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The Intergenerational Equity Case for a Wealth Tax

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THE INTERGENERATIONAL EQUITY CASE FOR A WEALTH TAX

*Daniel Schaffa**

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INTRODUCTION

There is an ongoing debate about whether the United States should adopt a wealth tax.¹ Proponents argue that wealth taxes have the potential

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1. There has been an explosion of interest in wealth taxes recently. According to Google Trends, the three highest peaks in “wealth tax” interest were in November 2019, February 2020, and August 2020. Wealth Tax Trends, GOOGLE TRENDS, <https://trends.google.com/trends/explore?date=all&geo=US&q=wealth%20tax> (last visited Feb. 21, 2021). In the political realm, two Democratic candidates for the 2020 U.S. presidential race proposed wealth taxes. The details of Senator Sanders’ plan may be found here: *Tax on Extreme Wealth*, BERNIE SANDERS OFFICIAL WEBSITE, <https://berniesanders.com/issues/tax-extreme-wealth/> (last visited Feb. 20, 2021). The details of Senator Warren’s may be found here: *Ultra-Millionaire*

to reduce resource and political inequality and may thus be potent instruments of equity.² Indeed, most if not all the arguments in favor of a broad-based wealth tax follow from their capacity to alleviate a systemic imbalance between rich and poor. What has gone unrecognized is that there is an alternative policy rationale for wealth taxes: to counteract a systemic imbalance between past generations and future generations.³

A generational imbalance is not merely an academic possibility. For decades, the U.S. has borrowed money to pay for its expenditures.⁴ And budget forecasts make it all but inevitable that at some point the rate of borrowing must slow, meaning that either taxes must go up, or government spending must go down.⁵ To be sure, while in the throes of a pandemic is hardly the time to worry about long-term budget imbalances, and the preponderance of the evidence shows that a debt crisis is not

Tax, WARREN DEMOCRATS, <https://elizabethwarren.com/plans/ultra-millionaire-tax> (last visited Feb. 20, 2021). And in the academic realm, a broad range of scholars are studying the effects, potential, and limitations of wealth taxes. *See generally* Florian Scheuer & Joel Slemrod, *Taxing Our Wealth*, 35 J. ECON. PERSPECTIVES 207, 219 (2021).

2. *Id.* *See also* Emmanuel Saez & Gabriel Zucman, *Progressive wealth taxation*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY (Sep. 5, 2019), <https://www.brookings.edu/bpea-articles/progressive-wealth-taxation/>. *But see* HARVEY S. ROSEN & TED GAYER, PUBLIC FINANCE 495-97 (3d ed. 2008).

3. Whenever the interests of different generations compete, intergenerational equity concerns arise. When earlier generations are subject to a relatively favorable tax regime and later generations are subject to a far more burdensome tax regime, an intergenerational imbalance manifests. There are two underlying rationales for intergenerational equity claims in government budget contexts. First, one might claim that each generation has an obligation to pass along a fisc to its predecessors no worse than the one it inherited. This raises numerous issues, including how to define a worse fisc when historically each generation has been wealthier than its forebearers and how to take into consideration the substantial uncertainty over the future. Second, one might claim that each generation should pay for whatever it uses. This rationale too raises issues, including how to measure and assign the benefit of government expenditure to all taxpayers past, present, and future. *See* Janna Thompson, *Intergenerational Equity: Issues of Principle in the Allocation of Social Resources Between this Generation and the Next*, (Parliament of Australia Information and Research Services Research Paper No. 7 2002-03), available at <https://www.aph.gov.au/binaries/library/pubs/rp/2002-03/03rp07.pdf>. Despite the difficulties associated with intergenerational equity analysis, it remains an important fairness concept. *See generally* Neil H. Buchanan, *What Do We Owe Future Generations*, 77 GEO. WASH. L. REV. 1237 (2009) [hereinafter: “Buchanan, *What Do We Owe Future Generations*”].

4. *See infra* Part II.A. Since the early 1980s, the United States government has borrowed trillions of dollars to cover its budget shortfalls. *See* CONG. BUDGET OFF., HISTORICAL BUDGET DATA, <https://www.cbo.gov/data/budget-economic-data#2>. The deficits started in the late 1960s but became much larger in the 1980s. The two recent changes to the U.S. government budget that have had the largest impact on the debt are the trillions the government has prudently borrowed and spent to mitigate the fallout of the COVID-19 pandemic and the lost revenue from the Tax Cuts and Jobs Act. *See* CONG. BUDGET OFF., MONTHLY BUDGET REVIEW FOR JULY 2020 (Aug. 10, 2020), <https://www.cbo.gov/system/files/2020-08/56497-CBO-MBR.pdf>; *See* William G. Gale et al., *Effects of the Tax Cuts and Jobs Act: A Preliminary Analysis*, TAX POL’Y CTR. 8 (June 13, 2018), <https://www.taxpolicycenter.org/publications/effects-tax-cuts-and-jobs-act-preliminary-analysis>.

5. *See infra* Part II.B. Despite its prodigious size and persistent growth, the U.S. government debt has not captured the public’s attention and for the most part its study has been relegated to the ivory tower. *See* Alan J. Auerbach & William G. Gale, *Forgotten but Not Gone: The Long-Term Fiscal Imbalance*, TAX NOTES 1555 (Sept. 29, 2014).

imminent.⁶ The U.S. has an enormous capacity to borrow—truly without historical analog.⁷ But its capacity to borrow is not infinite.⁸ There is a limit, and the U.S. government is borrowing at an unsustainable clip.⁹

The way in which the government reduces the deficit will have a substantial effect on the intergenerational distribution of economic outcomes. The government could, for example, reduce the deficit with gradual tax increases, introduced over several years. Alternatively, the government could reduce the deficit with a large abrupt tax increase, which would likely result if the unsustainable deficit precipitated a fiscal or economic crisis.¹⁰ If there is an abrupt tax increase, there will be a clear demarcation between two tax regime eras. In the first, the government will have financed a large portion of spending with borrowing and levied low taxes; in the second, the government will have decreased its borrowing and levied higher taxes.¹¹ Even accounting for the historical tendency for each generation to have more income than its predecessors, such an abrupt tax increase could result in an intergenerational imbalance.¹² If that comes to pass, U.S. fiscal policy will have caused intergenerational inequity.

I suggest a simple remedy to counteract the intergenerational consequences of this change in tax regimes: a one-time wealth tax. Older cohorts of taxpayers had a relatively low tax burden because the government borrowed to finance spending, and coincidentally older cohorts hold relatively more wealth.¹³ Moreover, because income and wealth are correlated, the more a taxpayer benefitted from a lower income tax burden, the more wealth she will, on average, have.¹⁴ A one-time wealth tax would raise revenue from taxpayers roughly in proportion to the benefit they received from government deficit spending and would thus distribute taxpayer burdens more equitably if the government must reign in its borrowing abruptly.¹⁵

6. Many economists argue that spending to counteract the pandemic is prudent. *See* Heather Long, *\$900 billion stimulus is second-biggest in U.S. history, but it won't last long enough*, WASH. POST (Dec. 21, 2020), <https://www.washingtonpost.com/business/2020/12/21/stimulus-bill-economy/>.

7. *See infra* Part II.A.

8. *See infra* Part I.B.

9. *See infra* Part II.A. In 2019, before the COVID-19 pandemic, 22.1% of U.S. federal government spending was financed by borrowing, a deficit that has persistently increased over that past several decades. And during the pandemic, borrowing rose to 50.1% of spending. *See* An Update to Budget Outlook: 2020 to 2030, Cong. Budget Off. 6 (Sept. 2020), <https://www.cbo.gov/publication/56542>.

10. *See infra* Part II.C.

11. *See infra* Part III.A.

12. *See infra* Part III.C.

13. *See infra* Part IV.A.

14. *Id.*

15. *Id.*

This Article proceeds in four parts. Part I introduces the necessary background to understand government budgets, focusing particularly on the economic limits of debt and the difference between sustainable and unsustainable government deficits. Part II describes the U.S.'s recent history of deficit spending, its current fiscal condition, and its projected economic position. Part II also explains why the deficit must be reduced and how the timing of this reduction will change economic outcomes. Part III suggests criteria to determine whether a government policy has violated intergenerational equity. It then discusses the various factors that would affect the intergenerational distribution of economic outcomes and provides an example of an intergenerational equity violation. Part IV demonstrates how a one-time wealth tax would rebalance the tax burden across generations of taxpayers, moving us closer to intergenerational equity.

I. GOVERNMENT BUDGETS

To begin this analysis of the U.S.'s debt and deficit, this Part describes the basics of government budgets, explores the benefits, costs, and limits of government debt, and explains the differences between unsustainable and sustainable deficits. This sets the stage for Part II, which applies these concepts to the debt and deficit of the U.S.

A. *The Debt and the Deficit*

The U.S. Government has revenues and outlays.¹⁶ Its outlays are partitioned into three categories: mandatory, discretionary, and net interest.¹⁷ Mandatory outlays are required by statute and include Social Security, Medicare, Medicaid, and a few smaller government programs.¹⁸ Discretionary outlays constitute spending on all other government programs, notably including defense expenditures.¹⁹ Net interest is the interest the U.S. government pays to service its debt obligations less the interest it receives from various sources as a creditor.²⁰

When government outlays exceed government revenues in a given

16. Most of the revenues the U.S. federal government collects are from various taxes. The three largest revenue sources are individual income taxes, payroll taxes, and corporate income taxes. CONG. BUDGET OFF., *THE BUDGET AND ECONOMIC OUTLOOK: 2021 TO 2031* 1-2 (Feb. 2021), <https://www.cbo.gov/publication/56970>.

17. *Id.*

18. *Id.* at 1, 4.

19. *Id.* at 1, 6.

20. *See id.* at 15.

year, the U.S. has a deficit.²¹ When government revenues exceed outlays, the U.S. has a surplus. In deficit years, the government must borrow money to balance its budget. Setting aside some curious accounting rules, the government debt is the sum of all prior government deficits.²² In the same vein, the deficit is the change in government debt from one year to the next.²³

To aid in the analysis of government finances, the total deficit is often partitioned. The primary deficit is the total deficit less net interest.²⁴ In other words, the primary deficit is the amount the government borrows for new spending. If the government decided to roll over its debt including new interest but not borrow any additional funds, the primary deficit would be zero, and the total deficit would equal net interest.

The deficit may also be subdivided into structural and cyclical components.²⁵ Because government finances are interconnected with the economy, government deficits are affected by the economy's business cycle. Even if government policy remains unchanged over the business cycle, the deficit will mechanically increase during recessions as tax bases

21. *See id.* at 6. This analysis examines only the federal budget. U.S. federal government borrowing is substantially larger than U.S. state government borrowing at least in part because of state balanced budget requirements. *See* James R. Hines Jr., *State Fiscal Policies and Transitory Income Fluctuations*, 41 BROOKINGS PAPERS ON ECONOMIC ACTIVITY 313, 314-15 (2010).

22. For example, some federal credit programs, including student loans, are not included. *See* CONG. BUDGET OFF., THE BUDGET AND ECONOMIC OUTLOOK: 2020 TO 2030 10 (Jan. 2020), <https://www.cbo.gov/publication/56020>. Moreover, as economist Marty Feldstein first noted, the U.S. has made enormous financial commitments that are not captured in its debt numbers, including Social Security and Medicare. *See* Martin Feldstein, *Social Security, Induced Retirement, and Aggregate Capital Accumulation*, 82 J. POL. ECON. 905, 920 (1974). The present value of future payroll tax collections is less than the present value of future benefit payouts as mandated by current law. *See* Stephen C. Goss, *The Future Financial Status of the Social Security Program*, 70 SOCIAL SECURITY BULLETIN, 111, 111 (2010); Alan J. Auerbach, William G. Gale & Aaron Krupkin, *If Not Now, When? New Estimates of the Federal Budget Outlook*, BROOKINGS REP. 9 (Feb. 11, 2019), <https://www.brookings.edu/research/if-not-now-when-new-estimates-of-the-federal-budget-outlook/>. This creates an additional "off balance sheet" liability that the debt and deficit numbers do not capture.

23. Debt and deficit numbers often do not include intragovernmental debt. Instead of depositing the cash collected from payroll taxes into the trust funds out of which Social Security and Medicare benefits are paid, the government writes itself an IOU that does not count towards the headline government debt number. This is intragovernmental debt. But when the government pays out benefits, it cannot use these IOUs and so must borrow more. These intergovernmental holdings increase the government debt by \$5.89 trillion to \$26.49 trillion. U.S. BUREAU OF ECON. ANALYSIS, BEA 20-37, GROSS DOMESTIC PRODUCT, 2ND QUARTER 2020 (ADVANCE ESTIMATE) AND ANNUAL UPDATE (July 2020), <https://www.bea.gov/news/2020/gross-domestic-product-2nd-quarter-2020-advance-estimate-and-annual-update>.

24. *See* CONG. BUDGET OFF., THE BUDGET AND ECONOMIC OUTLOOK: 2020 TO 2030 1 (Jan. 2020), <https://www.cbo.gov/publication/56020>.

25. *See Structural Deficits: What Are They, Why Do We Have One, and Why Should We Worry About It?*, CONCORD COALITION, Feb. 27, 2012, at 1, https://www.concordcoalition.org/sites/default/files/structuraldeficits_0.pdf.

diminish and government programs experience increase use.²⁶ Beyond that mechanical deficit increase, the government may choose to finance programs to counteract the recession, further increasing the deficit.²⁷ This is the cyclical component of the deficit. The structural component of the deficit is the amount the government borrows that cannot be attributed to the business cycle.²⁸ Loosely speaking, the structural deficit is government borrowing attributable to its ongoing programs.

Debt is an advantageous tool that the government can and should use to advance the interests of its citizens. From time to time, the U.S. government makes large and irregular purchases, for example to counteract an exigency, stabilize the economy, or make a substantial investment for the public good.²⁹ Debt furnishes the government with budgetary flexibility, allowing the government to spread the cost of these large expenditures.³⁰

Without the ability to borrow or access to a surplus fund, the government would be unable to make these expenditures or would have to raise taxes to cover the cost of large purchases as they were made,

26. See Hines, *supra* note 21, at 318-21 and *Structural Deficits: What Are They, Why Do We Have One, and Why Should We Worry About It?*, CONCORD COALITION, Feb. 27, 2012, at 1-2, https://www.concordcoalition.org/sites/default/files/structuraldeficits_0.pdf. Stated differently, compared to long-run trends, deficits are smaller during expansions and larger during recessions. Naïve policymakers seem to miscomprehend the severity of the deficit in expansions. See Auerbach, Gale, & Krupkin, *supra* note 22, at 2. In any event, fiscal discipline has been noticeably lacking in the United States, resulting in deficits that stubbornly refuse to shrink. The tendency for political forces to generate large government deficits is called “deficit bias.” See DAVID ROMER, *ADVANCED MACROECONOMICS* 579-82 (3d ed. 2005).

27. See Lawrence Summers, *Why America Must Have a Fiscal Stimulus*, FINANCIAL TIMES (Jan. 6, 2008), <https://www.ft.com/content/3b3bd570-bc76-11dc-bcf9-0000779fd2ac>.

28. The items that have received most attention as recent and expected future contributors to the structural deficit are (1) the growing cost of large entitlement programs, including Social Security and Medicare; (2) the cost of operations in Iraq and Afghanistan; and (3) and tax cuts. See *Structural Deficits: What Are They, Why Do We Have One, and Why Should We Worry About It?*, CONCORD COALITION, 2-3 (Feb. 27, 2012), https://www.concordcoalition.org/sites/default/files/structuraldeficits_0.pdf.

