# Fiscal Sustainability: High Stakes and Low Interest

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## ABSTRACT

This study reviews the applicability of new definitions of fiscal sustainability that place greater emphasis on the historical trend of falling nominal interest rates. We explore how these now-broadly applied definitions are misleading and potentially dangerous. In addition, it is important to assess the underlying reasons why economists and policymakers have shied away from using the debt ratio as a measure of fiscal sustainability in recent years. Public choice theory informs us that new definitions of fiscal sustainability may be largely politically motivated, with policymakers operating within a myopic framework that benefits special interests in the short term while burdening wider society in the long term. The idea that the debt ratio "does not matter" or that the measure is not useful for measuring sustainability tends to overlook the preponderance of economic literature on fiscal sustainability, debt risk premia, and the debt-growth nexus.

JEL codes: E4, E6, G1, H3, H5, H6

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During periods of high and growing federal government debt levels in the early 1990s and following the global financial crisis of 2007–2008 (the Great Financial Crisis), economists and policymakers acknowledged the costs and looming dangers of an unsustainable fiscal trajectory.[1] In light of these concerns, policymakers reduced public expenditure (as a share of GDP) in the 1990s to sustainable levels and commissions were established in 2010 in an attempt to achieve fiscal sustainability in the long run.[2] Following the 2020 COVID-19 recession, the debt-to-GDP ratio of the United States now exceeds the size of the economy for the first time since World War II. What is most intriguing about this dangerous fiscal milestone is that this time around, broad acknowledgment of the unsustainability of our fiscal trajectory is largely absent. Instead, several economists have propounded new definitions of fiscal sustainability that place greater emphasis on real interest rates and the interest rate–minus–growth differential ($r - g$).

This study reviews the applicability of new definitions of fiscal sustainability in light of our current fiscal condition and explores how these now-broadly applied definitions are misleading and potentially dangerous. In addition, it is important to assess the underlying reasons why economists and policymakers have shied away from using the debt ratio (debt held by the public as a share of GDP) as a measure of fiscal sustainability in recent years. Public choice theory informs us that new definitions of fiscal sustainability may be largely politically motivated, with policymakers operating within a myopic framework that benefits special interests in the short term while burdening wider society in the long

1. Stephen G. Cecchetti, M. S. Mohanty, and Fabrizio Zampolli, "The Real Effects of Debt" (BIS Working Paper No. 352, Bank of International Settlements, Basel, Switzerland, September 2011).
2. National Commission on Fiscal Responsibility and Reform, *The Moment of Truth* (Washington, DC: The White House, 2010), https://www.ssa.gov/history/reports/ObamaFiscal/TheMomentofTruth12_1_2010.pdf.

term. The idea that the debt ratio "does not matter" or that the measure is not useful for measuring sustainability tends to overlook the preponderance of economic literature on fiscal sustainability, debt risk premia, and the debt-growth nexus.

This study starts by observing the current fiscal condition of the United States, including a medium-to-long-term consideration of our debt trajectory. We then explain how shifting fiscal norms with regard to our debt trajectory are changing the way in which economists perceive the risks of growing our debt ratio into the foreseeable future. These new approaches to issues of debt sustainability place greater emphasis on the historical trend of falling nominal interest rates, based on different theories for why this trend might continue for years to come. We then review new definitions of fiscal sustainability promoted by some of today's most prominent economists. We critically assess how these new definitions and underlying assumptions tend to overlook the preponderance of economic literature on fiscal sustainability, debt risk premia, and the debt-growth nexus. Before reviewing the risks inherent in acting on these new definitions of fiscal risk, we explain how factors of political economy are likely key drivers of this shift in economic theory as new measures of fiscal sustainability act as an endorsement of policymakers' goals of appeasing the myopic interests of their constituents. Finally, we review the inherent risks of ignoring the upward trajectory in our debt ratio, with the inevitable consequence of an eventual fiscal crisis and long-term economic stagnation. We conclude the study by arguing that policymakers should reject new definitions of fiscal sustainability that focus on interest rates and instead continue to use traditional measures of fiscal sustainability for assessing the long-run risks associated with our debt trajectory.

## THE CURRENT FISCAL CONDITION OF THE UNITED STATES

For the first time since World War II, the debt held by the public as a share of GDP has surpassed 100 percent; we call this ratio the "debt ratio." Along with projected growth in net interest payments, another significant contributor to expected future growth in debt levels is the increase in Social Security expenditures (due to the aging of the population) and in Medicare and other major health care programs. Many economists use the debt ratio as a key metric for debt sustainability. For example, the Treasury's *Financial Report of the United States Government (FY20)* summarizes: "A sustainable fiscal policy is defined as

one where the ratio of debt held by the public to GDP (the debt-to-GDP ratio) is stable or declining over the long term."[3] In a similar vein, former Federal Reserve chairman Ben Bernanke defined fiscal sustainability in 2011 as "a situation in which the ratio of federal debt to national income is stable or moving down over the longer term."[4]

By these very definitions, US fiscal policy today is not sustainable. Not only is our debt ratio at the highest level in peacetime history, but also our future budgetary outlook is even bleaker. In May 2021, the Office of Management and Budget (OMB) released the president's 2022 proposed budget in which it forecasts that the debt ratio will reach 117 percent by 2031.[5] Contradicting traditional definitions of fiscal sustainability, this same OMB document refers to the proposed 2022 budget, which expands the debt substantially, as "Putting the Nation on a Fiscally Responsible Path." In the medium to longer term, the Congressional Budget Office (CBO) forecasts that the debt ratio will exceed 200 percent, or twice the size of the economy, by 2051.[6] Looking further forward, the Government Accountability Office (GAO) predicts that the debt ratio will continue to grow substantially, reaching well over 400 percent within 75 years.[7] One reason for this expected growth is that policymakers face increasing deficits in Social Security and Medicare as the population ages, which will undoubtedly worsen our already dire fiscal trajectory if they fail to muster the political will to cut benefits or raise Federal Insurance Contributions Act taxes.

The fact that our fiscal condition is unsustainable raises the question, "Why are economists and policymakers not talking about the debt?" More than this, why are they instead telling us that the debt does not matter or that the current budgetary trajectory is actually "fiscally responsible"?[8]

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3. Department of the Treasury, *Financial Report of the United States Government (FY20)* (Washington, DC: Bureau of Fiscal Service, 2021).
4. Ben S. Bernanke, "Fiscal Sustainability" (speech at the annual conference of the Committee for a Responsible Federal Budget, Washington, DC, June 14, 2011, https://www.federalreserve.gov/newsevents/speech/bernanke20110614a.htm).
5. Office of Management and Budget, *Budget of the U.S. Government (Fiscal Year 2022)* (Washington, DC: Office of Management and Budget, 2021), https://www.whitehouse.gov/wp-content/uploads/2021/05/budget_fy22.pdf.
6. Congressional Budget Office, *The 2021 Long-Term Budget Outlook* (Washington, DC: Congressional Budget Office, 2021), https://www.cbo.gov/publication/56977.
7. Government Accountability Office, *The Nation's Fiscal Health* (Washington, DC: Government Accountability Office, 2021), https://www.gao.gov/assets/gao-21-275sp.pdf.
8. Treasury Secretary Janet Yellen before the House Subcommittee on Financial Services and General Government in which Yellen referred to the president's plans to grow the debt ratio to 117 percent

## SHIFTING EMPHASIS TOWARD LOW-TRENDING INTEREST RATES

In November 2017 at a hearing before the Joint Economic Committee, then-chair of the Federal Reserve Janet Yellen warned policymakers that she was very worried about the sustainability of the US debt trajectory.[9] Yellen stressed that "when you look at, for example, CBO's long-term budget projections, it is the type of thing that should keep people awake at night." She argued that as the debt-to-GDP ratio moves up, "this should be a very significant concern." Four years later, with a debt ratio 30 percentage points higher, now–Treasury secretary Janet Yellen describes our current fiscal condition and the president's plan to significantly increase the debt as "a fiscally responsible program."

