monetary Policy Strategy*, https://www.federalreserve.gov/monetarypolicy/guide-to-changes-in-statement-on-longer-run-goals-monetary-policy-strategy.htm; and CRS Insight IN11499, *The Federal Reserve's Revised Monetary Policy Strategy Statement*, by Marc Labonte.

[28] Board of Governors of the Federal Reserve System, *Summary of Economic Projections*, p. 2.

[29] For example, see Olivier Blanchard, *In Defense of Concerns over the $1.9 Trillion Relief Plan*, Peterson Institute for International Economics, February 18, 2021, https://www.piie.com/blogs/realtime-economic-issues-watch/defense-concerns-over-19-trillion-relief-plan, or Lawrence H. Summers, "Opinion: The Biden Stimulus Is Admirably Ambitious. But It Brings Some Big Risks, Too," *Washington Post*, February 4, 2021, https://www.washingtonpost.com/opinions/2021/02/04/larry-summers-biden-covid-stimulus/.

The Phillips Curve is a graphical representation of the relationship between unemployment and inflation. In the past, the inverse relationship between these two variables appeared strong. However, this relationship has seemingly weakened in recent years, a phenomenon referred to as the flattening of the Phillips Curve. 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. Empirically, since the 2007-2009 recession, periods of increased deficits and low unemployment have not been met with any notable increases in inflation.

There are several explanations as to why this might be occurring. One is that the Fed has successfully targeted inflation, and therefore expectations about inflation (which in part drive inflation) are more stable than they once were.[30] Other explanations include that the relationship between the labor market and wage growth has weakened[31] or that price stickiness has decreased.[32]

Inflation and Debt

Inflation reduces the real size 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. As inflation has been both relatively low and steady in recent years, the inflation environment would, all else equal, not provide the United States any significant reduction in the real cost of issuing debt.

As discussed in the above "Interest Rate Environment" section, real interest rates (nominal rates minus inflation) have also been low in recent years. Real interest rates ultimately matter more for the economy than nominal rates do because they represent the actual cost of borrowing. In this sense, the United States has faced very low costs of borrowing.

Depending on the speed and strength of the recovery from the economic downturn caused by COVID-19, it is possible the United States could see a temporary increase in inflation, which could, in turn, cause investors to demand higher nominal interest rates to maintain or increase their real return. As the economy recovers, typically capital investment also increases, causing an increase in demand for loanable funds. As the demand for funds increase to meet (or surpass supply), the real interest rate in the loanable funds market will also rise. Rising real interest rates would increase borrowing costs and could also decrease economic activity, the combination of which would increase the real amount of money the federal government needs to devote to servicing its debt relative to the size of the economy. This is discussed in more detail in the following section about economic growth. The likelihood that inflation or real interest rates will rise notably and for a prolonged enough period to make debt sustainability a short-term issue remains low for the time being.

[30] Kristie Engemann, *What Is the Phillips Curve (and Why Has It Flattened)?*, Federal Reserve Bank of St. Louis, January 15, 2020, https://www.stlouisfed.org/open-vault/2020/january/what-is-phillips-curve-why-flattened.

[31] Sylvain Leduc and Daniel J. Wilson, *Has the Wage Phillips Curve Gone Dormant?*, Federal Reserve Bank of San Francisco, October 16, 2017, https://www.frbsf.org/economic-research/publications/economic-letter/2017/october/has-wage-phillips-curve-gone-dormant/.