29. For example, the Louisiana purchase was financed by debt. *Secretary of the Treasury, NATIONAL PARK SERVICE*, [https://www.nps.gov/frhi/learn/historyculture/secretaryofthetreasury.htm#:~:text=In%201803%20the%20government%20increased,plan%20for%20the%20nation's%20economy](https://www.nps.gov/frhi/learn/historyculture/secretaryofthetreasury.htm#:~:text=In%201803%20the%20government%20increased,plan%20for%20the%20nation's%20economy.). And within the first eight months of the COVID-19 pandemic, government expenditures increased by \$2.59 trillion. See *How is the federal government funding relief efforts for COVID-19?*, DATALAB, <https://datalab.usaspending.gov/federal-covid-funding/> (last visited March 8, 2022).

30. This is called tax smoothing. See ROMER, *supra* note 26, at 573-77. A second important benefit is that government debt vastly increases the government’s capacity to engage in both fiscal and monetary stabilization. Government borrowing can increase the amount of GDP spent on consumption. See Jason Furman and Lawrence Summers, Draft, *A Reconsideration of Fiscal Policy in the Era of Low Interest Rates* 34 (Peterson Inst. For Int’l Econ., Discussion Draft, 2020), <https://www.piie.com/system/files/documents/furman-summers2020-12-01paper.pdf>. And government debt plays a central role in the Federal Reserve’s control over the money supply. See David Andolfatto & Li Li, *Is the Fed Monetizing Government Debt?*, 5 *ECONOMIC SYNOPSIS* 1 (2013), <https://research.stlouisfed.org/publications/economic-synopses/2013/02/01/is-the-fed-monetizing-government-debt/>.

which would have several drawbacks.³¹ First, it would create tax burden uncertainty. Taxpayers would have higher tax bills in years afflicted with natural disasters, pandemics, or recessions, because each of those scenarios would warrant costly government intervention. But taxpayers could hardly be forewarned of these expenditures and would thus perpetually save for and dread the possibility of an unusually large tax bill.³²

Second, most often the government would have to levy additional taxes precisely when it would be most painful to do so. Raising taxes during a recession or a pandemic would, in large part, nullify the benefit of the increased government expenditure designed to alleviate the burdens of that exigency. For example, the vast majority of the U.S. government's pandemic costs stem from its efforts to provide economic relief and security. Without debt or a surplus fund, any relief would simply be redistribution between current taxpayers.³³

Third, tax burdens would become arbitrary, creating fairness concerns. Consider, for example, two taxpayers identical in every way except that one is a year older and thus retires just before a pandemic starts, and the other retires one year later. Assuming the government financed its response to the pandemic with an income tax, the former would avoid a large tax burden that would fall on the latter. This would violate important fairness principles, including ability to pay.³⁴

Fourth, and perhaps most important, historically the government's capacity to borrow in the short run has been larger than its ability to raise taxes.³⁵ Thus, preventing the government from using debt financing

31. This might be somewhat alleviated if the government regularly ran surpluses anticipating costly crises. But this would come with its own political economy challenges and efficiency costs. Since the government would likely opt to expend these surpluses quickly in response to a crisis, it might not be able to invest them. Consider the consequences if the government suddenly needed a trillion dollars for a surplus fund. This would require a trillion-dollar divestment which would surely have economic consequences. Moreover, the government would still be constrained to spend no more than it had saved or could raise in taxes.

32. For example, within the first eight months of the COVID-19 pandemic, government expenditures increased by \$2.59 trillion. See DATALAB, *supra* note 29. Even disregarding the large structural deficits, taxpayers would have suffered an 74% average increase in their tax bills to cover the cost of the pandemic response.

33. This issue is exacerbated because, during economic crises, government revenue is sure to fall as most tax bases diminish, including income, sales, property values, and imports. See Hines, *supra* note 21, at 319-21.

34. Ability to pay stands for the proposition that taxpayers should contribute to government revenues in proportion to their means. RICHARD A. MUSGRAVE & PEGGY B. MUSGRAVE, *PUBLIC FINANCE IN THEORY AND PRACTICE* 242-43 (3d ed. 1980). If the only difference between the taxpayers were one year of age, a policy that would place a substantially larger burden on one than the other would violate the horizontal equity aspect of ability to pay. *Id.*

35. As noted above, the U.S. government borrowed an additional \$2.59 trillion dollars within the first eight months of the pandemic, which would equate to a 74% increase in tax revenue—well beyond what the political constraints of the U.S. would allow.

would limit its ability to respond to various crises. All that is to say, government debt is an important and beneficial tool, and there is generally no reason to prohibit the government from using it.

B. The Economic Limit of the Debt

The government's power to borrow is useful but not infinite. There is an economic limit to how much debt the U.S. government can accumulate.³⁶ Creditors only lend to the U.S. because they believe they will be repaid with interest.³⁷ The U.S. can raise funds to make real payments to creditors by running a surplus or by borrowing more. But if the debt is so large that the government's net interest exceeds what it can raise in taxes, then the only avenue for real repayment is additional borrowing, a scenario in which holding government debt becomes analogous to investing in a Ponzi scheme.³⁸ As long as the government can find another lender, anyone holding government debt will be repaid. This is not a stable equilibrium. As soon as an investor realizes that repayment is contingent on finding additional investors, she will sell her government debt holdings. As more and more investors do this, the value of government debt will plummet, and the government will be unable to borrow any more. To be sure, no one knows at what debt level the market for government debt collapses, but it is paramount to understand that there is a limit.³⁹

36. To get a sense of what this upper bound might be, let θ be the maximum fraction of its revenue the government could use to pay interest; τ be the highest fraction of GDP that the government could collect in tax revenue; Y be GDP; r be the average interest rate on government debt; and D be government debt. The maximum revenue that the government could collect would then be τY , the maximum interest payment the government could make would be $\theta \tau Y$, and the government's interest expense would be rD . To prevent government debt from becoming a Ponzi scheme, the condition $\theta \tau Y > rD$ must hold. Dividing both sides by r and Y yields $\theta \tau / r > D / Y$. In words, this inequality states that the debt-to-GDP ratio cannot exceed the maximum fraction of GDP that can be used to pay government debt interest divided by the interest rate.

37. To be clear, government debt never has to be repaid—it may be rolled over indefinitely. See RICHARD A. MUSGRAVE & PEGGY B. MUSGRAVE, PUBLIC FINANCE IN THEORY AND PRACTICE 706 (3d ed. 1980). But the government must maintain its capacity to repay or else there will be a crisis.

38. The US government requires willing investors to issue more debt. ROMER, *supra* note 26, at 607-12. Moreover, a crisis is likely to come about suddenly. As investors come to believe that holding debt is risky, they will require higher interest rates. A higher interest rate will increase the government's interest expense, which will make it more difficult to repay the debt, which, again, will require an increase in the interest rate; so on and so forth. As this happens the debt market quickly spirals into collapse. *Id.*

39. See Noah Smith, *No one knows how much the government can borrow*, NEWSBLUR (Jan. 22, 2021), <https://www.newsblur.com/newsletters/story/8065617:2686b6>. Smith highlights that knowing the debt limit would require an understanding of (1) at what point investors would be unwilling to hold government debt, even with higher interest rates, and (2) how much additional debt the Federal Reserve could hold before the increase in the money supply would cause substantial inflation. The best forecasts we have for exactly what debt level would cause the market to collapse rest upon various conflicting pieces of evidence.

If the U.S. opted not to repay its creditors by running surpluses or with additional borrowing, then it would have only two options, both deleterious: print money or default.⁴⁰ Printing money to repay creditors generally results in hyperinflation and often economic collapse.⁴¹ Indeed, hyperinflation is generally caused by unsustainable deficits.⁴² And ultimately, the most successful countermeasure to hyperinflation is the elimination of the budget deficit, which would require a substantial and abrupt tax increase or spending cut.⁴³

The other option, default, is no more attractive. There are many reasons why the U.S. should not default on the debt.⁴⁴ First, over 70% of U.S. government debt is held by U.S. private and public entities.⁴⁵ Defaulting would diminish the value of (1) privately held American wealth, (2) the assets in the trust funds from which the government pays Social Security and Medicare benefits, and (3) the assets held by the Federal Reserve. Second, sovereign default is often accompanied by a banking crisis and other economic maladies.⁴⁶ Third, default would lock the U.S.

40. To be clear: the U.S. does not print money to repay creditors. The Federal Reserve places orders for hard currency with the Treasury based on currency circulation and currency destruction rates. See *Currency Print Orders: 2022 Federal Reserve Note Print Order*, BOARD OF GOVERNORS OF THE FED. RES. SYS., https://www.federalreserve.gov/paymentsystems/coin_currency_orders.htm (last visited Aug. 15, 2020). Separately, the Federal Reserve uses monetary policy to change the available money supply (mostly money in accounts, not hard currency), most often by buying and selling assets on the open market. See *What is the difference between monetary policy and fiscal policy, and how are they related?*, BOARD OF GOVERNORS OF THE FED. RES. SYS., https://www.federalreserve.gov/faqs/money_12855.htm (last visited Aug. 15, 2020). When the government requires additional funds for expenditures, it borrows.

41. Governments generally print money to repay debts after they have run large budget deficits in response to a crisis, such as war. See ROMER, *supra* note 26, at 538-39. The countries that have attempted this include Germany in 1921-1923, Zimbabwe in 2007-2009, and Venezuela currently. See Scott A. Wolla and Kaitlyn Frerking, *Making Sense of the National Debt*, ECON. RSCH. FED. RSRV. BANK OF ST. LOUIS: PAGE ONE ECONS. (Nov. 2019), <https://research.stlouisfed.org/publications/page1-econ/2019/11/01/making-sense-of-the-national-debt>.

42. See Miguel A. Kiguel, *Budget Deficits, Stability, and the Monetary Dynamics of Hyperinflation*, 21 J. MONEY, CREDIT AND BANKING 148, 148 (May, 1989).

43. *Id.* at 154. See also ROMER, *supra* note 26, at 538-39.

44. There is widespread consensus that a default, or even a selective default, would be very harmful. This has not prevented uninformed politicians from speculating about default as a possibility. See Martha C. White, *Should the U.S. refuse to pay back its \$1 trillion debt to China?*, NBC NEWS (Jun. 11 2020), <https://www.nbcnews.com/business/economy/should-u-s-refuse-pay-back-its-1-trillion-debt-n1227351>.

45. Jeffrey Bartash, *Here's who owns a record \$21.21 trillion of U.S. debt*, MARKET WATCH (Aug. 23, 2018), <https://www.marketwatch.com/story/heres-who-owns-a-record-2121-trillion-of-us-debt-2018-08-21>. Currently only \$7.07 trillion of the government debt is held by foreigners. See *Major Foreign Holders of Treasury Securities*, U.S. DEP'T OF THE TREASURY, <https://ticdata.treasury.gov/Publish/mfh.txt> (last visited Feb. 28, 2021).

46. It's not clear whether a banking crisis follows from sovereign default, whether a banking crisis causes sovereign default, or whether some other factors cause both sovereign default and a banking crisis. But the correlation alone suggests that governments should avoid default. See Eduardo Borensztein & Ugo Panizza, *The Costs of Sovereign Default*, 56 IMF STAFF PAPERS 683, 713 (2009). See also Guido Sandleris, *The Costs of Sovereign Default: Theory and Empirical Evidence* 16 ECONOMÍA 1 (2016).

government out of credit markets and increase the U.S. cost of borrowing.⁴⁷

A useful way to think about the size and limit of government debt is the debt-to-GDP ratio.⁴⁸ The government's debt-to-GDP ratio combines the government's debt and the country's GDP into a single measure which reports how much debt the government has for each dollar of GDP. A government's capacity to take on debt increases with GDP because most tax bases, and certainly the largest ones, correlate to GDP.⁴⁹ While GDP should certainly not be thought of as the government's income, a higher GDP implies a greater government potential to raise future revenue and thus take on more debt.⁵⁰ The ratio also facilitates comparisons between countries and across time. Higher GDP countries, all other things equal, should be able to take on larger debts.⁵¹ And since GDPs and debts change over time, the debt-to-GDP ratio provides some sense of how a country's capacity to take on additional debt has changed over time.⁵²

Notably, the debt-to-GDP ratio can fall even if government debt grows but only if GDP grows faster than the debt. For example, if GDP and debt are both \$100, then the debt-to-GDP ratio is $\$100/\$100=1$. If the debt grows at a rate of 1% per year, which means the government has run a deficit, and GDP grows at a rate of 2% per year, then in the following year the ratio will be $\$101/\102 . Despite the fact that the government ran a deficit, the government's capacity to borrow increased. In this particular

47. On average, countries that default regain some credit market access after 5.7 years and full market access after 8.4 years. See Borensztein & Panizza, *supra* note 46, at 699. Recent sovereign defaults have increased the cost of borrowing by 20 basis points on average. *Id.* at 702. However, historically defaults have increased the cost of borrowing by much more. *Id.* at 703.

48. A country's GDP is its aggregate income. See N. GREGORY MANKIW, *PRINCIPLES OF MACROECONOMICS* 24 (5th ed. 2009). Several tax scholars have suggested alternative measures to express the state of the government's finances. Laurence Kotlikoff suggests Generational Accounting. See Laurence J. Kotlikoff, *From deficit delusion to the Fiscal Balance Rule: Looking for an economically meaningful way to assess fiscal policy*, 58 J. OF ECON. 17 (1993). Daniel Shaviro suggests a measure called "tax lag". See DANIEL SHAVIRO, *DO DEFICITS MATTER?* (1997). Jason Furman and Larry Summers argue that the debt-to-GDP ratio is a mismatch between a stock and a flow number. They suggest instead that GDP should be compared to interest expense and the debt should be compared to the present value of GDP. See Furman & Summers, *supra* note 30, at 3.

49. GDP is often subdivided into four categories: consumption, investment, government purchases, and net exports. See MANKIW, *supra* note 48. Income and consumption are ubiquitous tax bases that together account for a large fraction of government revenue in many countries. See JOEL SLEMROD & JON BAKIJA, *TAXING OURSELVES: A CITIZEN'S GUIDE TO THE DEBATE OVER TAXES* 18 (5th ed. 2017).

50. See ROMER, *supra* note 26, at 560-61.

51. The debt-to-GDP ratio for OECD countries ranges from .25 to 2.58. The United States is closer to the high end at 1.62. See *General Government Debt*, OECD, <https://data.oecd.org/gga/general-government-debt.htm> (last accessed Mar. 21, 2022).

52. Since 1980, the trend of the U.S. debt-to-GDP ratio has been up. See *Federal Debt: Total Public Debt as Percent of Gross Domestic Product*, FRED ECONOMIC DATA, <https://fred.stlouisfed.org/series/GFDEGDQ188S>.

example the government's debt could grow up to 2% without impairing its capacity to borrow.

If the GDP growth rate exceeds the interest rate, then the government may run a primary deficit without increasing the debt-to-GDP ratio.⁵³ If the interest rate exceeds the GDP growth rate, then the government must pay down its debt (i.e., run a surplus) or else its debt-to-GDP ratio will increase. Returning to our example, if GDP grows at 2%, and the interest rate is 1%, then the government may run a primary deficit of up to 1% of the debt without impairing its ability to repay. If the interest rate is exactly 2%, then non-interest expenditure cannot exceed government revenue without impairing the government's ability to repay. And if the interest rate is above 2%, then government revenue must exceed non-interest government expenditure or else the debt-to-GDP ratio will grow.