It is not an improvement in our fiscal condition over the past 4 years that explains Yellen's change of tone on debt sustainability—it is the broadly applied new measures of fiscal sustainability that have gained prominence during this time. Economists are increasingly rejecting traditional definitions of fiscal sustainability in favor of new economic theories that place greater emphasis on real interest rates and the interest rate–minus–growth differential ($r - g$).

Although the debt-to-GDP ratio is a useful metric for observing a nation's fiscal trajectory, it is by no means an infallible metric for measuring our proximity to a sovereign crisis. In the 1980s, the US debt-to-GDP ratio was below 40 percent, yet interest payments on the debt totaled 3 percent of GDP—significantly more than Medicare and Medicaid spending combined. At the other extreme, Japan today has a debt ratio well above 200 percent but has yet to face a serious sovereign debt crisis. Empirical research demonstrates that a high debt ratio reduces a nation's ability to achieve robust rates of economic growth[10] or to respond effectively to a financial crisis.[11] It is also a valuable tool for observing fiscal trends. A debt ratio that is low and stable or high and falling

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by 2031 as "fiscally responsible." See Janet Yellen, *Department of the Treasury Oversight Hearing. Financial Services and General Government Subcommittee, May 27, 2021*, https://appropriations.house.gov/events/hearings/department-of-the-treasury-oversight-hearing.

9. *The Economic Outlook with Federal Reserve Chair Janet Yellen* (Washington, DC: Joint Economic Committee, Congress of the United States, 2017), https://www.jec.senate.gov/public/_cache/files/2c14e312-37b7-4c5e-8163-5a6b11665b2c/the-economic-outlook-with-federal-reserve-chair-janet-yellen---1970-.pdf.

10. Jack Salmon, "The Impact of Public Debt on Economic Growth," *Cato Journal* 41, no. 3 (2021): 487–509.

11. Christina Romer and David Romer, *Fiscal Space and the Aftermath of Financial Crises: How It Matters and Why* (Cambridge, MA: National Bureau of Economic Research, 2019).

indicates a more fiscally sustainable condition than a debt ratio that is high and growing.

Real and nominal interest rates have been on a steady downward trend since 1980. Different theories have been floated to explain that trend: Federal Reserve policies of low rates and quantitative easing, lower investment demand and/or higher savings rates, and an aging population. Although these factors may have had an impact, they do not tell us very much about the persistence and future trajectory of the trend. On this we agree with economist John Cochrane who points out that these factors may be the icing on the cake, but they are not the cake itself. His preferred explanation is the disastrous and persistent slowdown in long-term growth. Indeed, as Cochrane points out, GDP, which grew annually by 4.5 percent in the 1960s and 3 percent in the 1970s, had a growth spurt in the late 1990s, and then settled down to less than 2 percent annually now.[12] Alternative analyses challenge Cochrane's theory by utilizing data series going back to the 1800s and finding little positive correlation between long-term interest rates and trend growth rates. One Federal Reserve study found that private sector professional forecasts and historical data provide little evidence for a linkage between long-run potential growth rates and interest rates, suggesting a greater risk that future interest rates may be higher than expected.[13]

A second theory argues that as the US population ages over time, people's desires shift toward increasing savings and reducing labor force participation. Economists have calculated that the impact of an aging population on global nominal interest rates accounts for as much as 90 basis points of the decline between 1980 and 2015.[14] However, the fact that past demographic trends placed downward pressure on nominal rates does not mean future demographic changes will have the same effect. As the population shifts from middle aged toward retirement age in the coming years, it is likely that savings rates will decline as retirees draw down their assets. One International Monetary Fund (IMF) analysis of demographics and the behavior of interest rates forecasts that bond yields could converge back to mean historic rates by 2030.[15] Whereas the

12. John Cochrane, "Low Interest Rates and Government Debt," Hoover Institution IGIER policy seminar, 2021.
13. Sylvain Leduc and Glenn Rudebusch, "Does Slower Growth Imply Lower Interest Rates?" (FRBSF Economic Letter, Federal Reserve Bank of San Francisco, 2014).
14. Lukasz Rachel and Thomas D Smith, "Secular Drivers of the Global Real Interest Rate" (Bank of England Working Paper No. 571, Bank of England, London, 2015).
15. Carlo A. Favero, Arie E. Gozluklu, and Haoxi Yang, "Demographics and the Behavior of Interest Rates," *IMF Economic Review* 64 (2016): 732–76.

demographic factors of the past have placed downward pressures on nominal rates, the impact of future demographic changes is less certain.

Another theory advocated by New Keynesian economist and former Federal Reserve chair Ben Bernanke is that a growing debt ratio driven by large budget deficits is not a cause for concern as it simply reflects growing demand for safe assets in the form of US Treasuries.[16] The safe asset theory of public debt focuses on the demand side of increased debt issuance and largely overlooks the political economy factors on the supply side of debt dynamics.

Although the issuance of debt during a financial crisis (i.e., the Great Financial Crisis or the COVID-19 pandemic of 2020–2021) might be justified on the grounds that financial restraints become tighter during such crises, it does not hold during periods outside of financial crises. For example, in the three decades leading up to the Great Financial Crisis, financial conditions did not tighten; on the contrary, financial deregulation loosened conditions during this time, which significantly increased private sector leverage. Household debt-to-GDP increased from 44 percent in 1975 to 98 percent in 2007.[17] The safe asset theory of debt would, therefore, predict that such a loosening of financial constraints would lead to a decrease in public debt, but in reality, total public debt-to-GDP doubled during this period.

Another argument often made by advocates of the safe asset theory is that debt issuance is largely driven by foreign demand for US Treasuries owing to the "global savings glut."[18] Starting in the late 1990s (around the time of the Asian financial crisis), foreign nations began significantly increasing their holding of US debt securities. The theory holds that this phenomenon of safe asset demand drives down interest rates on US Treasuries and, therefore, lowers the cost of borrowing for government. This phenomenon is largely viewed as a green light for government to continue spending and borrowing at low interest rates.

On closer inspection, the issuance of more debt cannot be fully explained by increased globalization in recent decades. Public debt was on an upward trajectory long before the late 1990s and the beginning of the global savings glut. In

16. Ben Bernanke, Carol Bertaut, Laurie Pounder DeMarco, and Steven Kamin, "International Capital Flows and the Returns to Safe Assets in the United States, 2003–2007" (Discussion Paper No. 1014, Board of Governors of the Federal Reserve System International Finance, Washington, DC, February 2011).
17. Bank of International Settlements, *Total Credit to Households and Non-Profit Institutions Serving Households. Credit to Non-Financial Sector* (Basel, Switzerland: Bank of International Settlements, 2021).
18. Ben S. Bernanke, "The Global Saving Glut and the U.S. Current Account Deficit" (remarks at Virginia Association of Economists, Richmond, Virginia, March 10, 2005).

fact, debt levels decreased in the late 1990s as foreign holdings of US Treasury securities grew substantially. The share of US debt held by foreign investors was relatively stable (around 17 to 20 percent) from 1975 to 1995, yet total public debt doubled during this period.[19] Similarly, from 2012 to 2021, the foreign share of US public debt fell from 49 to 32 percent, yet total debt grew significantly during this time. The safe asset theory would suggest that the opposite dynamics would occur during such periods of stagnant or declining foreign demand for US debt.