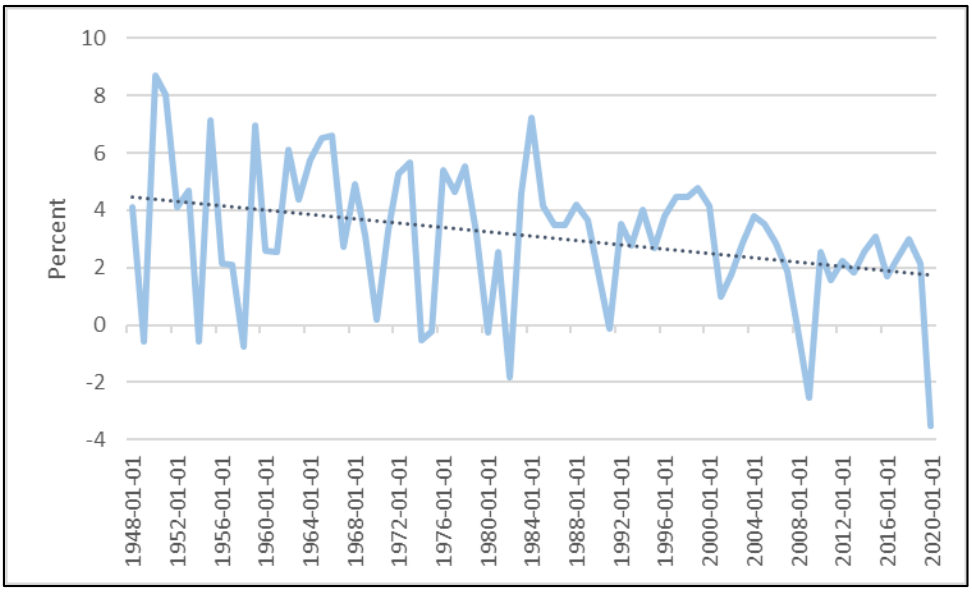
[32] Filippo Occhino, *The Flattening of the Phillips Curve: Policy Implications Depend on the Cause*, Federal Reserve Bank of Cleveland, July 10, 2019, https://www.clevelandfed.org/en/newsroom-and-events/publications/economic-commentary/2019-economic-commentaries/ec-201911-flattening-phillips-curve.aspx.

Economic Growth

The U.S. economy has experienced slower real GDP growth in recent decades than in previous decades. Since the 2007-2009 recession, annual 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%. 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 2020 was down to about 1.7%.[33] As shown in **Figure 4** below, the trend (as represented by the dotted dark blue line) in real GDP growth over the period 1948-2020 is negative.

Figure 4. Historical Trend in Real GDP Growth

1948-2020



Source: Bureau of Economic Analysis.

COVID-19 caused a significant loss to real GDP, which fell by 3.5% in 2020.[34] As mentioned previously, the Fed projects real GDP to grow by 6.5% in 2021. The Fed further projects that real GDP growth will remain elevated at 3.3% in 2022 and 2.2% in 2021 but will slow again and grow at a rate of 1.8% in the longer run.[35]

Economic Growth and Debt

When debating questions of debt sustainability, one of the most common metrics to consider is the debt-to-GDP ratio. The nominal value of the stock of debt matters less in theory than the debt-to-GDP ratio does because, so long as the economy is growing faster than the debt, the government should not have difficulty servicing the debt. 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

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

[34] BEA, *Gross Domestic Product, Fourth Quarter and Year 2020 (Second Estimate)*, February 25, 2021, https://www.bea.gov/data/gdp/gross-domestic-product.

[35] Board of Governors of the Federal Reserve System, *Summary of Economic Projections*, p. 2.

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, it is important that the nominal growth rate in the economy is larger than the average interest rate paid on debt so that the government needs to devote smaller portions of its budget to paying interest on the debt.

The trend toward lower economic growth in recent decades is, all else equal, more likely to result in higher debt-to-GDP ratios. The fact that the debt-to-GDP ratio was so high in 2020 is not necessarily cause for immediate concern, however. In a recession, typically growth decelerates and debt increases as the government uses fiscal policy to stimulate the economy. In other words, the increased rate of debt incurred is likely to result in increased rates of growth that will, in turn, help compensate for the increased debt. The larger concern is that a trend toward lower growth rates will result in a trend toward higher debt-to-GDP ratios. To reverse such a trend, the federal government would need to increase growth, decrease debt, or use a combination of the two. Economists do not always agree on the best way to accomplish a decreasing debt-to-GDP ratio, as is discussed in the following section.

Critiques of Conventional Theory

There are several alternate theories that in some way counter the tenets of conventional economic theory. These fall across the political spectrum and, in some cases, point to the changing macroeconomic context for questions of the efficacy of fiscal policy and debt sustainability. This section discusses three alternative theories: Ricardian equivalence, Modern Monetary Theory, and secular stagnation.

Ricardian Equivalence

The theory known as *Ricardian equivalence*, originally developed in the early 19th century by David Ricardo but later elaborated on by Robert Barro, disputes the idea that expansionary fiscal policy actually provides effective stimulus to the economy. The theory assumes that individuals are consumption smoothers, meaning that people behave in a way so as to spend, or consume, the same amount in all periods of their lives. A simple example of this is saving for retirement.