Until recently, the prevailing economic wisdom suggested that GDP growth rates were unlikely to exceed government debt interest rates for long periods of time.⁵⁴ This meant that governments needed to run primary surpluses to increase their capacity to borrow in the future. However, recent empirical analyses have shown that for many countries with advanced economies, GDP growth rates have more often than not exceeded government interest rates.⁵⁵ If this is correct, it has notable implications for what level of deficit is sustainable. In particular, it raises the possibility that government debt may be rolled over for the foreseeable future as long as primary deficits remain small.⁵⁶ If, however, the

53. Since there is uncertainty over both future government interest rates and future GDP growth, a more sophisticated approach might be to estimate the expected fiscal cost using a distribution of possible future interest rates and growth rates.

54. When the GDP growth rate exceeds the government interest rate, it might be evidence that the economy is suffering from inefficient oversaving, an economic malady called dynamic inefficiency. However, economic models that include uncertainty have shown that a GDP growth rate above the government interest rate without dynamic inefficiency is possible. ROMER, *supra* note 26, at 563-64.

55. Since 1950 nominal GDP average growth rates have been larger than average nominal interest rates on 1-year and 10-year government bonds in the U.S. See Olivier Blanchard, *Public Debt and Low Interest Rates*, 109 AM. ECON. REV. 1197, 1202 (2019). Moreover, forecasts suggest that interest rates are likely to remain below GDP growth rates for the US, the UK, the Euro Zone, and Japan at least for the near future. *Id.* at 1198; see also Furman & Summers, *supra* note 30, at 4-8. The U.S. never paid off what it borrowed to finance its World War II expenditures, but its capacity to borrow, nonetheless, was restored as the GDP growth rate exceeded the interest rate, more often than not, for several subsequent decades. See RICHARD A. MUSGRAVE & PEGGY B. MUSGRAVE, *PUBLIC FINANCE IN THEORY AND PRACTICE* 707 (3d ed. 1980). However, between 1945 and 1975, the U.S. often ran budget surpluses, and, during its deficit years, it borrowed relatively little. See *Federal Surplus or Deficit*, FRED ECONOMIC DATA, <https://fred.stlouisfed.org/series/FYFSD#0>.

56. Moreover, as the debt is rolled over, the debt-to-GDP ratio will decrease, meaning that there may be no fiscal cost to public debt. See Blanchard, *supra* note 55, at 1205. Low interest rates also have favorable implications for the welfare cost of public debt. *Id.* at 1225. This is, in part, why there is a consensus among economists that the U.S. should spend with an open hand to counteract the economic fallout from the COVID-19 pandemic, and why several economists argue that the U.S. should take advantage of low interest rates to spend on public goods such as infrastructure. See Long, *supra* note 6, <https://www.washingtonpost.com/business/2020/12/21/stimulus-bill-economy/>; Furman & Summers,

government runs large primary deficits in addition to rolling over its debts, then its debt-to-GDP ratio will grow. As the debt-to-GDP ratio grows, the interest rate on government debt will also grow.⁵⁷ Eventually, the interest rate will surpass the GDP growth rate, at which point the government will no longer be able to roll over its debt indefinitely.⁵⁸

C. Sustainable and Unsustainable Deficits

An ongoing primary deficit is sustainable if it *will not* cause the debt-to-GDP ratio to grow without bound. An ongoing primary deficit is unsustainable if it *will* cause the debt-to-GDP ratio to grow without bound. If the interest rate on government debt exceeds the GDP growth rate, no primary deficit is sustainable. Assuming the government is a going concern, it must run primary surpluses in at least some future years to prevent the debt-to-GDP ratio from growing without bound. If, on the other hand, the GDP growth rate exceeds the interest rate on government debt, the government has substantially more fiscal latitude. As noted above, if the government does not run a primary deficit, its debt-to-GDP ratio will fall over time because GDP is growing faster than its debt.

Now consider two scenarios, described in the table below, in which the government does run a primary deficit. In the first, the government has to borrow 12% of GDP every 11 years to counteract some exigency, such as a financial crisis or a pandemic—i.e., the government runs a *cyclical* primary deficit. In the second scenario, the government borrows 3.3% of GDP every year to finance ongoing expenditures—i.e., the government runs a *structural* primary deficit.⁵⁹

supra note 30, at 34. *But see* Michael Boskin, *Are Large Deficits and Debt Dangerous?*, (Nat'l Bureau of Econ. Research, Working Paper No. 26727, 2020), <https://www.nber.org/papers/w26727>, for a discussion of controversial assumptions that Blanchard makes.

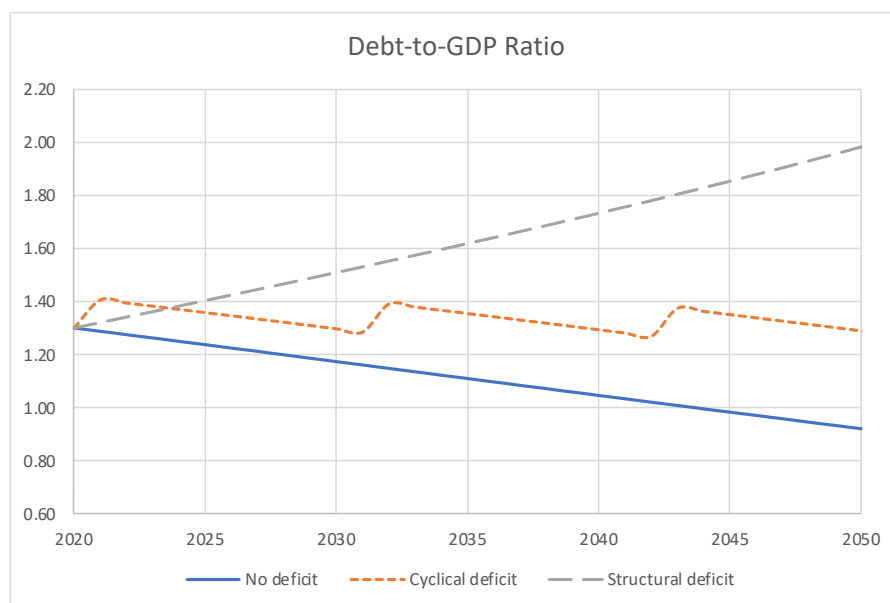
57. Investors demand a higher interest rate to lend to borrowers with large pre-existing debts. While interest rates generally have decreased over the past few decades, several empirical studies have shown that after accounting for the general decrease in interest rates, the interest rate on U.S. debt has increased with the U.S. debt-to-GDP ratio.

58. At this point, there will be a fiscal cost to debt. In other words, the government will eventually have to raise taxes or lower expenditures to cover interest payments.

59. These numbers were not selected at random. The U.S.'s current debt-to-GDP ratio is roughly 1.3; U.S. nominal GDP growth has been approximately 4% recently; the nominal interest rate on government debt has been approximately 3% recently; the primary deficit in the 2010s was approximately 3.3% of GDP; there were 11 years between the peak of the 2009 financial crisis and the peak of the COVID-19 pandemic; the U.S. spent less than 12% of GDP to mitigate the fallout from the Great Recession, but more to counteract the fallout from the COVID-19 pandemic. All that is to say, this example essentially partitions the U.S. primary deficit into its cyclical and structural parts to highlight how the cyclical part is sustainable, but the structural part is not. The simulation assumes that the interest rate on government debt grows 3 basis points for every percentage point increase in the debt-to-GDP ratio.

<i>Simulation Parameters</i>	<i>Structural</i>	<i>Cyclical</i>
	<hr/>	
<i>Initial debt-to-GDP ratio</i>	<i>1.3</i>	<i>1.3</i>
<i>GDP growth rate</i>	<i>4%</i>	<i>4%</i>
<i>Initial interest rate</i>	<i>3%</i>	<i>3%</i>
<i>Primary deficit (% of GDP)</i>	<i>3.3%</i>	<i>12%</i>
<i>Frequency of deficit</i>	<i>Every year</i>	<i>Every 11 years</i>

The graph below plots the debt-to-GDP ratio over time for these two scenarios in addition to the debt-to-GDP ratio over time with no primary



deficit.

As the graph shows, a cyclical primary deficit of 12% of GDP every 11 years is sustainable. Even without ever retiring any debt or paying off any interest, the debt-to-GDP ratio falls, albeit very gradually, over the long term. A structural primary deficit of 3.3%, however, is unsustainable. The structural deficit causes the debt to grow faster than GDP, meaning that the debt-to-GDP ratio will grow until it hits its economic limit.

This does not mean that all structural primary deficits are

unsustainable.⁶⁰ Nor does this suggest that cyclical deficits are better than structural deficits. A sufficiently high cyclical deficit would also cause the debt-to-GDP ratio to grow without bound. Nor does this imply that a government must choose between running a structural or a cyclical deficit—a government may run both types of deficits indefinitely if they are sufficiently small. However, cyclical deficits cannot be avoided without increasing taxes or lowering spending during a crisis. Thus, sustainable budget policy is likely to require small primary structural deficits (perhaps even primary surpluses) to ensure imperative large cyclical deficits remain sustainable.

D. The Costs of Government Debt

The cost of government debt depends on whether the primary deficit, including both structural and cyclical components, is sustainable or not. If the deficit is sustainable, then the debt and any accruing interest may be rolled over indefinitely. In that case, government borrowing has no fiscal cost, although it may have other costs.⁶¹

If the primary deficit is unsustainable, then government borrowing has substantially higher costs. First, the more the government borrows now, the less it can borrow in the future. In other words, borrowing later is an opportunity cost to borrowing today. Because there is a limit to what governments can borrow, an unsustainable deficit cannot be run indefinitely. Eventually, the government must reduce the amount it borrows. Countries with less capacity to borrow are said to have less fiscal space.⁶² The cost of less fiscal space is most apparent when a country

60. In this example, a primary deficit of up to 1% of the debt would not cause the debt-to-GDP ratio to climb. The interest rate causes the debt to grow by 3%. It can thus grow by up to an additional 1% without growing faster than 4%, the GDP growth rate.

61. Even if debt has no fiscal cost, it may have a welfare cost. Funding the government with borrowing instead of tax revenue likely reduces private investment because lower tax rates increase the incentive to consume. See ROMER, *supra* note 26, at 568-69. The effect will vary depending on whether the tax lower tax burden falls on capital or labor income, and there may be a short-run crowd-in effect. See Nora Traum & Shu-Chun S. Yang, *When Does Government Debt Crowd Out Investment?*, 30 J. APPLIED ECONOMETRICS 24 (2015). More generally, government debt may crowd out private investment. See ROMER, *supra* note 26, at 568-69. However, if the GDP growth rate exceeds the government interest rate, the welfare cost may be small. See Blanchard, *supra* note 55, at 1205. And if the economy is in a recession the likelihood and cost of crowding out is much lower. Neil Buchanan, *Generational Theft: U.S. Fiscal Policy Does Not Cheat Future Generations*, 52 CHALLENGE 44, 50-51 (2009) [hereinafter: “Buchanan, *U.S. Fiscal Policy Does Not Cheat Future Generations*”].

62. Lower fiscal space means a reduced capacity to raise spending or lower taxes without jeopardizing fiscal sustainability. See M. Ayhan Kose et al., *Fiscal Space: Concept, Measurement, and Policy Implications*, 19 WORLD BANK GROUP RESEARCH & POLICY BRIEFS 1, 1 (2018). However, the exact mechanism by which higher debt levels reduce fiscal space is not entirely clear. See Christina Romer & David Romer, *Fiscal Space and the Aftermath of Financial Crises: How It Matters and Why*, 2019 BROOKINGS PAPERS ON ECONOMIC ACTIVITY 239.

suffers a crisis. Historically, countries with low debt-to-GDP ratios tend to have relatively modest economic downturns, whereas countries with high ratios tend to experience large and long-lasting reductions in income.⁶³

Second, as noted above, higher debt levels increase government interest rates.⁶⁴ Investors require a higher interest rate to lend to borrowers with large pre-existing debts because the riskiness of a loan increases with the amount of debt the borrower is already saddled with.⁶⁵ For government debt purposes, this means the higher the debt-to-GDP ratio, the higher the interest rate on new debt.⁶⁶ While interest rates generally have decreased over the past few decades, several empirical studies have shown that after accounting for the general decrease in interest rates, the interest rate on U.S. debt has increased with the U.S. debt-to-GDP ratio.⁶⁷ If the interest rate is greater than the GDP growth rate, then the debt will accrue a fiscal cost.⁶⁸

Third, high debt levels may lead to costly political frictions. The debt

63. The evidence supporting this claim controls for several possible confounding factors. See Christina Romer and David Romer, *supra* note 62, at 240. High debt levels increase the likelihood of a financial crisis, including legal or economic default. See Auerbach, Gale & Krupkin, *supra* note 22, at 2. Inflation can lower, in real terms, the payments required to satisfy a country's sovereign debt. Economists consider this default. See John H. Cochrane, *Smith, MMT, and Science in Economics*, THE GRUMPY ECONOMIST (May 5, 2019), <https://johnhcochrane.blogspot.com/2019/05/smith-mmt-and-science-in-economics.html>. This may, however, not violate a contract and, as such, may not constitute legal default. See IMF Conference on Sovereign Debt: A Guide for Economists and Practitioners, *Chapter 7: Sovereign Default* 9 n. 11 (Sept. 13-14, 2018), <https://www.imf.org/en/News/Seminars/Conferences/2018/05/24/sovereign-debt-a-guide-for-economists-and-practitioners>. Several countries have done this. See *id.*

64. See Auerbach, Gale, & Krupkin, *supra* note 22, at 2. At higher debt levels, investors demand a higher default premium to compensate for higher default risk. See IVO WELCH, *CORPORATE FINANCE* 110-12 (4th ed. 2017).

65. *Id.*

66. See ROMER, *supra* note 26, at 608.

67. Estimates for the effect of a higher debt-to-GDP ratio on the interest rate vary. Typical estimates are that a one percentage point increase in the debt-to-GDP ratio increases the interest rate on government debt by 2 to 5.6 basis points. See, e.g., Thomas Laubach, *New Evidence on the Interest Rate Effects of Budget Deficits and Debt*, 7 J. EUR. ECON. ASS'N 858 (June 2009); See Eric M. Engen & R. Glenn Hubbard, *Federal Government Debt and Interest Rates*, 19 NBER MACROECONOMICS ANNUAL 83 (2004); and Gabriel Ehrlich & Aditi Thapar, *Public Debt Levels and Real Interest Rates: Causal Evidence from Parliamentary Elections*, SSRN (May 17, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3603563. Relatedly, another empirical study shows that the spread between Aaa long-term corporate bonds and long-term treasuries tends to decrease as the debt-to-GDP ratio increases. See Arvind Krishnamurthy & Annette Vissing-Jorgensen, *The Aggregate Demand for Treasury Debt*, 120 J. OF POLITICAL ECON. 233, 234 (2012).

68. If the interest rate exceeds the GDP growth rate, the government will at some point have to pay at least some of the interest that accrues on the debt. If the government is unable to roll over its debt, then its only options are default or repayment with printed money. Both of these options have dire consequences. See *infra* Part I.B.

ceiling crisis in 2011-2012 is a recent example.⁶⁹ U.S. law gives Congress the ultimate authority over how much the U.S. can borrow.⁷⁰ Republicans in Congress attempted to use this legal requirement as leverage to achieve political objectives.⁷¹ The GAO found that the 2011-2012 debt ceiling crisis resulted in additional borrowing costs totaling \$1.3 billion over that time period.⁷² These costs are likely only a small fraction of the total cost because they do not include any losses suffered after the crisis was resolved, the opportunity costs of the president and Congress (whose time could have been spent, one would hope, more productively), nor the broader costs to the economy.⁷³

In sum, debt is a useful and beneficial tool that the government can and should use to advance the interests of its citizens. But the debt has an economic limit—the government does not have an infinite capacity to borrow. A government cannot run an unsustainable deficit indefinitely, and the longer it runs an unsustainable deficit, the more costly the debt becomes.