A 2019 study published by the Bank of International Settlements examines whether increasing global demand for safe assets (US Treasuries) is driving large budget deficits and subsequent debt.[20] The author concludes the study by noting that

> the risk of an excess of US Treasury securities seems more clear and present than any shortage. And it would be hard to blame the US federal government's trillion dollar deficits so far as the eye can see (US Treasury, 2019) on the demand from central banks. The world economy may have already passed "peak reserves" in 2014, so the recent surge in the US federal government's debt owes nothing to official demand.

When observing measures of fiscal sustainability, demand-side theories of debt dynamics are more of a distraction than a valid explanation for our fiscal woes. Instead, our attention should be drawn to the serious dynamics of political economy that drive deficits and debt higher. Both foreign demand for safe assets and theories of financial restraint fail to explain why government continues to increase public debt levels. More important, even if these demand-side theories were valid, that would not justify worsening our fiscal condition by increasing the debt further to satiate foreign demand for safe assets. The lack of fundamental understanding of the cause of the downward trend of real interest rates, which both Jason Furman and Lawrence Summers acknowledge, should give pause to those who blithely assume that low-trending interest rates are here to stay.

New Keynesian economists and progressive economists, including Olivier Blanchard, Lawrence Summers, Jason Furman, and Jared Bernstein, have been strong advocates for the argument that the debt ratio does not matter. The key underlying theme of their new definitions of sustainable budgeting is that

19. Joshua Aizenman and Nancy Marion, "Using Inflation to Erode the US Public Debt," *Journal of Macroeconomics* 33, no. 4 (2011): 524–41.
20. Robert McCauley, "Safe Assets: Made, Not Just Born" (BIS Working Paper No. 769, Bank of International Settlements, Basel, Switzerland, 2019).

persistently low interest rates have fundamentally changed how we should measure fiscal sustainability.

## NEW DEFINITIONS OF FISCAL SUSTAINABILITY AND WHY THEY ARE NOT ONLY WRONG BUT ALSO DANGEROUS

In his seminal 2019 study, "Public Debt and Low Interest Rates," French economist Olivier Blanchard argues that with interest rates on public debt remaining below rates of economic growth, public debt may have no fiscal cost.[21] Economists refer to this phenomenon as the interest rate–minus–growth differential ($r - g$). Even though this theory is an interesting mental experiment, there are several issues with the assumptions and arguments that underlie this economic theory of debt dynamics, including the fact that it is not applicable to the US fiscal situation.

First, Blanchard adopts a debt model that assumes a zero primary balance. He uses this zero–primary balance assumption to argue correctly that under this scenario, as long as $r$ remains below $g$, a one-time increase in the debt is only temporary as debt levels will eventually decrease over time. The United States, however, has not experienced a zero primary balance in 2 decades, and current budget deficits are around 16 percent of GDP and are forecast to remain at heightened levels into the foreseeable future.[22] With the 2021 budget deficit forecast to be 16.7 percent, nominal GDP would need to grow by at least 16.7 percent just to keep the debt ratio at its current level. For reference, nominal annual GDP growth has averaged 3.5 percent since the Great Recession. Once we account for actual primary balances in the $r - g$ differential, it becomes increasingly evident that $r - g$ is not a very helpful metric for observing fiscal sustainability.

A second problematic assumption that Blanchard makes is that US debt securities are a safe investment and therefore investors will continue to hold it at the safe rate, which would, in theory, keep Treasury yields persistently low. During the period 2004–2018, by far the largest holder of US Treasury securities has been foreign investors, typically holding between 40 and 50 percent of US Treasury securities. Although increased foreign holdings of US Treasury securities during the period 2001–2014 might have pushed Treasury yields lower,[23] the share of foreign holdings as a percentage of GDP has since stalled. As we noted

21. Olivier Blanchard, "Public Debt and Low Interest Rates," *American Economic Review* 109, no. 4 (2019): 1197–229.
22. Congressional Budget Office, *The 2021 Long-Term Budget Outlook*. (Washington, DC: Congressional Budget Office, 2021), https://www.cbo.gov/publication/56977.
23. Iryna Kaminska and Gabriele Zinna, "Official Demand for U.S. Debt: Implications for U.S. Real Interest Rates," *IMF Working Papers* 14, no. 66 (2014): 1–46.

earlier, there is no economic consensus on what has driven nominal interest rates down over the decades, so assuming that low rates will remain into the foreseeable future is a serious fiscal gamble. This is particularly true considering that so much of our debt is short term.

Although the assumptions about the impact of the $r - g$ differential are unrealistic and seemingly rose tinted, the potential benefits of using this metric to measure fiscal sustainability are no less problematic. Blanchard argues that a standard argument for greater deficit finance is its potential role in boosting demand and closing the output gap of the economy. In recent years, economists have widely propagated the output gap argument to stress that the economy is lagging far behind its growth potential. However, there are problems with using the output gap as a measure of economic performance—specifically, there is the issue of measuring the gap. Output data are generally revised over time, and potential output estimates are based on trends that rely on ever-changing end points.[24] More important is the underlying assumption that large and oftentimes wasteful government expenditure is the only way to close the output gap. Past experience demonstrates that government spending is not the primary factor in closing output gaps in the economy. The United States experienced large output gaps in the early 1990s and early 2000s, but these gaps were closed within 3 years as the result of private sector growth absent government stimulus spending. In fact, government expenditure as a share of GDP actually fell during both of these periods. Blanchard's faith that government stimulus spending can create significant positive output effects rests on his claim that "larger multipliers imply a smaller increase in debt for a given increase in output."[25] Latest developments in the fiscal multiplier literature suggest that spending multipliers are typically less than 1, with economist Valerie Ramey estimating a short-term spending multiplier range of 0.6–1.0.[26] This estimated range is broadly consistent with over a decade of economic literature on spending multipliers: Mountford and Uhlig (2009) find a spending impact multiplier of 0.65,[27] while Ilzetzki, Mendoza, and Végh (2013) find an estimated range of 0.7–1.0.[28] Notably, some studies

24. David Beckworth and Joshua Hendrickson, "Nominal GDP Targeting and the Taylor Rule on an Even Playing Field," *Journal of Money, Credit and Banking* 52, no. 1 (2019): 269–86.
25. Blanchard, "Public Debt and Low Interest Rates," 1224.
26. Valerie Ramey, "Ten Years after the Financial Crisis: What Have We Learned from the Renaissance in Fiscal Research?" *Journal of Economic Perspectives* 33, no. 2 (2019): 89–114.
27. Andrew Mountford and Harald Uhlig, "What Are the Effects of Fiscal Policy Shocks?" *Journal of Applied Econometrics* 24, no. 6 (2009): 960–92.
28. Ethan Ilzetzki, Enrique Mendoza, and Carlos Végh, "How Big (Small?) Are Fiscal Multipliers?" *Journal of Monetary Economics* 60, no. 2 (2013): 239–54.

in the fiscal multiplier literature find that the multiplier can be slightly greater than 1.0 depending on the horizon and assuming interest rates are at the zero lower bound.[29] However, once we account for the accumulation of public debt in countries such as the United States, the output multiplier becomes significantly diminished as productive spending (infrastructure, education, research and development, etc.) is replaced with unproductive spending on growing interest payments.[30] Recent economic analysis estimates that COVID-19-era stimulus spending yielded output multipliers between 0.14 and 0.58. With small positive output effects and with private sector crowd out, fiscal expansions do not reduce debt in the long run, as Blanchard claims. On the contrary, large fiscal expansions are more often significant drivers of a worsened fiscal condition.