In the context of expansionary fiscal policy, Ricardian equivalence posits that individuals will not respond to fiscal stimulus with increased spending but rather with increased saving. In a world of perfect consumption smoothing, individuals will expect that increases in government spending or decreases in taxes now will lead to decreases in government spending or increases to taxes later. To smooth consumption, individuals will save more during periods of fiscal expansion while personal income is higher so that they can consume similar amounts later when personal income is lower. In this way, expansionary fiscal policy would not have a stimulative effect on spending in the short term, because higher public spending will be offset by lower private spending.[36]

The extent to which Ricardian equivalence holds in the real world is debated among economists, and perfect equivalence is not a feature of well-known economic forecasting or policy analysis models. Many economists accept that some amount of consumption smoothing over the lifetime of an individual does take place, but there is also some empirical evidence to suggest that this

[36] Eric Sims, *Fiscal Policy and Ricardian Equivalence*, University of Notre Dame, 2016, pp. 10-11, https://www3.nd.edu/~esims1/fiscal_policy_slides.pdf.

does not happen perfectly[37] and that fiscal stimulus does affect current consumption.[38] Evidence from the 2007-2009 recession suggests that for every dollar of government spending, GDP increased by more than one dollar,[39] which would not be expected if individuals were perfect consumption smoothers.[40]

While both personal income and personal saving have risen in aggregate during the COVID-19 pandemic,[41] this is not necessarily reason to conclude it is proof of equivalence in action. The COVID-19 economic downturn is unusual in that it is a result of a public health crisis. Many forms of spending that require in-person contact have remained low because of fears of viral spread and mandates designed to limit spread.

Modern Monetary Theory

Economists disagree about how much debt the government can issue without causing any significant distortions to the economy. A theory that has gained attention in recent years is *Modern Monetary Theory* (MMT), pioneered by economist Stephanie Kelton. At its core, MMT argues that a government that issues its own currency can print currency to meet its obligations. In this way, there would be no point at which the level of debt would be unsustainable.[42]

There has been significant pushback among economists against some of the theory's assumptions. Some, such as economist Paul Krugman, admit that fiscal stimulus may be the best way to get an economy to full employment when interest rates are low, and therefore monetary policy alone may not be able to create enough stimulus, but they disagree that this is the case in other economic contexts.[43] Others take this argument even further and argue that MMT both overestimates the effectiveness of fiscal policy and underestimates the effectiveness of monetary policy and that excessive increases in the money supply would therefore lead to an inflation crisis that could not be controlled under the theory's policy framework.[44]

Secular Stagnation

There are some economists who largely accept the conventional economic framework surrounding fiscal policy but also point out that the extent to which the government should use

[37] Scott A. Wolla, *Smoothing the Path: Balancing Debt, Income, and Saving for the Future*, Federal Reserve Bank of St. Louis, November 2014, https://research.stlouisfed.org/publications/page1-econ/2014/11/01/smoothing-the-path-balancing-debt-income-and-saving-for-the-future/.

[38] B. Douglas Bernheim, *Ricardian Equivalence: An Evaluation of Theory and Evidence*, NBER, Working Paper no. 2330, July 1987, p. 72, https://www.nber.org/system/files/working_papers/w2330/w2330.pdf.

[39] For a more in-depth discussion of fiscal multipliers, see CRS Report R46460, *Fiscal Policy and Recovery from the COVID-19 Recession*, by Jane G. Gravelle and Donald J. Marples.

[40] Daniel J. Wilson, *The COVID-19 Fiscal Multiplier: Lessons from the Great Recession*, Federal Reserve Bank of San Francisco, May 26, 2020, https://www.frbsf.org/economic-research/publications/economic-letter/2020/may/covid-19-fiscal-multiplier-lessons-from-great-recession/.

[41] BEA, *Effects of Selected Pandemic Response Programs on Personal Income, January 2021*, February 26, 2021, https://www.bea.gov/sites/default/files/2021-02/effects-of-selected-federal-pandemic-response-programs-on-personal-income-january-2021.pdf.

[42] For a more in-depth analysis of MMT, see CRS Report R45976, *Deficit Financing, the Debt, and "Modern Monetary Theory"*, by Grant A. Driessen and Jane G. Gravelle.