II. THE CURRENT SITUATION IN THE U.S.

With the background provided in Part I, we turn now to the specifics of the U.S. debt and deficit. This Part begins by showing that the current U.S. deficit is unsustainable. It then explains why the only policy solution to an unsustainable deficit is to reduce the deficit. Lastly, it considers the timing of the U.S. response to the deficit. In particular, it compares immediate action to deferred action (deferred perhaps until there is a crisis). Unsurprisingly, immediate action results in better outcomes.

A. An Unsustainable Deficit

As of March 2022, the total U.S. government debt held by the public was \$23.790 trillion, and the total debt including intragovernmental holdings was \$30.293 trillion.⁷⁴ As of the fourth quarter of the

69. See U.S. GOV'T ACCOUNTABILITY OFF., GAO-12-701, DEBT LIMIT: ANALYSIS OF 2011-2012 ACTIONS TAKEN AND EFFECT OF DELAYED INCREASE ON BORROWING COSTS (July 2012), <https://www.gao.gov/assets/600/592832.pdf>.

70. See *id.*

71. See Jonathan Weisman & Ashley Parker, *Republicans Back Down, Ending Crisis Over Shutdown and Debt Limit*, N.Y. TIMES (Oct. 16, 2013), <https://www.nytimes.com/2013/10/17/us/congress-budget-debate.html>.

72. See U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 69.

73. See *id.*

74. See *Debt to the Penny*, FISCALDATA,

<https://fiscaldata.treasury.gov/datasets/debt-to-the-penny/debt-to-the-penny> (last updated Mar. 23, 2022).

government's 2021 fiscal year, the debt-to-GDP ratio was 1.23—and it is expected to grow substantially.⁷⁵ These numbers are large under both historical and international comparisons.⁷⁶ Nonetheless, there is evidence to suggest that this level of debt may be sustainable.⁷⁷ As economist Olivier Blanchard notes, U.S. nominal GDP growth has recently been around 4%, and the nominal interest rate on U.S. government debt has been around 3%.⁷⁸ Thus, if the GDP growth rate does not fall too much, the government's interest rate does not increase too much, and the government runs small primary deficits, then the U.S. may be able to

75. See *Federal Debt: Total Public Debt as Percent of Gross Domestic Product*, FRED ECONOMIC DATA, <https://fred.stlouisfed.org/series/GFDEGDQ188S>. The 2017 Tax Cuts and Jobs Act is expected to increase the government debt by between \$1 and \$2 trillion within ten years of its enactment. This is a not a partisan issue. The liberal-leaning Tax Policy Center and the conservative-leaning American Enterprise Institute concur. See *How did the TCJA affect the federal budget outlook?*, TAX POL'Y CTR. (2020), [https://www.aei.org/economics/the-tax-cuts-and-jobs-act-made-the-debt-worse-and-makes-fixing-it-even-harder/](https://www.taxpolicycenter.org/briefing-book/how-did-tcja-affect-federal-budget-outlook#:~:text=The%20Tax%20Cuts%20and%20Jobs%20Act%20cut%20taxes%20substantially%20from,debt%2C%20according%20to%20official%20estimates; Maya MacGuineas, The Tax Cuts and Jobs Act made the debt worse and makes fixing it even harder, AEIDEAS BLOG (Oct. 22, 2019), https://www.aei.org/economics/the-tax-cuts-and-jobs-act-made-the-debt-worse-and-makes-fixing-it-even-harder/). And the COVID-19 pandemic has increased U.S. government spending by \$2.59 trillion through September 1, 2020. See DATALAB, *supra* note 29. The total cost of the government response to the pandemic is expected to be much larger. Congress passed two relief bills in 2020 totaling \$3.9 trillion, and President Biden has proposed an additional \$1.9 trillion dollar relief bill. See Tami Luhby & Katie Lobosco, *Here's what's in Biden's \$1.9 trillion economic rescue package*, CNN (Jan. 15, 2021), <https://www.cnn.com/2021/01/14/politics/biden-economic-rescue-package-coronavirus-stimulus/index.html>.

76. Before the COVID-19 pandemic, the U.S.'s previous record was 1.06 during World War II. See *Federal Debt: A Primer*, CONG. BUDGET OFF. 3 (Mar. 12, 2020), <https://www.cbo.gov/publication/56165>. The three countries with the highest current debt-to-GDP ratios are Sudan (2.73), Greece (2.26), and Japan (2.21). See *Central Government Debt, Percent of GDP*, INTERNATIONAL MONETARY FUND, https://www.imf.org/external/datamapper/CG_DEBT_GDP@GDD/JPN (last accessed Mar. 22 2022). Greece required a bailout during the Euro debt crisis. See *Greece emerges from eurozone bailout programme*, BBC (Aug. 20, 2018), <https://www.bbc.com/news/business-45243088>, and Sudan is currently in the process of negotiating a debt bailout. See Andrea Shalal, *IMF says working intensively with Sudan to move toward debt relief*, NASDAQ (Jan. 18, 2021), <https://www.nasdaq.com/articles/imf-says-working-intensively-with-sudan-to-move-toward-debt-relief-2021-01-18>. That being said, the US has some substantial structural and institutional advantages over Sudan and Greece that limit the usefulness of these comparisons.

77. Moreover, the debt is too large to be paid off quickly. The U.S. would have to increase government revenues by 82% to repay the debt in 10 years, 51% to repay the debt in 20 years, and 40% to repay the debt in 30 years. Author's computations which disregard the COVID-19 anomaly and assume that GDP growth, government interest rate, and government expenditures as a share of GDP all remain constant. Available upon request. To be clear, this means that, on average, every tax payment would have to be increased by 82% in order to repay the debt within 10 years. If a taxpayer's tax bill were \$100 before the tax increase, assuming all taxpayers bore the increase uniformly, that taxpayer's tax bill would now be \$182. And this increase in tax revenue would be accompanied by no increase in government spending. Statutory tax rates would likely have to increase much more as taxpayers responded to higher taxes with more avoidance and evasion behavior. See Charles T. Clotfelter, *Tax Evasion and Tax Rates: An Analysis of Individual Returns*, 65 REV. ECON. & STAT. 363, 363 (1983). These would be crushing taxes that no benevolent policymaker would consider imposing. See William G. Gale, *Five Myths About Federal Debt*, BROOKINGS (May 2, 2019), <https://www.brookings.edu/opinions/five-myths-about-federal-debt/>.

78. See Blanchard, *supra* note 55, at 1202.

rollover its debt for the foreseeable future and possibly indefinitely.⁷⁹

However, the U.S. is running large and persistent primary deficits.⁸⁰ In the past 50 years, the U.S. has run a primary deficit 37 times and in each year since 2007.⁸¹ Moreover, the size of the deficits is increasing. As the table below shows, the primary deficit as a percentage of GDP was three times higher in the 2010s than it was in the 1980s—and the 2010s were a decade with little if any cyclical deficit, avoiding the brunt of the Great Recession and entirely escaping the COVID-19 pandemic.⁸²

<i>Decade</i>	<i>Deficit or Surplus</i>	<i>Primary Deficit (as % of GDP)</i>
<i>1950s</i>	<i>Surplus</i>	<i>-.89%</i>
<i>1960s</i>	<i>Surplus</i>	<i>-.45%</i>
<i>1970s</i>	<i>Deficit</i>	<i>.59%</i>
<i>1980s</i>	<i>Deficit</i>	<i>1.09%</i>
<i>1990s</i>	<i>Surplus</i>	<i>-1.00%</i>
<i>2000s</i>	<i>Deficit</i>	<i>.78%</i>
<i>2010s</i>	<i>Deficit</i>	<i>3.31%</i>

In 2020, the U.S. ran a \$2.784 trillion primary deficit, which is expected to fall slightly to \$2.672 trillion in 2021 and then to \$.848 trillion

79. Whether there is a welfare cost is a more complicated question that depends on numerous factors and is beyond the scope of this paper. Moreover, across the political spectrum economists agree now is the time to spend. See Heather Long, *This recession is already deep. If Congress fails to act, a lot of damage could be permanent.*, WASH. POST (July 20, 2020), <https://www.washingtonpost.com/business/2020/07/30/economists-favor-big-stimulus/>.

80. There is widespread agreement that the deficit is not sustainable. See, e.g., Auerbach, Gale, & Krupkin, *supra* note 22. Even economists Jason Furman and Larry Summers, strong proponents of more spending, write, in a paper in which they advocate for more substantially spending now, that "...current projections do raise concerns over the fiscal situation beyond 2030..." See Furman & Summers, *supra* note 30, at 3. Moreover, unsustainable deficits are associated with "macroeconomic instability arising from undesirable consequences for a wide range of other macroeconomic variables." See Joseph Mawejje and Nicholas M. Odhiambo, *The determinants of fiscal deficits: a survey of literature*, 67 INTERNATIONAL REVIEW OF ECONOMICS 403, 404 (2020).

81. See *Historical Tables*, WHITE HOUSE, OFF. MGMT. & BUDGET, <https://www.whitehouse.gov/omb/historical-tables/>. Tables 1.1, 1.2, 1.3, and 3.1 were used in these computations.

82. *Id.* The primary deficit numbers in the table were computed by taking the sum of all real primary deficits over the decade and dividing that by total real GDP over the decade. Negative numbers indicate a surplus.

in 2022 after the worst of pandemic has passed.⁸³ Stated relative to GDP, the 2020 primary deficit was 13.3% of GDP but is expected to eventually stabilize at 2.3% of GDP.⁸⁴ All that is to say, the U.S. government is running both large structural and cyclical primary deficits, which combined are rapidly increasing the U.S. debt-to-GDP ratio.

As noted in Part I, there are two related problems with a growing debt-to-GDP ratio.⁸⁵ First, as the ratio grows, the U.S. can borrow less in the future. The less fiscal space the U.S. has, the higher the likelihood of a financial crisis and severe political frictions.⁸⁶ Second, a higher debt-to-GDP ratio will lead to higher interest rates on the debt. Empirical evidence bears this out.⁸⁷ Controlling for the general decline in interest rates, several econometric studies suggest that for each percentage point increase in the debt-to-GDP ratio, the interest rate on U.S. government debt will increase by approximately 3 basis points.⁸⁸ A higher interest rate will increase interest expense, exacting further demands on U.S. fiscal

83. See *Additional Information About the Updated Budget and Economic Outlook: 2021 to 2031*, CONG. BUDGET OFF. 6 (July 2021), <https://www.cbo.gov/publication/57263>. These numbers are likely an underestimate because the CBO is constrained to forecast using current law, meaning it assumes temporary tax cuts will expire and military spending will remain at current levels, among other similar assumptions. *Id.* at 5. History has shown, however, that Congress generally enacts legislation to extend tax cuts and increase military expenditures. See Auerbach & Gale, *supra* note 5, at 1555-56.

84. See *Additional Information About the Updated Budget and Economic Outlook: 2021 to 2031*, CONG. BUDGET OFF. 6 (July 2021), <https://www.cbo.gov/publication/57263>.

85. To get a rough sense for what the U.S.'s economic debt-to-GDP limit might be, recall from Part I that to prevent government debt from becoming a Ponzi scheme, the condition $\theta\tau/r > D/Y$ must hold—the U.S. must be able to collect enough in taxes to at least pay interest on the debt. Assigning numbers to these variables is an uncertain endeavor, but I will do so for illustrative purposes. The government currently spends 10% of its receipts on interest; assume this number cannot exceed 30%. Federal government receipts currently amount to 16% of GDP; assume this cannot exceed 50%. Recently government average interest rates have been about 3%; assume the interest rate does not increase—despite the available evidence suggesting that it will. Under these assumptions, the economic limit to the debt-to-GDP ratio would be $.3 \cdot .5 / .03 = 3$. Note this would make the U.S. the highest tax country with an advanced economy in the world. The highest tax countries in the OECD currently are Belgium, Denmark, France, and Sweden. Their tax revenue as a percentage of GDP hovers around 45%. See *Revenue Statistics - OECD Comparative Tables*, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (Aug. 15, 2020), <https://stats.oecd.org/Index.aspx?DataSetCode=REV#>.

86. See *supra* Part I.A.

87. While it is true that the interest rate on government debt has trended down over time, the same can be said for most interest rates in the U.S. Economists have shown that the difference between corporate bond interest rates and government debt interest rates fall as the debt-to-GDP ratio increases. See Krishnamurthy & Vissing-Jorgensen, *supra* note 67, at 234. In other words, relative to corporate bonds, the interest on government debt is higher at higher debt-to-GDP ratio.

88. See, e.g., Thomas Laubach, *New Evidence on the Interest Rate Effects of Budget Deficits and Debt*, 7 J. EUR. ECON. ASS'N 858, 858 (2009); See Engen & Hubbard, *supra* note 67, at 83; and Gabriel Ehrlich and Aditi Thapar, *Public Debt Levels and Real Interest Rates: Causal Evidence from Parliamentary Elections*, SSRN (May 17, 2020) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3603563.

space.⁸⁹ And if the current course holds, at some point in the future, the interest rate on U.S. government debt will exceed the U.S.'s GDP growth rate. This will be an inflection point for U.S. government finances because the debt will then surely have a fiscal cost.

This prospect raises two multi-trillion-dollar questions, which are examined in the remainder of this Part. First, what policy options does the U.S. have to make the deficit sustainable? And second, what are the consequences of addressing the deficit later rather than sooner? This Part shows that the answer to the first question is clear: In the long run, the only way to make the deficit sustainable is to reduce it. The answer to the second question is more nuanced. Generally, the sooner the government acts, the less painful the deficit reduction will be. However, the rate at which the deficit grows, coupled with global economic conditions and U.S. economic conditions in particular, will have an enormous impact on the size of the debt's costs and the amount of time before the constraints imposed by the debt bind. In other words, it is difficult to forecast the costs of forestalling deficit reduction.

B. Policy Options to Resolve the Unsustainable Deficit

Barring some unlikely change, the U.S. government will eventually have to act. Five policy solutions have been suggested to address the government's long-term fiscal imbalance: tax cuts, default, inflation, spending cuts, and tax increases.⁹⁰ The first three are nonviable. Tax cuts, default, and inflation would aggravate, not resolve, the government's financial problems.⁹¹ And it would be difficult to substantially reduce the deficit with a spending decrease, meaning that in all likelihood a majority of the deficit reduction will have to come from a tax increase.

This Section begins by addressing the nonviable options. First, there are some who make the specious claim that, under current conditions,

89. The CBO projects that U.S. interest expense will grow from \$338 billion in 2020 to \$664 billion in 2030 or from 1.6% of GDP to 2.2% of GDP. See *An Update to Budget Outlook: 2020 to 2030*, CONG. BUDGET OFF. (Sept. 2020), <https://www.cbo.gov/publication/56542>.

90. A sixth alternative would be to increase government expenditures in the hopes that higher government spending would drive up GDP growth rates to the point at which they exceed the government interest rate. Because higher spending would increase the deficit, this would require an impossibly large increase in GDP growth rates.