In addition to arguing that large fiscal expansions are needed to eliminate output gaps, Blanchard assumes that safe interest rates are likely to be far below potential growth rates in the future, which means that the welfare costs of additional debt may be absent altogether. This assumption is dangerous because first, we cannot be certain that the downward trend in the safe rate will continue into the foreseeable future; in fact, forecasts demonstrate the opposite. Second, future economic projections demonstrate that lower economic growth rates are likely in the future, with real annual GDP growth rates forecast to be just 1.5 percent by 2030.[31] With lower economic growth comes lower government revenues and a worsened fiscal condition. Combined with the possibility of higher future interest rates, the assumption that the $r - g$ differential will remain negative becomes less convincing. Even if we assume that interest rates on government debt were to remain at low levels (below 2 percent), the welfare costs of financing a 400 percent public debt ratio will be substantial. What is more, Blanchard does acknowledge the risk premia associated with an increasing debt ratio, specifically calculating that a 1 percentage point increase in the debt ratio increases the safe rate by 2–3 basis points. By this measure, the CBO's long-term debt forecast of 202 percent of GDP by 2051 would imply upward pressure on the safe rate of roughly 200–300 basis points. Based on these estimates and assuming continued stagnation in foreign demand for US Treasuries, other institutions such as the Federal Reserve would have to increase its Treasury holdings to about 55 percent

29. Phuong Ngo, "Fiscal Multipliers at the Zero Lower Bound: The Role of Government Spending Persistence," *Macroeconomic Dynamics* 25, no. 4 (2019): 970–97.
30. Antonio Afonso and Frederico Leal, "Fiscal Multipliers in the Eurozone: An SVAR Analysis," *Applied Economics* 51, no. 5 (2019): 5577–93.
31. Congressional Budget Office, *The 2021 Long-Term Budget Outlook*.

of GDP just to keep yields at current rates, which in turn would raise the risk of fiscal dominance.[32]

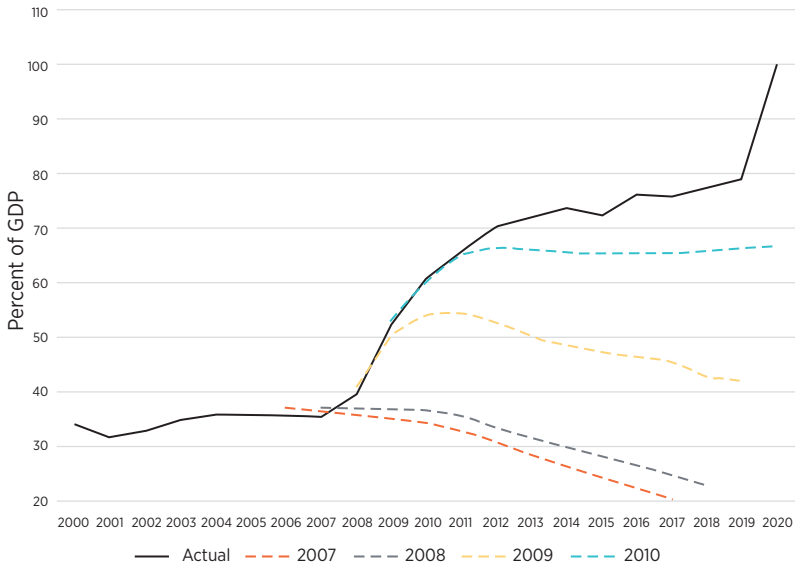
Building on the work of Blanchard, former Obama administration economists Jason Furman and Lawrence Summers (henceforth FS) published a paper in 2020 in which they too argue that in an era of low interest rates, traditional definitions of fiscal sustainability are misleading and should be replaced by comparing interest rate flows with GDP flows.[33] In a similar vein to Blanchard, FS argue that fiscal expansions can improve fiscal sustainability by raising GDP more than they raise debt and interest payments. Two immediate problems come to mind here. First, the claim assumes that fiscal spending multipliers are more often higher than 1.0, which goes contrary to the economic literature. Second, like Blanchard, FS overlook the existence and importance of the primary budget deficit. Following a large fiscal expansion during 2007–2009, the debt ratio doubled, while the recent fiscal expansion in response to the COVID-19 pandemic increased the debt ratio from 79 percent to over 100 percent. Historical experience demonstrates that fiscal expansions do not improve fiscal sustainability but significantly worsen it. Continuing on this narrative, FS argue that over time, the economy will outgrow its debt and associated interest so that the debt will disappear relative to the economy. Over the next 30-year horizon, debt held by the public is projected to grow at roughly 3 times the rate of the economy, while over the 75-year horizon, debt is projected to grow at more than 5 times the rate of the economy, with interest payments forecast to consume 24 percent of GDP by the 2090s. With these economic forecasts in mind, it is highly unlikely, if not impossible, that debt will disappear relative to the economy. In fact, it seems more likely that the economy will disappear relative to the debt.

In addition to arguing that the debt ratio is not a useful metric for debt sustainability, FS conduct some back-of-the-envelope forecasts for the future trajectory of the debt ratio. Assuming the 2017 tax cuts expire and Social Security is reformed, they estimate that the debt ratio will reach 112 percent by 2050. Although we wish they are correct about Social Security reform, we fear that

32. Calculations are based on Bonis, Ihrig, and Wei, which estimates that every 1 percent of GDP increase in purchases of Treasuries by the Federal Reserve drives down yields by 9.7 basis points. To counteract a 300 basis point increase in yields resulting from a rising debt ratio, the Federal Reserve would have to purchase an additional (3 * 9.7 = 29.1) 29.1 percent of GDP's worth of Treasuries. If we add this to the existing Fed balance sheet of Treasury securities, we get a figure of almost 55 percent of GDP. Brian Bonis, Jane Ihrig, and Min Wei, "The Effect of the Federal Reserve's Securities Holdings on Longer-term Interest Rates," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, April 20, 2017.)

33. Jason Furman and Lawrence Summers, "A Reconsideration of Fiscal Policy in the Era of Low Interest Rates" (Discussion Paper, Harvard University, Cambridge, Massachusetts, 2020).

FIGURE 1. CBO DEBT PROJECTIONS VS. ACTUAL DEBT RATIO




Source: Congressional Budget Office (CBO), The Budget and Economic Outlook: Fiscal Years 2008 to 2017 (CBO, 2007); The Budget and Economic Outlook: Fiscal Years 2009 to 2018 (CBO, 2008); The Budget and Economic Outlook: Fiscal Years 2010 to 2019 (CBO, 2009); The Budget and Economic Outlook: Fiscal Years 2010 to 2020 (CBO, 2010), Supplement to The Budget and Economic Outlook: 2021 to 2031, Supplement data, 1a (CBO, 2021).

this assumption is unrealistic. In addition, this 112 percent projection is roughly half of the debt ratio that the CBO estimates for 2050, but also 112 percent is the debt ratio level that the OMB estimates for 2022 in the president's fiscal year 2022 budget. In other words, we can expect to reach that level of debt-to-GDP ratio 28 years before 2050.

Some economists, however, might be skeptical of the CBO's ability to accurately forecast the long-term trajectory of the debt. Although this concern is well founded, it is more likely that the CBO underestimates the upward trajectory of the debt rather than overestimates future debt levels as economists such as FS imply (see fig. 1).