[43] Paul Krugman, "Running on MMT (Wonkish)," *New York Times*, February 25, 2019, https://www.nytimes.com/2019/02/25/opinion/running-on-mmt-wonkish.html.

[44] Patrick Horan, *5 Problems with MMT*, Mercatus Center, March 18, 2019, https://www.mercatus.org/bridge/commentary/5-problems-mmt.

fiscal stimulus or the extent to which debt sustainability is an immediate concern depends largely upon the economic landscape, and given that the interest rate, inflation, and growth environment have been changing, the calculus for policymakers ought to also be changing.

As discussed, since the 2007-2009 recession, interest rates have been historically low, the real GDP annual growth rate has generally been low by historical standards,[45] and inflation has generally remained below 2% despite significant expansionary monetary policy.[46] Given this situation, some economists think that the U.S. economy has been suffering from *secular stagnation*.

Secular stagnation, a theory pioneered by economist Alvin Hansen in the 1930s but popularized more recently by economists such as Lawrence Summers, considers the implications of running budget deficits and adding to the national debt during a period of long-term growth stagnation. In this context, *secular* refers to the long term. In the long term, the economy's size is dependent upon the amount of labor, capital, and technological growth. The size of the capital stock is, in turn, dependent upon the amount of private sector investment in capital. Secular stagnation is said to occur when the private sector has an excessive propensity to save rather than invest, thus inhibiting the long-term size of the economy.[47]

Proponents of secular stagnation believe that under current economic conditions, fiscal stimulus is the only viable way to spur growth and increase inflation, which would allow the Federal Reserve to raise interest rates.[48] Higher interest rates give the Fed more room to effectively use monetary policy during a recession. For example, when the Fed lowered the federal funds rate in response to COVID-19, it could do so only by a few percentage points before hitting the zero lower bound. Monetary policy might have a greater stimulative effect if rates could be significantly lowered during a downturn.

In conventional theory, fiscal stimulus that increases the debt has a future trade-off in that crowding out will bequeath a smaller economy to future generations. Proponents of secular stagnation believe this trade-off is currently desirable because crowding out is unlikely to be significant during secular stagnation, in which case the benefits of creating sustained growth will outweigh it. Until such a time when the economy is no longer in a period of secular stagnation, theorists argue that debt sustainability is not a problem because fiscal stimulus contributes to growth and low interest rates keep interest payments on the debt relatively low.

Policy Concerns

The size of deficits and debt can impact policy decisions. This section discusses two often-discussed questions surrounding fiscal policy and the growing debt.

[45] BEA, *National Income and Product Accounts*, https://www.bea.gov/products/national-income-and-product-accounts.

[46] BEA, *National Income and Product Accounts*.

[47] Lawrence H. Summers, "The Age of Secular Stagnation: What It Is and What to Do About It," *Foreign Affairs*, March/April 2016, https://www.foreignaffairs.com/articles/united-states/2016-02-15/age-secular-stagnation.

[48] Lawrence H. Summers, "Accepting the Reality of Secular Stagnation," *International Monetary Fund Finance and Development*, vol. 57, no. 1 (March 2020), https://www.imf.org/external/pubs/ft/fandd/2020/03/larry-summers-on-secular-stagnation.htm.

At What Point Is It Appropriate to Remove Stimulus?

COVID-19 caused a swift and deep economic downturn the likes of which had not been seen since the Great Depression. As a result, both Congress and the Fed implemented unprecedented relief and stimulus policies. Following these policies, several unusual phenomena occurred, such as record-breaking stock prices, a generally robust financial sector, and overall increases in personal income across 2020. Nonetheless, COVID-19 has hurt some industries and individuals more than others.[49] Unemployment remains elevated, and the level of real GDP remains depressed.

The economic downturn caused by COVID-19 is unusual in that many aspects of dampened demand have been caused by the nature of the public health crisis as opposed to a problem with economic or financial fundamentals. As such, it is possible that aggregate demand will rebound quickly once the health crisis comes to an end. In this way, the current situation may differ from past recessions, and the need for stimulus may diminish quickly. However, the longer the pandemic persists, the more likely there are to be lasting impacts that could affect aggregate demand and supply even once the crisis has passed. Given the uneven nature of the impacts of COVID-19, it might further be expected that the recovery will be uneven, which could also result in the need for additional targeted stimulus.