91. Demonstrating a remarkable ignorance of financial markets, President Trump suggested reneging on outstanding U.S. government debt obligations to China. See John Foley, *America could actually shirk its debts to China*, REUTERS (May 3, 2020), <https://www.reuters.com/article/us-united-states-china-debt-breakingview/breakingviews-america-could-actually-shirk-its-debts-to-china-idUSKB N22G05Q>. A few Republican senators followed suit. See Martha C. White, *Should the U.S. refuse to pay back its \$1 trillion debt to China?*, NBC NEWS (June 11, 2020), <https://www.nbcnews.com/business/economy/should-u-s-refuse-pay-back-its-1-trillion-debt-n1227351>.

cutting taxes would lead to higher revenue.⁹² They claim that the U.S. tax rate is above the revenue-maximizing tax rate.⁹³ It is true that somewhere between 0% and 100% is the revenue-maximizing tax rate.⁹⁴ This revenue-maximizing tax rate should not be the government's objective, but it should serve as an upper bound to good policy because, at rates above this upper bound, the government can both increase revenue and lessen the negative impact of taxes by lowering rates.⁹⁵ However, the U.S. is nowhere near the revenue-maximizing tax rate. The evidence for this is abundant. Simply put, revenues have increased when rates have increased, and revenues have decreased when rates have decreased.⁹⁶

Second, there are some that make the preposterous claim that defaulting on the debt would be advantageous.⁹⁷ Those who make this claim are wrong for many reasons including that they do not account for the unsustainable deficit. The U.S. government is forecasted to be an enormous debtor for the foreseeable future. Default would eliminate past debts but would not resolve the budgetary imbalance that necessitates future borrowing. Without a doubt, default would exacerbate the problem by locking the U.S. out of credit markets and increasing the U.S. cost of borrowing.⁹⁸ If locked out of credit markets, the U.S. would have to

92. See Mike Patton, *Do Tax Cuts Increase Government Revenue?*, FORBES (Oct. 18, 2012), <https://www.forbes.com/sites/mikepatton/2012/10/15/do-tax-cuts-increase-government-revenue/?sh=5cef15954bf2>. This incredibly flawed analysis looks at correlations between the top marginal tax rate and nominal government revenue. Serious scholars have found that the revenue-maximizing marginal tax rate is 55% or higher. See Sarah K. Burns and James P. Ziliak, *Identifying the Elasticity of Taxable Income*, 127 ECON. J. 297 (Mar. 2017).

93. Technically, they claim that U.S. tax rates are above the revenue-maximizing tax rates because there is more than one tax rate.

94. If a tax rate of 100% were applied to an economic activity, one would expect little if any of that economic activity to be reported for tax purposes. It follows that at a 100% tax rate, the government will collect little if any revenue. Similarly, at a tax rate of 0%, there is obviously no tax revenue. As the tax rate increases from 0%, and decreases from 100%, government revenue gets larger.

95. This concept is sometimes referred to as the Laffer curve—a poor name given that Arthur Laffer popularized but did not invent it. The original intuition is attributed to Ibn Khaldun, an Arab social theorist, writing in the 14th century. Virtually no economists across the political spectrum believe that the U.S. is on the wrong side of the curve. See Elizabeth Popp Berman, *Trump is Giving Arthur Laffer the Presidential Medal of Freedom. Economists aren't smiling.*, WASH. POST (June 1, 2019), <https://www.washingtonpost.com/politics/2019/06/01/trump-is-giving-arthur-laffer-presidential-medal-freedom-economists-arent-laughing/>.

96. One need look no further than the 2017 Tax Cuts and Jobs Act for ample proof. See William G. Gale et al., *Effects of the Tax Cuts and Jobs Act: A Preliminary Analysis*, TAX POL'Y CTR 8 (June 13, 2018); SLEMRD & BAKIJA, *supra* note 49, at 223-24.

97. See Martha C. White, *Should the U.S. refuse to pay back its \$1 trillion debt to China?*, NBC NEWS (Jun. 11 2020), <https://www.nbcnews.com/business/economy/should-u-s-refuse-pay-back-its-1-trillion-debt-n1227351>; John Foley, *Breakingviews - America could actually shirk its debts to China*, REUTERS (May 3, 2020), <https://www.reuters.com/article/us-united-states-china-debt-breakingview/breakingviews-america-could-actually-shirk-its-debts-to-china-idUSKBN22G05Q>.

98. It takes sovereign defaulters, on average, 5.7 years to regain partial credit market access and 8.4 years to regain full access. See EDUARDO BORENSZTEIN AND UGO PANIZZA, *THE COSTS OF*

eliminate its deficit, which would require abrupt and large tax increases or spending cuts.

Third, some argue that inflation could resolve the government's fiscal imbalance.⁹⁹ Those in the inflation-will-save-the-day camp make the same conceptual error as those who believe that default would be beneficial. Inflation generally helps debtors (with fixed interest rates) by decreasing the real value of what they must repay to their creditors.¹⁰⁰ But the U.S. government does not plan to pay off its loans—it intends to roll them over and borrow substantially more to boot. Inflation will simply increase the nominal cost of future borrowing, making any reprieve temporary. An empirical study that carefully looks at the maturity structure of U.S. government debt obligations shows that there is little benefit to inflating current debt away.¹⁰¹

If higher inflation created uncertainty over the level of future inflation, investors might insist on contractual inflation protections and demand higher interest rates for the increased risk, thereby aggravating the government's fiscal imbalance.¹⁰² This effect would be exacerbated if investors attributed the increased inflation to poor governance, and the effect would likely be severe if investors believed the government were intentionally creating inflation to manage the debt.¹⁰³ If inflation grew too high, the U.S. could be shut out of credit markets entirely.¹⁰⁴ This, again, would result in abrupt and large tax increases or spending cuts. Moreover, inflation is an unpredictable behavioral phenomenon that is not entirely understood and, even at moderate levels, can be costly and regressive.¹⁰⁵

SOVEREIGN DEFAULT 699. Recent sovereign defaults have been associated with a 20-basis point increase in the interest rate *Id.* at 702.

99. See Noah Smith, *Inflation Is the Way to Pay Off Coronavirus Debt*, BLOOMBERG NEWS (May 7, 2020), <https://www.bloomberg.com/opinion/articles/2020-05-07/inflation-is-the-way-to-pay-off-coronavirus-debt>.

100. See G. L. Bach & Albert Ando, *The Redistributive Effects of Inflation*, 39 REV. ECON. & STATISTICS 1 (1957). This effect will not apply when inflation protections are written into the debt instruments. 9% of U.S. government debt is Treasury Inflation Protected Securities, which inflation will not reduce in real value. See *Federal Debt: A Primer*, CONG. BUDGET OFF. 3 (Mar. 12, 2020), <https://www.cbo.gov/publication/56309#:~:text=Treasury%20Inflation%20Protected%20Securities&text=The%20value%20of%20outstanding%20TIPS,percent%20of%20all%20marketable%20debt>.

101. See Jens Hilscher et al., *Inflating away the public debt? An empirical assessment* (October 2020), <https://personal.lse.ac.uk/reisr/papers/99-HilscherRavivReisdebt.pdf>.

102. High or variable inflation discourages investment. See ROMER, *supra* note 26, at 550.

103. *Id.*

104. Hyperinflation is generally followed by an economic crisis. See Scott A. Wolla & Kaitlyn Frerking, *Making Sense of the National Debt*, RSCH. FED. RSRV. BANK OF ST. LOUIS: PAGE ONE ECON. (Nov. 2019), <https://research.stlouisfed.org/publications/page1-econ/2019/11/01/making-sense-of-the-national-debt>.

105. Inflation causes people to engage in unproductive activities to avoid holding real money balances and causes people and businesses to incur costs because of more frequent price changes. See ROMER, *supra* note 26, at 548. More substantial costs arise because inflation introduces distortions into the tax system—for example, nominal, not real, capital gains are subject to tax, meaning effectively a

Inflation has proven time and again that it does not submit to the will of government institutions. History offers numerous examples of governments trying and failing to lower or raise inflation or succeeding but at a substantial cost.¹⁰⁶

The U.S. has an unsustainable deficit problem. Its outlays are projected to exceed its revenues by a substantial margin for the foreseeable future, meaning that the U.S. government will have to borrow substantial amounts for the foreseeable future. Lower taxes, default, and inflation will not resolve the deficit—instead they will exacerbate the strain on government finances.¹⁰⁷ So as tax policy experts have long known, there are only two viable solutions to the deficit problem: raise taxes or lower expenditures (or some combination of the two).

The vast majority of tax academics believe that tax increases should be used in a deficit reduction effort.¹⁰⁸ Moreover, there is no obvious legislative coalition that would vote in favor of the drastic cuts necessary to make the deficit sustainable. Any substantial decrease in the deficit would require cuts to the three largest budget items—Social Security programs, major healthcare programs (mostly Medicare and Medicaid), and defense—which together comprised \$2.97 trillion (or 78%) of the

higher capital gains tax. *Id.* If people are not perfectly rational there are additional costs to inflation, including that people may misprice items or have difficulty making optimal spending decisions. *Id.* at 549. People also strongly dislike inflation. *Id.* Lastly, there is a negative association between inflation and investment. *Id.* at 550. There is also substantial evidence that inflation is regressive. See Andrés Erosa & Gustavo Ventura, *On inflation as a regressive consumption tax*, 49 J. MONETARY ECON. 761, 762. (2002); Stefania Albanesi, *Inflation and inequality*, 54 J. MONETARY ECON. 1088 (2007); and William Easterly & Stanley Fischer, *Inflation and the Poor*, 33 J. MONEY, CREDIT AND BANKING 160 (2001).

106. All other things constant, an increase in the money supply will cause inflation. Of this there is no doubt. See ROMER, *supra* note 26, at 497-98. Over the past two decades, U.S. monetary policy has increased the money supply without a concomitant increase in inflation. The correct inference to draw from this fact is not that an increase in money supply has no effect on inflation. Rather, the correct inference is that inflation is a complicated behavioral economic phenomenon that economists do not completely understand. And, indeed, one need only think of the 1970s and 80s when the U.S. had high inflation and the only solution then was to intentionally enter the U.S. into a recession, a course of action that should undoubtedly be avoided if possible. Carl Walsh, *October 6, 1979*, FRBSF ECONOMIC LETTER 2004-35 (Dec. 2004).

107. Default often leads to a tax increase. See ROMER, *supra* note 26, at 606. Greece, for example, as a condition of the emergency funds it received in 2010, was required to raise taxes, lower expenditures, and make several other policy changes. See *Explaining Greece's Debt Crisis*, N.Y. TIMES (June 17, 2016), <https://www.nytimes.com/interactive/2016/business/international/greece-debt-crisis-euro.html>. And ultimately, the most successful countermeasure to high inflation is the elimination of the budget deficit, which almost certainly requires large tax increases. See Kiguel, *supra* note 42, at 154. See also ROMER, *supra* note 26, at 538-39.

108. 77% of National Tax Association members who participated in a survey responded “yes” to the question, “Should federal revenues as a share of the U.S. economy come up above past historical averages (of 18–19 percent) as part of any deficit reduction effort?” Diane Lim et al., *Expert and Public Attitudes Towards Tax Policy: 2013, 1994, and 1934*, 66 NAT'L TAX J. 775, 783 (2013). In the political arena, there are some who call for decreased expenditures, but few are explicit about what should be cut and even fewer in positions of power consistently vote to cut expenditures.

U.S. government's budget in 2019.¹⁰⁹ To make the 2019 budget sustainable, for example, would require a deficit reduction of several hundred billion dollars.¹¹⁰ The three largest non-defense discretionary items in 2019 were education, training, employment, and social services (\$95 billion); transportation (\$94 billion); and veterans' benefits and services (\$85 billion).¹¹¹ These are tiny fractions of the budget, which even if entirely cut and summed together would not sufficiently reduce the deficit. Given the political difficulties inherent in cutting defense, Social Security, and Medicare spending, substantial tax increases will almost surely be part of any viable solution.¹¹²

C. The Timing of Deficit Reduction

The deficit must be reduced at some point in the future. Now, in the midst of a pandemic, is not the time to reduce the deficit.¹¹³ Nonetheless, the longer the U.S. government waits, the more painful the deficit reduction will be.¹¹⁴ Deferring action will result in less fiscal space, higher interest rates, more political friction, a higher probability of a crisis, and a larger required deficit reduction. That being said, any predictions about the future of government finances must begin with the concession that there is enormous uncertainty, making it impossible to precisely forecast the cost of deferring action.¹¹⁵ To forecast GDP and the government's

109. In 2019, spending on Social Security programs totaled \$1.04 trillion, spending on major healthcare programs (mostly Medicare and Medicaid) totaled \$1.26 trillion, and defense spending totaled \$676 billion. *The Budget and Economic Outlook: 2020 to 2030*, CONG. BUDGET OFF., 7, 18, 22 (Jan. 2020).

110. How large the spending cut would have to be to make the deficit sustainable is debatable. In 2019, the total deficit was \$984 billion, and the primary deficit was \$608 billion. *Id.* at 7, 24. In any given year, the U.S. government can run a total deficit equal to the deficit times the GDP growth rate without reducing fiscal space. In 2019, a deficit of \$672 billion (4% times \$16,803 billion) would not have reduced fiscal space. Looking at 2019 alone, the U.S. would *only* require a deficit reduction of \$312 billion. However, every decade or so the government runs an enormous cyclical deficit to counteract an exigency (e.g., the Great Recession and the COVID-19 pandemic). Taking the cyclical deficit into account, the U.S. likely needs eliminate its structural primary deficit. In other words, the U.S. deficit exceeded what is sustainable in 2019 by roughly \$608 billion. And at higher interest rates, the required cuts would be even larger.

111. *The Federal Budget in 2019, A Closer Look at Discretionary Spending*, CONG. BUDGET OFFICE 2 (Apr. 2020).

112. To eliminate the primary deficit in 2019, the government would have needed to cut Social Security and major healthcare programs by Medicare by at least 26%. In future years, the required cuts would be much larger because of the unfavorable demographics of the U.S.

113. See Long, *supra* note 79.

114. See Auerbach, Gale, & Krupkin, *supra* note 22, at 2.

115. Experts do not even agree on what indicators best foretell a pending crisis for U.S. government finances. Those who argue that shrinking the deficit should be an immediate priority tend to focus on the fact that the debt-to-GDP ratio is nearing its all-time high and that the deficit is growing at an increasingly fast rate. See, e.g., Auerbach, Gale & Krupkin, *supra* note 22, at 2-3. They argue that the fundamental problem is that the United States has no plan to shrink its deficit, which itself will only grow worse as the

budget requires estimates for several economic, demographic, geopolitical, and meteorological parameters, about which anyone can, frankly, only make an educated guess. If the deficit grows (but grows slowly), and global economic conditions (and U.S. economic conditions in particular) are good, then the cost of inaction may be low, and the U.S. may not have to shrink its deficit for decades.¹¹⁶ If the deficit continues to grow at an increasingly fast pace, or the U.S. does not recover quickly from the COVID-19 pandemic, then the cost of inaction will be high, and the deficit will have to be dealt with sooner.