In making the case for rejecting the debt ratio as the preferred metric of debt sustainability and instead adopting a measure of interest rate flows to GDP flows, FS do acknowledge that these measures may suffer from a myopic outlook that does not reflect the future fiscal trajectory. Specifically, the authors admit that these measures "do not reflect the future fiscal trajectory which may dwarf the cumulative historical trajectory. Looking forward it is plausible that interest rates will rise from their current extraordinarily low levels." Indeed, this assumption is well founded in the economic literature that observes the relationship between heightened and growing debt levels and upward pressures on interest

rates. Broadly consistent with Blanchard's back-of-the-envelope estimates, the academic literature finds that each percentage point increase in the debt-to-GDP ratio raises real interest rates by 2–5 basis points. For example, a CBO study from 2019 finds that the average long-run effect of debt on interest rates ranges from about 2–3 basis points for each 1 percentage point increase in debt as a percentage of GDP.[34] Other studies that observe the relationship between debt levels and interest rates find the effects to be even more pronounced, with each percentage point increase in the debt-to-GDP ratio raising interest yields by as much as 3 basis points according to one National Bureau of Economic Research study,[35] or 5 basis points according to an IMF study.[36] Since our growing debt ratio will place upward pressure on interest rates and downward pressure on future GDP growth, newly proposed measures of fiscal sustainability seem to be myopic and precarious, especially in light of our current fiscal trajectory.

## ADDITIONAL CRITICISMS OF THE "DEBT RATIO DOES NOT MATTER" APPROACH

A notable problem with new approaches to measuring fiscal sustainability is that they tend to overlook marginal costs of additional accumulated debt. A 2019 paper published by the Centre for European Studies observed that even though low interest rates tempt high-debt countries to accumulate further debt, this temptation should be resisted, as the true cost of debt is much higher than perceived.[37] The marginal cost of increasing the debt ratio is higher than the interest rate on public debt as accumulating more debt increases the risk premium, thereby raising the cost of financing the total stock of debt. The high marginal cost results from the fact that the higher interest rate applies not only to the additional debt but also to the entire stock of debt needing to be refinanced. The authors note that "as debt increases, so does the temptation for the government to devalue the real value of its debt. In a country with its own currency, this could take the form of (unexpected) inflation, for example, when the government

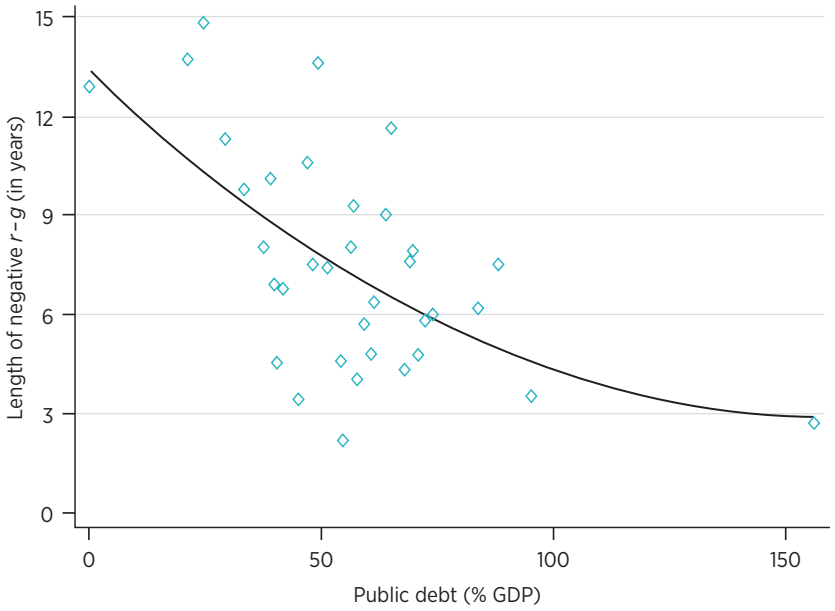
34. Edward Gamber and John Seliski, "The Effect of Government Debt on Interest Rates" (Working Paper 2019-01, Congressional Budget Office, Washington, DC, 2019).
35. Eric M. Engen and Glenn R. Hubbard, "Federal Government Debt and Interest Rates" (Working Paper No. 10681, National Bureau of Economic Research, Cambridge, Massachusetts, 2004).
36. Manmohan S. Kumar and Emanuele Baldacci, "Fiscal Deficits, Public Debt, and Sovereign Bond Yields," *IMF Working Papers* 2010, no. 184 (2010): 1–28.
37. Cinzia Alcidi and Daniel Gros, "Public Debt and the Risk Premium: A Dangerous Doom Loop," *Centre for European Studies Policy Insights* 2019-06 (May 2, 2019): 1–11.

forces the central bank to finance the deficit by creating additional money."[38] In addition to higher marginal costs of financing a growing debt ratio, higher risk premiums also need to be accounted for when measuring debt sustainability. In line with the economic literature on debt risk premia,[39] the IMF uses the rule of thumb that the risk premium of each additional percentage point increase in the debt ratio above 60 percent is 4 basis points. By this measure, the recent increase in the US debt ratio from 79–100 percent has pushed interest rates up by around 84 basis points. In other words, although current interest rates of 1.6 percent means spending 1.6 percent of GDP on debt servicing, had the debt ratio remained at 79 percent, all else being equal, current debt servicing costs would be just 0.9 percent of GDP. This means that as the debt ratio increased from 79 percent to 100 percent of GDP, an increase of 27 percent, the interest cost has increased by almost 80 percent (from 0.9 percent to 1.6 percent of GDP).

Contrary to the claims of Blanchard and FS, periods of negative $r - g$ episodes are not the norm and may not last as long as some economists assume. Along these lines, a recent IMF study observed a large sample of countries to assess the historical relationship between high-debt countries and the duration of $r - g$ episodes.[40] Observing a period of 70 years, the study reveals that the duration of negative $r - g$ episodes is shorter, the higher the initial level of public debt (see fig. 2) and that high-debt countries are more likely to experience a shift from a negative to a positive $r—g$ regime. The authors conclude their findings in a VoxEU article "that fiscal expansion still entails significant risks, even in a low $r - g$ environment, and, importantly, these risks are increasing with the level of public debt, especially because the interest rate-growth differential is endogenous to the size and dynamics of public debt."[41] A second recent IMF study analyzes an empirical history of interest-growth differentials for 55 countries across a period of 200 years.[42] The authors find that $r - g$ is, on average, negative for all countries, with an average differential of –2.5 percent for advanced countries, suggesting that negative differentials experienced today

38. Alcidi and Gros, "Public Debt and the Risk Premium," 3.
39. See S. Ardagna, F. Caselli, and T. Lane, "Fiscal Discipline and the Cost of Public Debt Service: Some Estimates for OECD Countries," *B. E. Journal of Macroeconomics* 7, no. 1 (2007): 1–35; Engen and Hubbard, "Federal Government Debt and Interest Rates"; T. Laubach, "New Evidence on the Interest Rate Effects of Budget Deficits and Debt," *Journal of the European Economic Association* 7, no. 4 (2009): 858–85.
40. Weicheng Lian, Andrea F. Presbiero, and Ursula Wiriadinata, "Public Debt and $r - g$ at Risk" (IMF Working Paper No. 20/137, International Monetary Fund, Washington, DC, 2020).
41. A. Presbitero and U. Wiriadinata, "The risks of high public debt despite a low interest rate environment," *Center for Economic and Policy Research* (VoxEU) https://voxeu.org/article/risks-high-public-debt-despite-low-interest-rate-environment.
42. Paolo Mauro and Jing Zhou, "$r - g < 0$: Can We Sleep More Soundly?" *IMF Economic Review* 69, no. 1 (2021): 197–229.

FIGURE 2. NEGATIVE R-G SPELLS, REVERSALS, AND PUBLIC DEBT




Source: From the study in A. Presbitero and U. Wiriadinata, "The risks of high public debt despite a low interest rate environment," *Center for Economic and Policy Research* (VoxEU) https://voxeu.org/article/risks-high-public-debt-despite-low-interest-rate-environment.

are not unprecedented but are actually the norm rather than the exception. Furthermore, historical empirical analysis suggests that low differentials are not associated with lower frequency of sovereign defaults, whereas fiscal deficits and debt ratios do have predictive power for sovereign defaults. These findings suggest that not only are negative $r - g$ differentials not a new phenomenon, but also and more important, they are not a useful predictive metric of fiscal sustainability.