No consensus exists in economic or policy communities regarding how long or how much stimulus is appropriate as it relates to recessions generally or COVID-19 specifically. One might look to past fiscal stimulus to help answer these sorts of queries, but economists continue to debate the efficacy and timing of past stimulus. For example, there is debate in the economic community about the effectiveness of the fiscal response to the 2007-2009 recession, with one of the concerns being that stimulus was removed too soon.[50]

As it relates to COVID-19, many economists are concerned about the growing debt and the historically large debt-to-GDP ratio. However, many also feel that stimulus should not be withdrawn until the crisis is over and the economy is fully recovered.[51] Others believe that stimulus should be eased and deficit-reduction measures put in place sooner rather than later.[52] Still others argue that stimulus should have already been removed and that short-term gains based on deficit spending will hurt longer term growth and stability as future generations are forced to pay for the economic decisions of today.[53]

To some extent, even if in agreement about the economic fundamentals of a situation, economists may proffer different policy advice. For example, one economist may prefer to continue stimulus while another may not because the former believes that the risks of a slow or incomplete recovery

[49] For more details on hard-hit industries, see CRS Insight IN11564, *COVID-19: Employment Across Industries*, by Lida R. Weinstock.

[50] Gerald A. Carlino, *Did the Fiscal Stimulus Work?*, Federal Reserve Bank of Philadelphia, *Economic Insights*, vol. 2, no. 1 (First Quarter 2017), pp. 6-16.

[51] For example, see Committee for a Responsible Federal Budget, *Policymakers Should Avoid Austerity in Addressing the Debt*, November 25, 2020, http://www.crfb.org/blogs/policymakers-should-avoid-austerity-addressing-debt; and Richard Kogan and Paul N. Van De Water, *Rising Federal Debt Should Not Shortchange Response to COVID-19 Crisis*, Center on Budget and Policy Priorities, September 9, 2020, https://www.cbpp.org/research/federal-budget/rising-federal-debt-should-not-shortchange-response-to-covid-19-crisis.

[52] For example, see Sita Slavov and Alan Viard, "Sound the Alarm on the Federal Debt," *The Hill*, November 23, 2020, https://thehill.com/opinion/finance/527146-sound-the-alarm-on-the-federal-debt?rl=1.

[53] Veronique de Rugy, *As Bastiat Would Say, Peer Past the Obvious with Pandemic Policies*, Mercatus Center, July 2, 2020, https://www.mercatus.org/commentary/bastiat-would-say-peer-past-obvious-pandemic-policies.

are greater than the risks of persistent stimulus, while the latter believes the opposite to be true. A significant but unlikely risk currently is that the fiscal path becomes unsustainable. This risk is discussed in more detail in the following section.

Debt Sustainability

Debt sustainability is an issue with widespread and significant economic ramifications. Persistent fiscal stimulus can result in a rising debt-to-GDP ratio and lead to an unsustainable level of debt. A rising debt-to-GDP ratio can be problematic if the perceived or real risk of the government defaulting on that debt begins to rise. As the perceived risk of default begins to increase, investors will demand higher interest rates as compensation. If rates become high enough fast enough, 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.[54]

Fiscal crises 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 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.[55] Foreigners make up one of the largest categories of holders of U.S. debt,[56] and some believe that foreigners might be more skittish about dollar confidence than Americans are, although this has not been proven.

To date, it does not appear that the United States has an immediate concern with respect to sustainability given that interest rates are historically low,[57] although the unpredictability of interest rates has led to some calls for caution.[58] If investors currently thought the debt was unsustainable, interest rates would likely not be so low. However, investor sentiment and interest rates can both change rapidly.

The point at which debt might become unsustainable is not clear. The debt-to-GDP ratio in FY2020 was the highest since World War II and is projected to remain high given the ongoing pandemic and recession.[59] The debt cannot grow faster than GDP forever, but future policy changes could alter the current trajectory for the better (or worse).

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[54] 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.

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

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

[57] Olivier Blanchard, *Reexamining the Economic Costs of Debt*, Peterson Institute for International Economics, November 20, 2019, https://www.piie.com/commentary/testimonies/reexamining-economic-costs-debt.