To begin with the good news, the U.S. has an enormous capacity to borrow.¹¹⁷ Despite debt reaching record highs, interest rates and inflation remain low.¹¹⁸ This is, at least in part, because U.S. government debt is

U.S. population ages and Social Security and Medicaid expenditures increase. *See id.* at 9. Those who argue that shrinking the deficit need not be an immediate priority point to the incredibly low interest rates at which the U.S. government can borrow. *See, e.g.,* Blanchard, *supra* note 55, at 1197; Jason Furman & Lawrence Summers, *Who's Afraid of Budget Deficits: How Washington Should End Its Debt Obsession*, FOREIGN AFFAIRS (Mar.-Apr. 2019), <https://www.foreignaffairs.com/articles/2019-01-27/whos-afraid-budget-deficits>. These low interest rates also imply a low interest cost of debt and suggest that the collective wisdom of the financial markets considers U.S. government debt a very low risk investment despite its recent history and forecasted trajectory of rapid debt growth. A third view posits that the most important indicator of whether the government is nearing fiscal crisis is the rate of inflation of U.S. dollar. *See, e.g., Inflation*, THE GOWER INITIATIVE FOR MODERN MONETARY STUDIES, <https://gimms.org.uk/fact-sheets/inflation/>. Under this view, because the U.S. government can print dollars at will, deficits are of little concern until expansion in the money supply causes inflation. *See id.* Only when the rate of inflation increases will the U.S. be forced to confront the deficit. However, as noted above, fighting inflation can be difficult, painful, and costly.

116. Positive changes that would help include new technological developments that increase the rate of GDP growth or an influx of highly productive immigrants that consume relatively few government services. Negative changes that would help include a sudden substantial decrease in life expectancy without an increase in healthcare costs or working years. And, of course, if a meteor destroys the earth, the entire discussion becomes moot.

117. There is still strong demand for U.S. government debt at very low interest rates, which suggests that the collective wisdom of the financial markets finds the U.S. government has a low default risk. Fitch Ratings, a credit rating agency, gives U.S. government debt a AAA rating, the highest on its scale. However, Fitch has a negative outlook on U.S. debt because of the high debt and deficit. *See Fitch Revises United States' Outlook to Negative; Affirms at 'AAA'*, FITCH RATINGS (July 31, 2020), <https://www.fitchratings.com/research/sovereigns/fitch-revises-united-states-outlook-to-negative-affirms-at-aaa-31-07-2020>.

118. Interest rates are low by historical standards. *See Federal Net Interests Costs: A Primer*, CONG. BUDGET OFF. (Dec. 2020), <https://www.cbo.gov/publication/56910#:~:text=As%20a%20result%2C%20despite%20the,see%20Figure%201%20D1>). Since the onset of the Great Recession U.S. government borrowing has exploded. Normally this would drive interest rates up, but demand for U.S. government debt also grew for a few reasons. First, investors, and especially foreign investors, showed an increased preference for the relative safety and liquidity of U.S. government debt. Second, changes in banking regulations required banks to hold safer assets, including treasuries. *See* David Andolfatto & Andrew Spewak, *On the Supply of, and Demand for, U.S. Treasury Debt*, 5 ECON. SYNOPSES 1, 1-3 (2018), <https://research.stlouisfed.org/publications/economic-synopses/2018/03/09/on-the-supply-of-and-demand-for-u-s-treasury-debt/>. The other concern is inflation because U.S. debt is very liquid it may act like a type of money. *See* Krishnamurthy & Vissing-Jorgensen, *supra* note 67, at 234. This is even more of a concern because the Federal Reserve has purchased treasuries on the open market, actually increasing the money supply. *See Assets: Securities Held Outright: U.S. Treasury Securities: All: Wednesday Level*,

viewed as a safe and liquid investment, even when compared to the government debt of similar countries.¹¹⁹ And government interest rates show no clear signs of a looming rapid increase.¹²⁰

Other indicators are less favorable. GDP growth has slowed in the past several decades.¹²¹ Between 1960 and 2000, real per capita GDP grew over 2.39% per year, but it grew only 1.12% per year between 2000 and 2019.¹²² Lower GDP growth means the growth in the U.S. government's capacity to raise revenue is also falling. Moreover, lower GDP growth makes it less likely that the U.S. can rollover its debt without a fiscal cost.

Demographic projections are also worrying. The U.S. is a “graying nation.”¹²³ Increases in life expectancy and decreases in fertility have swelled the portion of the population above age 65.¹²⁴ This shift to an older population will substantially increase the demands on Social Security and Medicare, which will further grow the deficit.¹²⁵

However, the largest cause for concern is the growing fraction of government spending paid for with borrowing and the increasingly fast growth rate of the deficit. Even in 2019, before the pandemic, the U.S. government borrowed over 22.1% of its budget.¹²⁶ And since 1950, the

FRED ECONOMIC DATA, <https://fred.stlouisfed.org/series/TREAST>. Nonetheless inflation remains low. See *Inflation, consumer prices for the United States*, FRED ECONOMIC DATA, <https://fred.stlouisfed.org/series/FPCPITOTLZGUSA>.

119. Treasuries have two advantages over bank deposits. First, treasuries typically pay a higher interest rate. Second, bank deposits are only insured up to \$250,000, whereas any size treasury holdings are backed by the U.S. government. Moreover, treasuries can be used as collateral to borrow cash at low rates in a repo transaction. See David Andolfatto, *Does the National Debt Matter?*, ST. LOUIS FED. (Jan. 11, 2021), <https://medium.com/st-louis-fed/does-the-national-debt-matter-f99bedc0e14a>. Because of their relative safety and liquidity, the U.S. government can pay less interest than other similar countries. See Krishnamurthy & Vissing-Jorgensen, *supra* note 67, at 234. However, recently the “treasury premium” has decreased as the availability of treasuries has increased drastically. See Wenxin Dua et al., *The U.S. Treasury Premium*, 112 J. INT'L ECON. 167 (2018). Moreover, if at any point investors stop believing that treasuries are liquid and safe, there will be a glut in the market for U.S. government debt, which will cause interest rates to increase.

120. If interest rates were expected to rise, treasury futures would fall in value. This has yet to happen. See *10 Year Treasury Futures – Price & Chart*, MACROTRENDS, <https://www.macrotrends.net/futures/10-year-treasury>.

121. On average, real GDP growth has decreased by 3 basis points per year between 1948 and 2019. See *Real Gross Domestic Product*, FRED ECONOMIC DATA, <https://fred.stlouisfed.org/series/GDPC1#0>.

122. See *Real Gross Domestic Product Per Capita*, FRED ECONOMIC DATA, <https://fred.stlouisfed.org/series/A939RX0Q048SBEA#0>. The growth rate is even lower if measured between 2000 and 2020 because of the pandemic.

123. See Jonathan Vespa, Lauren Medina, and David M. Armstrong, *Demographic Turning Points for the United States: Population Projections for 2020 to 2060*, U.S. CENSUS BUREAU 4 (Mar. 2018), <https://www.census.gov/content/dam/Census/library/publications/2020/demo/p25-1144.pdf>.

124. There are currently 3 old-age dependents for every 10 working age people. This is already high by historical standards, and this ratio is expected to increase to 4 old-age dependents for every 10 working age people within the next few decades. *Id.* at 5.

125. See Auerbach, Gale, & Krupkin, *supra* note 22.

126. See *The Budget and Economic Outlook: 2020 to 2030*, CONG. BUDGET OFF. (Jan. 2020), <https://www.cbo.gov/publication/56020>.

deficit as a percentage of GDP has increased, on average, by five basis points per year; since 2000, it has increased, on average, twenty-four basis points per year.¹²⁷ As noted above, the primary deficit as a percentage of GDP was three times higher in the 2010s than it was in the 1980s.¹²⁸

Right now, a gradual approach to deficit reduction is possible. Slow increases to government revenues could be used to shrink the deficit until it is sustainable. If the government does nothing, gradual increases will eventually be insufficient to address the deficit, and the government will be forced to reduce the deficit abruptly. To highlight the difference between a sudden and a gradual deficit reduction, the graph below plots aggregate after-tax income (GDP less taxes) over time from two simulations.¹²⁹ The relevant simulation parameters, which approximate post-pandemic conditions in the U.S., are recorded in the table below.¹³⁰

Simulation Parameters

<i>Initial debt-to-GDP ratio</i>	<i>1.3</i>
<i>GDP growth rate</i>	<i>4%</i>
<i>Initial interest rate</i>	<i>3%</i>
<i>Non-interest government outlays (% of GDP)</i>	<i>19.75%</i>
<i>Initial primary deficit (% of GDP)</i>	<i>3.3%</i>
<i>Initial tax revenue (% of GDP)</i>	<i>16.15%</i>
<i>Max debt-to-GDP ratio</i>	<i>5</i>

In the gradual simulation, the government slowly increases tax collections starting in 2021 to chip away at the unsustainable primary deficit. In the sudden simulation, the government stays the course until the debt-to-GDP ratio hits five, at which point the government raises taxes

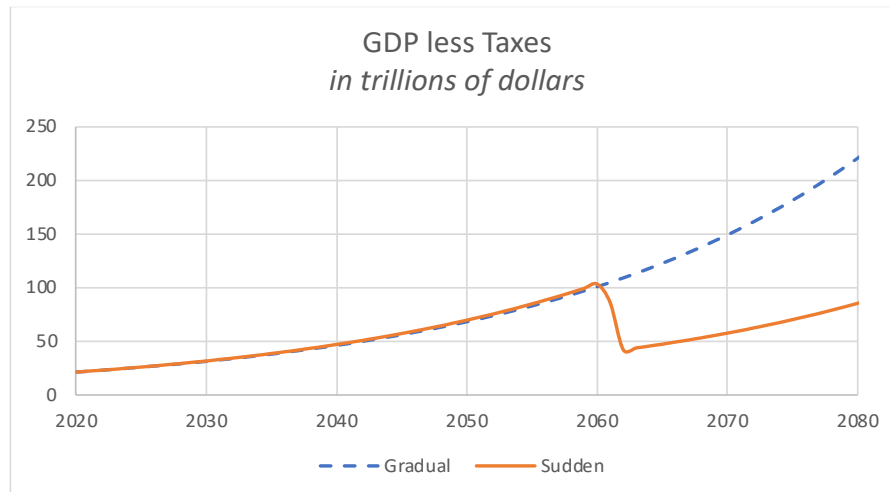
127. See *Historical Tables*, *supra* note 81.

128. This is far above what is sustainable. See Paolo Canofaria et al., *Financial Crisis and Sustainability of US Fiscal Deficit: Indicators or Tests?*, 42 J. POL'Y MODELING 192 (2020). To be clear: the deficit as a share of GDP is unsustainable. The dollar value of the deficit might be sustainable, depending on economic variables, including the GDP growth rate and the government debt interest rate.

129. For analytical simplicity the entire deficit reduction comes from tax increases. This avoids modeling how to assign the benefit of government services to different cohorts of taxpayers.

130. These numbers approximate the current and predicted condition in the U.S. The U.S.'s current debt-to-GDP ratio is roughly 1.3; the U.S. nominal GDP growth has been approximately 4% recently; the nominal interest rate on government debt has been approximately 3% recently; the primary deficit in the 2010s was approximately 3.3% of GDP; the government spends about 19.75% of GDP on non-interest expenditures; and the government collects about 16.15% of GDP in revenue.

to avoid default and hyperinflation.¹³¹



In the sudden simulation, the government runs unsustainable deficits until 2061. In that year, it must substantially increase its tax revenue to avoid economic collapse. In the gradual simulation, the burden of the tax increase is diffuse; in the sudden simulation, the burden of the tax increase is relatively concentrated. Of course, a hybrid gradual/sudden scenario is possible, in which case taxes increase some before the maximum debt-to-GDP ratio is reached but not enough to prevent a substantial increase when the limit is hit.

The sudden simulation understates the costs of the tax increase because (1) there are no behavioral responses to the tax increase, (2) there are no costs to hitting the maximum debt-to-GDP ratio, and (3) the government does not pay off any debt to create fiscal space—it merely continues to borrow as much as it can while not exceeding the economic limit. Thus, in all likelihood, the tax increase would need to be larger than in the simulation, and GDP growth would fall because of the debt crisis.¹³² Moreover, the simulation assumes no future cyclical deficit. A cyclical deficit would decrease the amount of time before the debt reached its economic limit and increase the harm from a sudden tax increase, which would likely coincide with a crisis.

As a final point, the necessity of a sudden deficit reduction is perhaps surprisingly likely for two reasons. First, political pressures tend to pull

131. The economic debt limit of 5 is arbitrary, but it does not matter what number is chosen. A larger number simply means a later debt market collapse, and smaller number simply means an earlier debt market collapse.

132. The sudden simulation overestimates the harm of the tax increase because some of the deficit reduction would likely come from a reduction in spending, including entitlement reform, which might fall on either earlier or later taxpayers.

government spending up and push taxes down, and nothing on the horizon suggests that those tendencies are likely to change.¹³³ There is no plan to manage the deficit, and the political will to even embark on a discussion of what such a plan might entail is noticeably lacking. Second, market crashes tend to happen suddenly and with relatively little warning. If investors start to doubt the U.S. government's ability to repay without printing money, they will demand a higher interest rate, which will increase the government's expenses, which will further increase investors' doubts about the government's ability to repay.¹³⁴ This cycle repeats itself rapidly until the market for government debt collapses.¹³⁵

III. INTERGENERATIONAL CONSEQUENCES

Part II showed that the deficit must eventually be reduced. How the deficit is reduced will have an effect on relative intergenerational outcomes. This Part first discusses the challenges of intergenerational equity and suggests specific criteria to determine whether a government policy has resulted in a violation of intergenerational equity. It then discusses the various challenges in determining the effects of government policy on the intergenerational distribution of economic outcomes. Lastly, this Part offers an example of how an unsustainable deficit could cause a violation of intergenerational equity by resulting in a large and sudden tax increase. This sets the stage for the discussion of the wealth tax remedy in Part IV.

A. Defining Intergenerational Equity

Defining equity in the intergenerational context is not a simple task. There are numerous issues that arise from measuring wellbeing across generations.¹³⁶ To name a few, how should the benefit of government spending be assigned to individuals across generations?¹³⁷ How can the

133. Federal government outlays as a percentage of GDP have increased, on average, 3.6 basis points per year since 1988. See *Federal Net Outlays as Percent of Gross Domestic Product*, FRED ECONOMIC DATA, <https://fred.stlouisfed.org/series/FYONGDA188S>. Federal government revenues as a percentage of GDP have decreased, on average, 5.3 basis points per year since 1988. See *Federal Receipts as Percent of Gross Domestic Product*, FRED ECONOMIC DATA, <https://fred.stlouisfed.org/series/FYFRGDA188S#0>.

134. There is an economic limit to the debt, but it is unknown. Indeed, the economic limit is hit when sufficiently many investors flee the debt market causing it to collapse. If the limit were known, the government could plan to avoid it. Because it is unknown and the government has poorly-aligned incentives and a tendency towards fiscal optimism, the possibility of a crisis is real.

135. See ROMER, *supra* note 26, at 607-12.

136. Buchanan, *What Do We Owe Future Generations*, *supra* note 5, at 1262-65.

137. Thompson, *supra* note 3, at 6, 9. Moreover, there is no reason to focus on the cost and benefits of government action alone. Private actions too have intergenerational consequences that might well

wellbeing of people across generations be compared?¹³⁸ How should the general tendency for each generation to be, on average, wealthier than its predecessors be accounted for?¹³⁹ Moreover, although there is a nearly universal consensus that intergenerational equity is important,¹⁴⁰ there is no consensus at all on what is owed to future generations.¹⁴¹ Suggested answers range from nothing to everything.¹⁴² And beyond the usual challenges raised in the intragenerational context, intergenerational equity engenders a host of metaphysical questions.¹⁴³ It is unsurprising that a wide range of incompatible frameworks have been put forth to evaluate intergenerational equity.¹⁴⁴

change optimal government policy. Michael Doran, *Intergenerational Equity in Fiscal Policy Reform*, 61 TAX L. REV. 241 (2008).