An additional problem with the $r - g$ measure of fiscal sustainability is that it would require $r - g$ to be at most –6 percent and at times –17 percent just to keep the debt ratio at existing levels. Although current interest rates of 1.6 percent translate to real rates of –0.4 percent (assuming 2 percent inflation) and assuming real GDP growth of 2 percent in the future, the government could run a fiscal deficit of 2.4 percent without increasing the debt ratio. However, the reality of the US fiscal position is that deficits of 5 percent of GDP are run during good times and up to 17 percent of GDP in bad times. Based on this budgetary reality, economist John Cochrane has argued that even if by some miracle government revenues equaled government spending and our debt ratio was 150 percent, with an $r - g$ of –1 percent, it would take 40 years just to get

back to a ratio of 100 percent.[43] Once you acknowledge that federal receipts as a percentage of GDP, which have never exceeded 20 percent and are forecast to average 18 percent in the coming 30 years, would have to exceed 30 percent by 2050, the rose-tinted assumptions of the $r - g$ theory of fiscal sustainability become increasingly improbable. Accounting for the fact that long-run causality does not run from expenditures to revenues demonstrates why governments are not able to generate the revenues required to finance planned expenditures.[44] This has broadly been the case in the United States for the past 5 decades and especially during the past 2 decades, and the future budgetary outlook looks even worse than the past.

A metric of debt sustainability that focuses primarily on the current interest costs of market-traded government debt tends to overlook one additional (and significant) aspect of the longer-term budget constraint—namely, future obligations. The last time our debt ratio equaled the size of the entire economy was following World War II, and at that time, the Social Security system was in its infancy and federally funded health care programs did not yet exist. Today, the focus on interest rates fails to account for the higher implicit risk premium on government pension and old-age health insurance obligations because these future debts are not traded and therefore not seen. The scale of these unseen obligations is colossal, with recent estimates suggesting that the unfunded liability of the Social Security system is almost twice the size of total market-traded debt, while the entire fiscal gap of the federal government was estimated to be $239 trillion in 2019.[45] These unfunded liabilities are not reflected in measures of fiscal sustainability that focus on current low interest rates—instead, the focus on current interest rates represents a myopic outlook that largely ignores longer-term debt dynamics. There is little political will among policymakers to reduce unfunded liabilities, such as future Social Security benefits. Therefore, policymakers are likely to pursue financing options that involve growth diminishing tax increases or unprecedented levels of borrowing in order to avoid the politically unpopular option of benefit cuts.

43. John H. Cochrane, "Comments on 'The Constraint on Public Debt When $r < g$ but $g < m$'" (National Bureau of Economic Research Economic Fluctuations and Growth conference paper, February 19, 2021, http://conference.nber.org/confer/2021/EFGw21/cochrane_comments.pdf).
44. António Afonso and João T. Jalles, "Fiscal Sustainability: A Panel Assessment for Advanced Economies," *Applied Economics Letters* 22, no. 11 (2014): 925–29.
45. Lawrence Kotlikoff, "The 2019 US Fiscal Gap," last modified 2019, https://kotlkoff.net/wp-content/uploads/2019/03/The-2019-U.S.-Fiscal-Gap-Calculated-by-Laurence-Kotlikoff-and-Nils-Lehr.pdf.

## THE POLITICAL ECONOMY OF NEW DEBT SUSTAINABILITY METRICS

Economists have long theorized about what drives large and persistent deficits during peacetime. Columbia economist Pierre Yared has explored the trend rise in advanced country debts (focusing on market-traded debt).[46] He argues that it is very difficult to rationalize the trend rise in debt with any standard normative arguments including dynamic inefficiency, tax smoothing, or safe asset provision. Instead, political economy factors appear to have been much more important as aging populations with finite horizons favor debt finance of higher transfers, politicians who know they will only be temporarily in power have an incentive to exploit debt to maximize payments to their constituencies, and political parties have become increasingly polarized. New measures of fiscal sustainability effectively endorse these political factors by permitting policymakers to grow the total stock of debt during economic expansions in order to pursue their political goals and appease the myopic interests of their constituents.

The political economy of government debt dynamics has been well documented by public choice economists for decades. As the primary motivation of elected officials is reelection, legislators have strong incentives to expand government programs that benefit their voter base, while the costs of expanding public debt and deficits are a lower priority or often overlooked altogether.[47] With these deficit biases in mind, policymakers and even our current secretary of the Treasury[48] are adopting new metrics of debt suitability that (1) completely overlook the long-term costs of growing the debt ratio and (2) justify the implementation of massive fiscal expansions in pursuit of political or ideological goals. An overarching theme of the broad emergence of new metrics of fiscal sustainability is that they are politically convenient, especially for those in Washington, DC, with bold policy ideas and large-scale spending plans.

Much like Keynesian economists of the past, New Keynesian economists (who tend to be the biggest advocates of new debt metrics) still have a devout faith in the existence of unrealistically large fiscal spending multipliers. Indeed, in contrast to the preponderance of economic literature on the subject, economists

46. Pierre Yared, "Rising Government Debt: Causes and Solutions for a Decades-Old Trend," *Journal of Economic Perspectives* 33, no. 2 (2019): 115–40.
47. Gordon Tullock, *Virginia Political Economy: Selected Works of Gordon Tullock* (Indianapolis: Liberty Fund, 2004).
48. Janet Yellen urged G7 governments to keep spending to tackle climate changes and inequality. David Lawder and Andy Bruce, "U.S. Treasury's Yellen Tells G7 to Keep Spending, Says Inflation Will Pass," Reuters, June 5, 2021, https://www.reuters.com/business/yellen-urges-g7-keep-up-fiscal-support-sees-inflation-transitory-2021-06-05/.

such as FS have frequently argued that government spending multipliers are likely in the range of 1.5–2.5.[49] However, unlike John Maynard Keynes, the New Keynesian economists of today ignore the second half of Keynesian budget theory—namely, paying down the debt during periods of economic expansion. Instead, economists have invented new definitions of debt sustainability that permit politicians to pursue policies of expansionary fiscal policy in good times and bad, feeding the political incentives facing legislators and the myopic interests of their constituents. The burden of ignorance does not fall entirely on policymakers; due to weak incentives to invest time and to estimate the actual cost of new spending proposals, it is too costly for taxpayers to better inform themselves about the costs of government incurring more debt. James Buchanan and Richard Wagner refer to this phenomenon as the fiscal illusion and argue, therefore, that debt financing reduces the perceived price of expansions in government spending, so taxpayers have a preference for higher spending levels and little regard for long-run costs.[50]