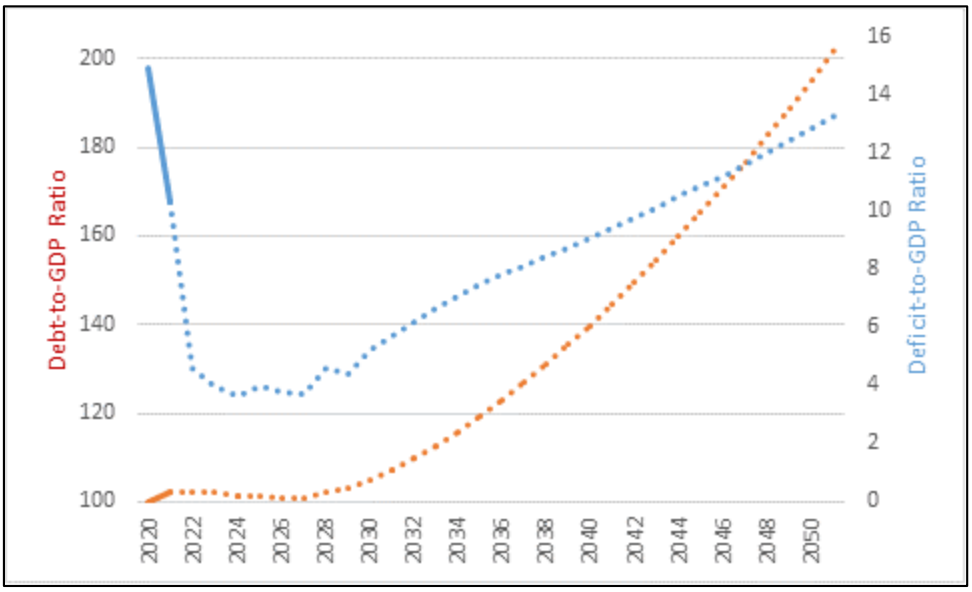
[58] John Cochrane, "Debt Denial," December 9, 2020, https://johnhcochrane.blogspot.com/2020/12/debt-denial.html.

[59] CBO, *Monthly Budget Review: Summary for Fiscal Year 2020*, p. 1.

Projections of the Deficit and Debt

CBO publishes annual reports that include long-term budget projections for 30 years, assuming no changes to tax and spending laws. As shown in **Figure 5**, CBO projects a deficit-to-GDP ratio of 10.3% in FY2021, lower than in FY2020 but still high by historical standards. Deficits are then expected to decrease further as the pandemic subsides and the economy recovers but remain relatively high and begin to increase again in the latter half of the decade. In the longer term, this trend is expected to continue, resulting in a projected deficit-to-GDP ratio of 13.3% by FY2051. Given the expected trend in deficit spending, debt is likewise expected to rise substantially. As shown in **Figure 5**, CBO predicts a debt-to-GDP ratio of 102% in FY2021, 107% in FY2031, and 202% by FY2051.[60] These projected increases have led to concerns about the growth and sustainability of the debt.

Figure 5. Deficit and Debt Projections, FY2021-FY2051



Source: Congressional Budget Office.

Notes: FY2020 included for reference and is not a projection.

"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: "the 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."[61] The purest definition of *debt sustainability* is whether or not a country is able 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 fiscal crisis.

[60] CBO, *The 2021 Long-Term Budget Outlook*, March 2021, p. 2, https://www.cbo.gov/system/files/2021-03/56977-LTBO-2021.pdf.

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

That being said, there are those who have attempted to quantify such a tipping point. In 2010, economists Carmen Reinhart and Kenneth Rogoff 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.[62] 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.[63] Reinhart and Rogoff maintain the soundness of their conclusions but have admitted to the coding errors.[64]

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.[65] This research, or that of Reinhart and Rogoff, suggest the United States should already be seeing detrimental effects due to the size of the debt. As of yet, this appears not to be the case.

More recently, the Federal Reserve Bank of Kansas City published research about potential default tipping points for the debt-to-GDP ratio. They 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%.[66] According to this model, the United States does not currently run a significant risk of being unable to meet its debt obligations.

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[62] Carmen M. Reinhart and Kenneth S. Rogoff, "Growth in a Time of Debt," *American Economic Review*, vol. 100 (May 2010), pp. 573-578.

[63] 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.

[64] 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.

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

[66] 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/.

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