138. Buchanan, *U.S. Fiscal Policy Does Not Cheat Future Generations*, *supra* note 61, at 51-52; Buchanan, *What Do We Owe Future Generations*, *supra* note 5. The standard economics approach applies a discount factor, but even in this tractable framework it's not obvious what the discount factor should be. *Id.* at 1247. This is made even more challenging because those alive today do not know what the preferences of future generations will be. *Id.* at 1245-46 (for example, offering automobile infrastructure that might benefit future generations but only under the assumption that they will have sufficiently high preferences for automobiles).

139. Thompson, *supra* note 3, at 6. Indeed, it may even be possible to be too generous to future generations. Buchanan, *What Do We Owe Future Generations*, *supra* note 5, at 1273.

140. See JOHN RAWLS, A THEORY OF JUSTICE 284 (1971); Buchanan, *What Do We Owe Future Generations*, *supra* note 5, at 1251. There are some philosophical challenges to this consensus. See Terence Ball, *The Incoherence of Intergenerational Justice*, 28 INQUIRY 321-324 (1985) (arguing the concept of intergenerational justice is incoherent because people cannot owe an obligation to an abstract entity). Ball, nonetheless, concludes that there is an obligation to be just. *Id.* at 333. Another challenge stems from the possibility that today's actions not only change the conditions of the future but might also change which people will inhabit that future. If it is preferable to exist, then any action that changes which people comprise future generations must benefit those future generations, meaning that intergenerational equity may be a paradox. See DEREK PARFIT, REASONS AND PERSONS 365-64 (1984). See generally SHAVIRO, *supra* note 48, at 171-72.

141. See Neil H. Buchanan, *Social Security, Generational Justice, and Long-Term Deficits*, 58 TAX L. REV. 275, 322-25 (2005); see generally Thompson, *supra* note 3.

142. Jan Narveson, *Future People and Us*, in OBLIGATIONS TO FUTURE GENERATIONS 38, 38 (Richard I. Sikora & Brian M. Barry eds. 1978) ("What, if anything, do we owe future generations? Answers to this question vary widely. Indeed, they range all the way from Nothing to Everything..."). Thomas Jefferson thought that no generation should bind its predecessors and argued that thus debts should last no longer than 19 years. Letter from Thomas Jefferson to James Madison (September 6 1789) in THE PAPERS OF THOMAS JEFFERSON VOL. 15 27 MARCH 1789 TO 30 NOVEMBER 1789, 392-98 (Princeton Univ. Press, 1958), available at <https://jeffersonpapers.princeton.edu/selected-documents/thomas-jefferson-james-madison>. Edmund Burke viewed intergenerational equity as a partnership between generations that placed moral prohibitions on what generations might do. EDMUND BURKE, SELECT WORKS, VOL. II- REFLECTIONS ON THE REVOLUTION IN FRANCE 114 (E. J. Payne ed., Clarendon Press 1898) (1790). And, while conceding that intergeneration equity placed severe, if not impossible, strains on every ethical theory, John Rawls argued that there is an obligation to set aside capital and maintain institutions for future generations. RAWLS, *supra* note 140, at 284-85. Rawls also argued that, under the veil of ignorance, all generations should be equally obligated to their predecessors, specifically by committing to a savings rate. *Id.* at 287.

143. See SHAVIRO, *supra* note 48, at 168-173.

144. For example, both Thomas Jefferson and Edmund Burke suggested intergenerational equity norms. See *id.* at 164-65. Two common types are "no transfer" norms and "generational balance" norms.

In this Article, I will apply a two-criteria definition to determine whether a government policy results in an intergenerational equity violation. Criterion one: the policy improves outcomes for generation A and worsens outcomes for generation B. Criterion two: after taking into consideration the effect of the policy, generation B is worse off than generation A. If both criteria are met, the policy violates intergenerational equity. Under this definition, government policies that result in intergenerational transfers do not violate intergenerational equity so long as they are transfers from those that are better off to those that are worse off.¹⁴⁵

For concreteness, consider the following example. Assume that generation A was born before generation B. The government borrows funds and transfers the cash to generation A. Then the government raises taxes from generation B to repay the debt. If generation B is worse off than generation A, this policy would violate intergenerational equity. But if, including the transfer, generation B is better off than generation A, this policy would not violate intergenerational equity.

B. The Relative Wellbeing of Different Generations

As shown in Part I, if the government runs an unsustainable deficit for long enough, future taxpayers will bear a fiscal cost. An unsustainable deficit will push up the interest rate on government debt until it exceeds the GDP growth rate. At that point there will be a fiscal cost to the debt because it can no longer be rolled over indefinitely. As long as the government has access to credit markets, the fiscal cost can be deferred. But the more the government borrows, the larger the fiscal cost will

The no transfer norms may be justified by an appeal to the benefit principle and state that no generation should impose burdens on another. What this means in practice is not always obvious. *Id.* at 152-57. The “generational balance” norms state that all generations should be treated equally in some sense. *Id.* at 157-164.

145. Looking only at generations and not the individuals in those generations may result in a perverse outcome. For example, consider a policy that transferred from the poorest members of a young generation to the wealthiest members of an old generation. If on average the older generation were poorer, this might not be an intergenerational equity violation under our definition. And the possibility of such a transfer is not merely an academic possibility. There is at least some evidence that the intergenerational consequences of deficit spending will not be equity enhancing. For example, some, if not most, of the tax cuts of the past several decades have disproportionately benefitted the wealthy. *See* Auerbach, Gale, & Krupkin, *supra* note 22, at 14-15. And many of the programs that are likely to be cut because of the force the debt exerts on the government budget are those that disproportionately benefit the poor. The budgets put forth by President Trump include deep cuts to several programs designed to help low-income households. *See* Richard Kogan et al., *Cuts to Low-Income Assistance Programs in President Trump’s 2020 Budget Are Wide-Ranging*, CENTER ON BUDGET AND POLICY PRIORITIES (May 15, 2019), <https://www.cbpp.org/research/federal-budget/cuts-to-low-income-assistance-programs-in-president-trumps-2020-budget-are>.

eventually be.¹⁴⁶ Sometime before the debt-to-GDP ratio hits its economic limit, some group of taxpayers will start bearing the fiscal cost.¹⁴⁷

But just because a future group of taxpayers bears the cost of an unsustainable deficit, it does not necessarily follow that there has been an intergenerational equity violation for three reasons. First, the above does not account for the benefits of government spending. In particular, if the deficit-spending were on public goods and services that would disproportionately benefit younger and future taxpayers, then both the benefit and burden of the deficit might accrue to those younger and future taxpayers. Second, the above does not account for any behavioral responses. Both lower taxes and higher government debt might change the decisions of taxpayers in ways that could potentially reduce (or increase) the benefit accruing to earlier taxpayers and the burdens falling on later taxpayers. Third, historically, most generations have been better off than their predecessors, meaning that some transfer of wealth from younger to older generations might be consistent with intergenerational equity. I consider each of these below.

1. Accounting for Government Outlays

The benefit of government spending may not accrue concurrently with the expenditure.¹⁴⁸ Consider, for example, a water filtration system that cleans large bodies of water and has a very large upfront cost. Assume this system takes sixty years to clean a body of water, and therefore the current cohort of taxpayers is not likely to get much benefit from it. If the cost of the water filtration system is financed with current taxes, there is an intergenerational transfer from the current cohort to future cohorts. The current generation pays, and a future generation benefits.¹⁴⁹ If, however, the cost of the filtration system is financed with borrowing, and the costs of that debt are borne starting in sixty years, there is no intergenerational

146. Default, in some sense, avoids the fiscal cost but only by imposing its own likely larger costs.

147. An alternative way to view this intergenerational consequence follows from the fact that at higher debt-to-GDP ratios, the government has a reduced capacity to borrow. Earlier generations can finance a substantial portion of government expenditures with borrowing. If these earlier generations run unsustainable deficits, eventually the government must reduce its deficit. Later generations must make up the deficit with higher taxes and lower spending. Future borrowing is an opportunity of cost unsustainable deficits today.

148. See Auerbach, Gale, & Krupkin, *supra* note 22. A complete analysis would examine the distribution of benefits and costs of expenditures, taxes, and the behavioral responses to both in a general equilibrium setting.

149. More generally, spending can benefit past, current, or future taxpaying cohorts, and an intergenerational transfer occurs if the tax burden falls on a cohort different from the one to which the benefit accrues.

transfer, neither to nor from the current generation.¹⁵⁰

There is, however, no evidence that current government expenditures have benefits which accrue disproportionately to future taxpayers. Government spending as a fraction of GDP has remained nearly constant,¹⁵¹ and the fraction of expenditure that would predominantly benefit future cohorts (e.g., education and climate change) has been minuscule.¹⁵² If anything, the budget has trended towards favoring older and past taxpaying cohorts as Social Security and Medicare expenditures have grown, which only exacerbates the intergenerational consequences of the unsustainable deficit.¹⁵³

2. Behavioral Responses

There are several behavioral responses to taxes and government borrowing that might mitigate or augment the intergenerational consequences of an unsustainable deficit. The first possible behavioral response is that earlier generations may opt to leave larger bequests to their descendants if the government borrows more. In other words, earlier generations can undo the intergenerational consequences of deficit spending with actions in the private market. The strongest form of this claim is called Ricardian equivalence. Ricardian equivalence states that the government financing decision is irrelevant because rational actors

150. There may still be transfers between generations starting in sixty years depending on how the debt repayment is allocated. This analysis becomes much more difficult if the benefit of and willingness to pay for non-cash government expenditures spans several generations, which is a particularly vexing problem because there is no way to discover the subjective value that all affected individuals in all affected generations would place on any particular spending program. Consider, as an extreme example, military expenditures made to repel an invading army. If the invasion would result in the complete destruction of the country, then both current and future cohorts would presumably be willing to foot the bill for those expenditures. Though not as stark as the existential crisis of an invasion, a similar logic may apply to healthcare, education, and many other government programs. The beneficiaries of the spending may span several cohorts as may the willingness to pay for those programs. Children, for example, benefit from having parents with higher educational attainment. See Matt Dickson et al., *Early, Late or Never? When Does Parental Education Impact Child Outcomes?* 126 *ECON. J.* 184, 184 (2016).

151. Since 1970, excluding the Great Recession, total U.S. government expenditures ranged from 33.38% of GDP to 39.37% of GDP. This includes state and local expenditures. Spending rose to 43.26% during the Great Recession. See *Data*, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, <https://data.oecd.org/>.

152. In 2017, the U.S. spent \$13.2 billion (less than 0.5% of government expenditures) on programs that touch on climate change, but only 6% of that spending was dedicated to climate change. See U.S. GOV'T ACCOUNTABILITY OFF., GAO-18-223, CLIMATE CHANGE: ANALYSIS OF REPORTED FEDERAL FUNDING 18 (Apr. 2018), <https://www.gao.gov/assets/700/691572.pdf>. In 2019, the U.S. spent \$95 billion (2.14% of government expenditures) on education, training, employment, and social services. See CONG. BUDGET OFF., *supra* note 111, at 2.

153. U.S. expenditures on healthcare, which mostly benefit the elderly, increased from 2.80% of GDP in 1970 to 9.31% of GDP in 2018; U.S. expenditures on social protection, which also mostly benefit the elderly, increased from 5.48% of GDP in 1970 to 7.54% of GDP in 2018. See ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *supra* note 151.

will change their behavior to exactly offset the government's decision.¹⁵⁴ In other words, it does not matter if the government finances its expenditure with bonds or taxes.¹⁵⁵ The overwhelming evidence suggests that Ricardian equivalence does not hold.¹⁵⁶

Other behavioral responses work in the opposite direction. For example, taxpayers may not fully account for the future tax increases likely necessitated by an unsustainable deficit. This is called fiscal illusion.¹⁵⁷ When governments fund expenditures with deficits instead of tax revenue, taxpayers may feel wealthier than they are, causing them to save less than they optimally should.¹⁵⁸

There are, thus, plausible behavioral responses that will both mitigate and counteract the intergenerational consequences of an unsustainable deficit. But, given all the evidence, there is little reason to believe that the large shock to after-tax income described above would be intergenerationally neutral after taking into consideration these behavioral responses.

3. Increasing Prosperity

On average, each generation in the U.S. has been wealthier than its predecessors.¹⁵⁹ Even assuming that all future generations will continue to be wealthier, if the government raised taxes substantially and abruptly out of a necessity to reduce the deficit, lifetime after-tax income could be lower for generations earning income after the tax increase when compared to generations earning income before the tax increase.¹⁶⁰ In

154. See ROMER, *supra* note 26, at 571-72.

155. The strong assumptions that are required for Ricardian equivalence include (1) taxes have no substitution effect and (2) households are perfectly rational. See ROMER, *supra* note 26, at 571-72. The most famous proponent of Ricardian equivalence is economist Robert Barro. Economist David Ricardo, for whom the theory is named, was not an adherent. See also SHAVIRO, *supra* note 48, at 66-70.

156. See ROMER, *supra* note 26, at 567-69. See also SHAVIRO, *supra* note 48, at 71-78. Plausible empirical estimates, however, suggest that household actions might offset a fraction of the intergenerational consequences of government deficit spending. See ROMER, *supra* note 26, at 604.

157. See SHAVIRO, *supra* note 48, at 30.

158. A related concept is crowding out. The larger the size of the government the smaller the size of the private market. In this sense the public sector can "crowd out" the private one. MANKIW, *supra* note 48. Even if the government borrows to finance a tax cut (which would have a net zero impact on cash flows withdrawn from the private market) more government borrowing likely reduces private investment because lower tax rates increase the incentive to consume, also depressing investment. See ROMER, *supra* note 26, at 568-69. The effect will vary depending on whether the tax rates lowered impact capital or labor income, and there may be a short-run crowd-in effect. But in the long run, higher government debt decreases private investment. See Nora Traum & Shu-Chun S. Yang, *When Does Government Debt Crowd Out Investment?*, 30 J. APPLIED ECONOMETRICS 24 (2015).

159. See WORLD BANK, GDP PER CAPITA, <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>.

160. The same would not apply to a gradual increase in taxes. Buchanan, *What Do We Owe Future Generations*, *supra* note 5, at 1284.

other words, a sufficiently large tax increase would negate the benefit of rising income for at least some taxpayers.

In sum, neither the benefits of government expenditure nor the possible behavioral responses to the deficit can justify current deficit levels under our intergenerational equity definition. Nonetheless, so long as the government can reduce the deficit to a sustainable level with gradual tax increases that do not make younger generations worse off than older generations, there will be no violation of intergenerational equity. At current debt levels, it is likely that the government could decrease the deficit in a manner consistent with intergenerational equity. As the debt grows, however, the likelihood that the government will be able to decrease the deficit to a sustainable level without violating intergenerational equity will fall. While it is all but impossible to predict how long the government has, if the government defers action long enough, there will be intergenerational inequity.

C. An Example of an Intergenerational Equity Violation

If the government does not address the unsustainable deficit, there are many possible consequences that will affect the intergenerational distribution of economic outcomes. These possible consequences include tax increases, spending cuts, decreased private investment, and a debt crisis. Any of these outcomes could result in a violation of intergenerational equity. Here, I focus on the analytically simplest case: a large and sudden tax increase necessitated by an unsustainable deficit.¹⁶¹ The example below demonstrates a baseline case that could easily be made to accommodate additional complications and alternative assumptions.