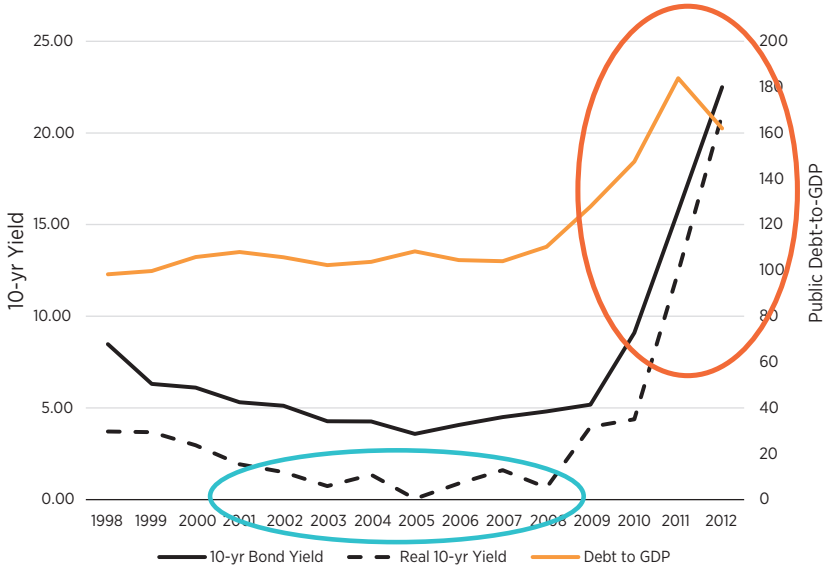
Whereas traditional measures of debt sustainability involved the acknowledgment of shifting debt burdens to future generations of taxpayers to the benefit of current taxpayers, new definitions disregard the long term altogether. What is more, new metrics represent a soft endorsement of Keynesian fiscal stimulus not just during economic downturn but ad infinitum. These now–broadly adopted metrics of debt sustainability are certainly suggestive of public choice dynamics and political incentives for continually expanding government expenditure.

## FISCAL CRISIS OR ECONOMIC STAGNATION OR BOTH: CONSEQUENCES OF IGNORING THE DEBT RATIO

With the adoption of new metrics of fiscal sustainability, policymakers are choosing to overlook the economic fallout that results from a high and growing debt ratio, now exceeding the size of the economy. The first risk that arises from ignoring the debt ratio is the possibility that interest rates could rise in the not-so-distant future. The higher the debt ratio, the worse the economic and budgetary impact of a sudden upswing in interest rates. This is not the first time in history that governments and economists have become complacent about the

49. See J. B. Delong and Lawrence H. Summers, "Fiscal Policy in a Depressed Economy," *Brookings Papers on Economic Activity* 2012, no. 1 (2012): 233–97; Jason Furman, "Responding to the Global Financial Crisis: What We Did and Why We Did It" (paper presented at Brookings Institution, September 11–12, 2018).
50. James M. Buchanan and Richard E. Wagner, *Democracy in Deficit: The Political Legacy of Lord Keynes* (Indianapolis: Liberty Fund, 2000).

FIGURE 3. GREECE: 10-YR BOND YIELDS: 1998 TO 2012

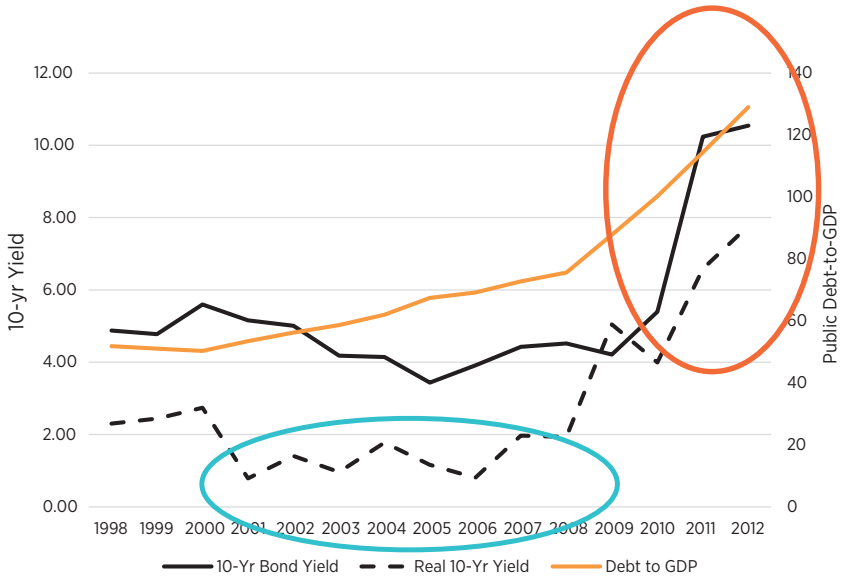



Source: Debt data from "World Economic Outlook Database" *International Monetary Fund* (2021); 10-YR Yield data from "Main Economic Indicators Database," *Organization for Economic Co-operation and Development* (2021); Consumer Price Index data from "International Financial Statistics Database," *World Bank* (2021).

long-term costs of higher deficit and debt. During the early to mid-2000s, many European nations became complacent about their upward and unsustainable debt trajectories under the illusion of low-trending interest rates.[51] While politicians in many European countries were running up large debt ratios, they were content with continuous deficit spending as the interest rates on debt servicing were well below historical trends. The result of this complacency was fiscal crisis and, in certain cases, sovereign default. The most extreme example of this type of fiscal crisis was experienced in Greece between 2008 and 2015. Figure 3 shows Greek 10-year bond yields from 1998 to 2012, with both nominal and real (yields minus Consumer Price Index) yields displayed. Under the rules of fiscal sustainability promoted by FS, governments should continue expansionary fiscal policies so long as the real interest rate (represented by 10-year yield minus inflation) of debt servicing remains below 2 percent. This would mean that Greek policymakers would have been encouraged to increase expenditures during the period 2001–2008 (highlighted in the green circle) in the run-up to the Greek

51. Manmohan S. Kumar and David Hauner, "Fiscal Policy and Interest Rates: How Sustainable is the "New Economy"?," IMF Working Paper 06, no. 112 (2006), 1–31.

FIGURE 4. PORTUGAL: 10-YR BOND YIELDS: 1998 TO 2012




Source: Debt data from "World Economic Outlook Database" *International Monetary Fund* (2021); 10-YR Yield data from "Main Economic Indicators Database," *Organization for Economic Co-operation and Development* (2021); Consumer Price Index data from "International Financial Statistics Database," *World Bank* (2021).

sovereign debt crisis. This myopic focus on current interest rates would have overlooked the risk premia associated with having a debt ratio that exceeded the size of the economy and an average budget deficit above 7 percent during this period. The result of this fiscal negligence was a steep upswing in both nominal and real interest rates to yields above 20 percent (highlighted in the red circle). To avoid the crippling costs of higher service payments, the Greek government rolled over its debt into longer-term maturities at lower yields. Between 2011 and 2017, the average weighted maturity of Greek public debt increased threefold from 6 years to 18 years.

Another European Union (EU) nation that experienced a similar, yet less severe, fiscal crisis was Portugal. Figure 4 shows Portuguese 10-year bond yields from 1998 to 2012, with both nominal and real yields displayed. Again, under the rules of fiscal sustainability promoted by FS, Portuguese policymakers would have been encouraged to increase public expenditure during the 8-year period from 2001 through 2008 (highlighted in the green circle). Similar to the Greek situation, a primary focus on low-trending interest rates would have overlooked the risk premia associated with a large and growing debt ratio and an average budget deficit of about 4 percent during this period. Although a steep upswing in interest rates did not result in sovereign default, as was the case with Greece,

debt servicing interest payments in Portugal did consume over 13 percent of all government revenues by 2012. The fiscal crisis in Portugal resulted in a massive economic contraction over several years, the implementation of severe austerity measures, double-digit unemployment rates that persisted until 2017, and a financial bailout from the IMF and European Commission.

A sharp uptick in interest rates, at either Greek or Portuguese levels, would have serious negative ramifications if such an event occurred in the United States. Unlike these EU nations, the United States does not have the European Commission to bail it out when the fiscal crisis does eventually arrive.

If interest rates do not rise sharply, as was the case in many European nations in 2008–2012, then the alternative long-term risk facing the United States is economic stagnation as the debt ratio continues on an upward trajectory. Rather than the fate of the Greeks or the Portuguese, the United States could instead succumb to the fate of the Japanese. Japan's debt ratio has grown on an unbroken upward trend for 3 decades and Japan now has by far the highest ratio of public debt to GDP in the world. However, unlike the United States, the underlying economic factors that drive debt dynamics in Japan are far more benign than those in the United States. For example, traditionally Japan has maintained a very high savings rate, constituting about one-third of its GDP, while the US savings rate is about half of that—typically around 17 percent of GDP.[52] Equally important, in Japan 90 percent of the nation's debt is held domestically, reducing risks from international volatility, while US debt held domestically has averaged less than 60 percent of total public debt since the Great Recession. What is more, Japan remains the world's biggest creditor nation, while the United States is the biggest debtor.[53] Net borrowing by the public sector has been offset by net lending of Japan's household and corporate sectors. Yet with a rapidly aging population and resulting decline in household savings, Japan's debt financing model faces its own sustainability problems. Even with Japan's very unique debt dynamics, the nation has suffered from decades of economic stagnation due to the debt drag on its economic potential. Whereas the United States has averaged real growth of 2.1 percent since 2000, Japan has averaged just 0.9 percent over the same period.[54] As a result of suppressed economic growth rates, wages have stagnated in Japan for the past

52. World Bank national accounts data and OECD national accounts data files, https://data.worldbank.org/indicator/NY.GDS.TOTL.ZS?locations=JP-US.
53. Bureau of Economic Analysis, "U.S. International Investment Position, Fourth Quarter and Year 2020," https://www.bea.gov/news/2021/us-international-investment-position-fourth-quarter-and-year-2020.
54. Organisation for Economic Co-operation and Development, "Average Annual Wages," *OECD Economic Outlook* 2019, no. 2 (2019), https://stats.oecd.org/Index.aspx?DataSetCode=AV_AN_WAGE.

two decades, while in the United States wages have continued to grow. Even with interest rates on debt servicing being ultra-low for decades, Japan still currently spends 4.4 percent of GDP on national debt service—almost three times what is spent in the United States, constituting about one-quarter of the entire Japanese government budget.[55]

Following the Great Financial Crisis, there has been a renewed interest in the debt-growth nexus—a phenomenon of a high and growing debt ratio placing downward pressure on economic growth rates. Economists have long theorized about how higher taxes and interest payments resulting from a large debt burden negatively affect gross capital stock formation and therefore economic output.[56] If we were to act on the risky assumption that interest rates will not increase over time (as in the unique case of Japan), a large and growing debt ratio will still adversely affect growth rates through other economic channels. For example, (1) crowding out of private investment as public borrowing competes for funds in the nation's capital markets,[57] (2) higher distortionary taxes to fund future liabilities and increasing debt repayments,[58] and (3) an increase in the rate of inflation.[59] A recent survey of the empirical literature on the debt-growth nexus observing a decade of studies published between 2010 and 2020 came to a well-founded conclusion: high levels of public debt have a negative impact on economic growth.[60] Specifically, of the 40 studies reviewed, 36 studies identified a statistically significant (linear or nonlinear) negative effect of public debt on growth. Studies observing the nonlinear relationship between public debt and growth tend to find that the negative effects of debt on the economy start to kick in at around 80 percent of GDP for advanced economies. Several empirical studies that calculate the quantitative costs of increases in the debt ratio above this threshold level find that each 10 percentage point increase in the debt ratio reduces the economic growth rate by

55. Ministry of Finance (Japan), "Highlights of the FY2021 Draft Budget," https://www.mof.go.jp/english/policy/budget/budget/fy2021/01.pdf.
56. Peter Diamond, "National Debt in a Neoclassical Growth Model," *American Economic Review* 55, no. 5 (1965): 1126–50.
57. Douglas W. Elmendorf and Gregory Mankiw, "Government Debt," in *Handbook of Macroeconomics*, edited by John B. Taylor and Michael Woodford (Amsterdam: North-Holland, 1999), 1C:1615–69.
58. Michael Dotsey, "Some Unpleasant Supply Side Arithmetic," *Journal of Monetary Economics* 33, no. 3 (1994): 507–24.
59. John Cochrane, "Understanding Policy in the Great Recession: Some Unpleasant Fiscal Arithmetic," *European Economic Review* 55, no. 1 (2011): 2–30.
60. Jack Salmon, "A Survey of Economic Literature: Impact on Public Debt on Economic Growth," *Cato Journal* 41, no. 3 (2021): 487–509.

around 0.2 percentage points.[61] Based on these findings, our current debt ratio of 100 percent means that our annual real growth rate will be 0.4 percentage points lower than it would have been if the debt ratio were at pre-2020 levels. If we use the 2019 real growth rate of 2.3 percent as a baseline, we can expect 1.9 percent average real annual growth at our current debt levels into the foreseeable future and progressively lower rates as the debt ratio continues on its upward trajectory. Such debt dynamics go a long way in explaining why the four Organisation for Economic Co-operation and Development (OECD) countries with debt ratios that never fell below 100 percent between 2010 and 2019 averaged 0.1 percent real annual growth and each of those countries had an average annual growth rate of less than 1.3 percent for this decade.[62]

Ultimately, by overlooking the economic fallout that results from a high and growing debt ratio, new metrics for fiscal sustainability leave us with the real possibility of two scenarios: a fiscal crisis (if interest rates eventually spike upward) or economic stagnation due to the economic drag of large and growing public debt levels.

## THE DEBT RATIO STILL MATTERS

In light of recent calls to de-emphasize the importance of the debt ratio as the preferred metric for measuring fiscal sustainability, this brief assesses the applicability of new definitions of fiscal sustainability in light of our current fiscal condition. In short, this study finds that new metrics for measuring fiscal sustainability overlook the preponderance of economic literature on fiscal sustainability, debt risk premia, and the debt-growth nexus.

More specifically, new metrics of debt sustainability are based on unrealistic assumptions about large fiscal multipliers, a failure to account for large primary budget deficits (current and projected), and the presumption that interest rates will remain low or decline further into the foreseeable future. At the same time, these new theories of debt sustainability neglect to account for declining

61. For studies that find each 10 percentage point increase in the debt ratio reduces economic growth rates by 0.2 percentage points, see A. Afonso and J. T. Jalles, "Growth and Productivity: The Role of Government Debt," *International Review of Economics and Finance* 25 (2013): 384–407; J. Woo and M. S. Kumar, "Public Debt and Growth," *Economica* 82, no. 328 (2015): 705–39; D. Baglan and E. Yoldas, "Public Debt and Macroeconomic Activity: A Predictive Analysis for Advance Economies," *Studies in Nonlinear Dynamics and Econometrics* 20, no. 3 (2016): 301–24; V. Swamy, "Debt and Growth: Decomposing the Cause and Effect Relationship," *International Journal of Finance and Economics* 25, no. 2 (2020): 141–56.

62. World Bank national accounts data and OECD national accounts data files, https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2019&locations=JP-GR-IT-PT&start=2010.

real growth rates, especially in light of the adverse growth effects caused by an ever-larger debt ratio as public borrowing crowds out private investment. Public choice theory informs us that these new definitions of fiscal sustainability may be largely politically motivated, with policymakers operating within a myopic framework that benefits special interests in the short term while burdening wider society in the long term.

To avoid the possibility of a fiscal crisis and/or economic stagnation in the future, economists and policymakers should reject new definitions of fiscal sustainability that focus on current interest rates. Instead of disregarding the debt ratio, this traditional measure of fiscal sustainability remains a prudent metric for assessing the long-run costs and risks associated with the trajectory of our total stock of debt. Contrary to recent popular rhetoric, the debt ratio still matters.

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