Consider two taxpayers, Old and Young, who are identical except that Young was born a generation after Old.¹⁶² Both of these taxpayers work for forty years, then retire. The working years of Young are contemporaneous with the retirement years of Old—we will call Old's working years "Period 1," Young's working years and Old's retirement years "Period 2," and Young's retirement years "Period 3." Old earns \$4,000,000 in wage income, saves \$1,000,000 for retirement, and during her retirement earns \$1,500,000 in investment income. Young earns \$4,600,000 in wage income, saves \$1,150,000 for retirement, and during

161. This avoids, among other things, the challenges of assigning the costs and benefits of government expenditure and the costs of economic crises to different generations.

162. This example does not account for behavioral responses to taxation or the intergenerational benefits of government spending.

his retirement earns \$1,725,000 in investment income.¹⁶³

During the working years of Old, the government runs unsustainable primary deficits. Just as Old retires, the government substantially reduces the rate at which it borrows. It raises taxes by 100% to make up the shortfall in funds.¹⁶⁴ Assume that before the increase the effective tax rate on wage income was 30%, and the effective tax rate on investment income was 10%. After the tax increase, the effective tax rate on wages increases to 60%, and the effective tax rate on investment income increases to 20%. The table below shows the incomes and tax burdens for both taxpayers in all three periods.

<i>Income and Tax Burden (in thousands of dollars)</i>				
	<i>Period 1</i>	<i>Period 2</i>	<i>Period 3</i>	<i>Lifetime</i>
<i>Old income</i>	\$4,000	\$1,500	-	\$5,500
<i>Old tax burden</i>	\$1,200	\$300	-	\$1,500
<i>Young income</i>	-	\$4,600	\$1,725	\$6,325
<i>Young tax burden</i>	-	\$2,760	\$345	\$3,105

Old's tax burden is lower because the government financed expenditures by deficit spending during Old's working years. The deficit spending that benefitted Old resulted in a substantially higher tax burden to Young.¹⁶⁵ The tax is sufficiently large to make Old better off than Young. Old's lifetime after-tax income is \$4,000,000, and Young's after-tax income is \$3,220,000. Despite the fact that Young's pretax income was 15% higher, Young's after-tax income was 20% lower than Old's. Under our definition, this is a violation of intergenerational equity.

While it is analytically convenient to divide time into deficit and post-deficit eras and partition taxpayers into deficit and post-deficit cohorts, some people's working years will straddle the tax increase. In our example, there might be Middle whose working years overlap with the

163. Young's income and savings are 15% higher to reflect the fact that real income has increased over time. As a simplification, neither Old nor Young earn investment income while working. This assumption does not negate the essential point of the example.

164. The amount of the tax increase would depend on the severity of the crisis. Even larger tax increases are plausible.

165. It would be much harder to say what the distributional impacts would be if the government reduced the deficit using substantial spending cuts.

working years of both Old and Young. Middle would bear a lower tax burden during the deficit-spending era and bear a higher burden during the post-deficit era. Middle's aggregate burden would, therefore, be somewhere in between Old's and Young's—the closer in age Middle were to Old, the more similar their situations would be.¹⁶⁶

IV. THE ONE-TIME WEALTH TAX SOLUTION

Part II demonstrated that the current U.S. government deficit level is unsustainable. Part III demonstrated that this unsustainable deficit will have intergenerational consequences. From an intergenerational equity perspective, the optimal policy would be to gradually eliminate the deficit using primarily tax increases starting after the pandemic ends. Under the assumption that the U.S. stays its course and does not gradually eliminate the deficit, this Part searches for a policy that would counteract the intergenerational consequences of the unsustainable deficit if a substantial tax increase must be levied. As it turns out, a one-time wealth tax is a promising option. This Part also discusses some of the challenges of taxing wealth and compares a one-time wealth tax to other wealth tax proposals that are circulating.

A. Taxing the Beneficiaries of the Deficit-Spending Era

To see how a one-time wealth tax would counteract the intergenerational consequences of an unsustainable deficit, return to our Old and Young example from Part III. Recall that Old's working years coincided with the deficit-spending era, meaning that Old had a substantially lower tax burden than Young because, right as Old retired, the government raised taxes.

An income tax cannot undo the intergenerational consequences of the deficit because, going forward, Young will earn more income than Old.¹⁶⁷

166. Taxpayers older than Old would have already consumed some of their wealth and would thus avoid some of the wealth tax burden. If the era of unsustainable deficits lasted long enough, many of the benefitting taxpayers would already have died. Some of their wealth, however, may be held by their heirs. In all likelihood, the unsustainable deficits would have increased the wealth of these heirs, meaning that a one-time wealth tax would counteract the benefit the heirs derived from those deficits.

167. Old's income will, however, be investment income, and Young's income will be largely labor income. Thus, an increased tax on investment income could extract more revenue from Old. There are several related reasons why this option is inferior to the wealth tax discussed below. First, the wealth tax would be much more economically efficient. A one-time wealth tax is not distortionary; an ongoing investment income tax would be distortionary. Second, Young will still have some investment income, meaning that an investment income tax will also raise Young's tax burden. This could be effectively undone by lowering Young's labor income burden, but would require even higher and thus more distortionary rates. Third, the investment income tax would have to sunset before Young retired or else Young would still have a larger lifetime tax burden than Old. This means that there would be complicated

However, as Period 2 starts, there is one potential tax base which is much larger for Old than Young—wealth. Because Old set aside income as she worked, she now has \$1,000,000 in savings. Young, on the other hand, has just started work and therefore has no savings. An ongoing wealth tax would eventually place a burden on Young, but a one-time wealth tax would raise revenue without placing a burden on Young, thereby counteracting the intergenerational equity violation of the unsustainable deficit.¹⁶⁸

A one-time wealth tax would also raise revenue from Middle. The revenue raised by a one-time wealth tax from Middle would be less than the amount raised from Old because Middle would have less wealth when the tax was levied. If there were several Middles with ages spanning the range between Old's and Young's, the one-time wealth tax would raise more revenue from those closer to Old's age and less from those closer to Young's. And since the Middles closer in age to Old would have benefitted more from the government's deficit spending, the burden of the wealth tax on each taxpayer would be proportional to the benefit she received from the deficit spending. This example corresponds nicely to the data: for most people, the age-profile of wealth is hump-shaped with peak wealth at retirement, increasing wealth before retirement as income-earners save and decreasing wealth after retirement as retirees consume down their wealth.¹⁶⁹

While a one-time wealth tax would counteract the intergenerational consequences of unsustainable deficit spending, it would be rough justice. Returning to our example, imagine two Olds identical in every way (including income) except that one consumed more and the other saved more. Both experienced the benefit of deficit spending, but the Old with more savings would have a higher wealth tax bill.

A more complicated version of this issue arises when the era of unsustainable deficits is long, meaning that many of the beneficiaries of the deficit spending era have already died at the time of the wealth tax. If these deceased beneficiaries used their lower tax burden solely to increase their consumption, the efficacy of a wealth tax as an instrument of

timing issues, made all the more difficult if there were millions of taxpayers all with somewhat different circumstances.

168. The distributional impact of a one-time wealth tax has often been studied as an implicit one-time wealth tax when a new consumption tax is levied. See Jane G. Gravelle, *The Distributional Effects of Fundamental Tax Revisions*, 33 SAN DIEGO L. REV. 1419, 1421 (1996); John W. Diamond & George Zodrow, *Consumption Tax Reform: Changes in Business Equity and Housing Prices* in FUNDAMENTAL TAX REFORM: ISSUES, CHOICES, AND IMPLICATIONS 227, 227-28 (2008); Alan Auerbach, *The Choice Between Income and Consumption Taxes: A Primer* in INSTITUTIONAL FOUNDATIONS OF PUBLIC FINANCE 13, 32-34 (2008).

169. James B. Davies & Anthony E. Shorrocks, *The Distribution of Wealth in* 1 HANDBOOK OF INCOME DISTRIBUTION 605, 615, 645 (A. B. Atkinson & F Bourguignon eds. 1999).

intergenerational equity is reduced—the beneficiaries of the deficit spending have gone beyond the reach of the wealth tax. If, however, these deceased beneficiaries passed at least some of the benefit on to their heirs who retain it as wealth, then the one-time wealth tax will still be able to counteract the intergenerational consequences of the deficit. Consider, for example, a Young who inherited substantial wealth. He also benefited from the unsustainable deficit because the low tax rates allowed the wealth that he inherited to grow more than it would have had the government run a sustainable deficit. A wealth tax counteracts this Young's benefit from the unsustainable deficit.

To be clear, a one-time wealth tax likely cannot solve the unsustainable deficit problem because it will raise less revenue than the present value of all future deficits, assuming no other tax changes.¹⁷⁰ An ongoing tax increase will be necessary to make the government's finances sustainable. The one-time wealth tax simply raises some revenue from those who most benefited from the deficit-spending era and thus limits the intergenerational impact of the unsustainable deficit.

As with all of its revenue, the government should allocate the receipts from the one-time wealth tax to whatever expenditures most improve its citizens' wellbeing.¹⁷¹ If the government is at or near the economic limit of its debt, some of the wealth tax revenue should be used to pay off government debt. This will create fiscal space for the government, and it may decrease the required size of the ongoing tax increase or at the very least allow the ongoing tax increase to be implemented more gradually.¹⁷² Beyond that, the proceeds of the wealth tax might be used for large one-time projects, set aside to support ongoing government expenditures, or distributed to citizens, evenly or progressively.¹⁷³

To perfectly undo the intergenerational consequences of an unsustainable deficit, a tax regime would have to collect from each person what she would have paid in taxes in the counterfactual universe in which the government had run only sustainable deficits. Even if this were possible, it would only undo the transfer; it would not undo all the behavioral responses to the transfer, and it would not even begin to

170. A sufficiently large wealth tax may be possible (in the sense that there exists enough wealth) but is well beyond the political limits of what could be collected. Moreover, the incentives to deficit spend would change once the government had raised such a large fund.

171. Suggesting an estimate for the correct size of the wealth tax is difficult. The chief challenge, although certainly not the only one, would be forecasting when the substantial future tax increase would take place.

172. If the wealth tax raises sufficient revenue to reduce the government debt to the point at which the interest rate on the debt is below the GDP growth rate, then (assuming deficits remained small), the government's fiscal space would increase as the debt-to-GDP ratio eroded over time.

173. A wealth tax followed by a lumpsum rebate would still counteract the intergenerational consequences of the unsustainable deficit by taxing those who most benefitted from the deficit spending but distributing proceeds to everyone.

contemplate all the issues raised by who benefits from government expenditures. A time machine, it would seem, presents the only certain way to perfectly undo the intergenerational consequences. Nonetheless, after an era of unsustainable deficits, a one-time wealth tax would counteract the intergenerational consequences of an unsustainable deficit. It is the best available option to restore intergenerational equity if a prolonged unsustainable deficit were to violate intergenerational equity.

B. Wealth Tax Policy Considerations

The previous Section showed that a one-time wealth tax would undo at least some of the intergenerational inequity of an unsustainable deficit. That alone does not make it good policy. This Section addresses the broader question of whether a one-time wealth tax would be a sound proposal. It does so by applying the standard tax policy framework of administrability, efficiency, and fairness to assess the strengths and weaknesses of an intergenerational equity enhancing wealth tax.¹⁷⁴ It then briefly compares the intergenerational equity enhancing wealth tax suggested in this Article to the wealth taxes proposed by Senators Sanders and Warren.

1. Administrability

The greatest challenge with a wealth tax of any variety is administration, which gives rise to four problems. First, while some assets, notably cash and exchange-traded securities, have easily ascertainable values, many assets, including art and other collectables, are difficult to value. Thus, determining a taxpayer's wealth and her resulting tax liability will generally pose considerable challenges.¹⁷⁵ Second, asset holders may not have cash on hand to pay the tax.¹⁷⁶ One possible solution is to offer taxpayers a payment plan, but a wealthy

174. Administrability, efficiency, and fairness are all good things—more of each is better than less. If a policymaker can, for example, find a way to increase the efficiency of a tax regime without lessening the fairness or the administrability of the regime, that policymaker should do so. Policymaking becomes more difficult when at the policy frontier, in which case making an improvement in any of the three criteria would require a retrogression of one or both of the others. See SLEMROD & BAKIJA, *supra* note 49, at 415.. There is also some debate over whether a wealth tax would be constitutional under the United States' Constitution. See, e.g., Erik Jensen, *Is a Tax on Wealth Constitutional?*, 36 J. TAX'N INVESTMENTS 79 (2019); Dawn Johnsen & Walter Dellinger, *The Constitutionality of a National Wealth Tax*, 93 INDIANA L. J. 111 (2018). I take no position on the constitutionality issue here.

175. See Scheuer & Slemrod, *supra* note 1, at 209. The challenge becomes even greater for ongoing wealth taxes because taxpayers will have an incentive to move their wealth into assets that are difficult to value. See *id.* at 221. An innovative solution to this problem would allow the government to purchase any asset at a small premium over the valuation proposed by the taxpayer. See *id.* at 222.

176. *Id.* at 209.

taxpayer who holds little cash must, eventually, sell some of her assets to settle her tax liability. A third problem is tax sheltering.¹⁷⁷ Wealth taxes fall, unsurprisingly, predominantly on the wealthy. Typically, wealthy taxpayers are best able to afford the costs of tax sheltering—they can pay for the transaction costs of sheltering their wealth and a legal defense should they require it.¹⁷⁸ Fourth, the administrative apparatus required to implement a wealth tax does not already exist and would have to be installed.¹⁷⁹ These drawbacks should not be disregarded, but they have not precluded other countries from enacting wealth taxes in the past that have successfully raised revenue.¹⁸⁰

A possible solution to these administrative issues for a one-time wealth tax (but not an ongoing one) would be to implement an ongoing consumption tax, which would implicitly levy a one-time wealth tax. Any time a new consumption tax is introduced or an existing consumption tax rate is increased, there is an implicit one-time wealth tax because a tax on consumption decreases the value of wealth as it lowers the buying power of wealth.¹⁸¹ It is well understood that the one-time wealth tax implicitly levied by a consumption tax falls on wealthier and older taxpayers, ensuring intergenerational equity benefits similar to an actual one-time wealth tax.¹⁸² This consumption tax could be designed to be highly progressive and address the administrative problems inherent in a wealth tax because a consumption tax is levied on market transactions.¹⁸³ Market

177. *Id.* at 221-22.

178. In a randomized control trial, when taxpayers were told that their tax returns would be scrutinized, low- and middle-income taxpayers reported more income, but high-income taxpayers reported less income. See Joel Slemrod et al., *Taxpayer Response to an Increased Probability of Audit: Evidence from a Controlled Experiment in Minnesota*, 79 J. PUB. ECON. 455 (2001). A possible explanation for this result is that high-income taxpayers may see filing returns as an opening offer in a negotiation with the tax authority.

179. See Scheuer & Slemrod, *supra* note 1, at 222-23.

180. See *id.* at 210-214.

181. The implicit one-time wealth tax is the present value of the tax on future consumption derived from current wealth. Louis Kaplow, *Capital Levies and Transition to a Consumption Tax* in INSTITUTIONAL FOUNDATIONS OF PUBLIC FINANCE 112 (2008). Some prominent economists believe that most of the benefit of a consumption tax is the implicit capital levy. Alan J. Auerbach, Laurence J. Kotlikoff & Jonathan Skinner, *The Efficiency Gains from Dynamic Tax Reform*, 24 INT'L ECON. REV. 81, 81 (1983); ALAN J. AUERBACH & LAURENCE J. KOTLIKOFF, DYNAMIC FISCAL POLICY, 4, 79 (1987).

182. See Jane G. Gravelle, *The Distributional Effects of Fundamental Tax Revisions*, 33 SAN DIEGO L. REV. 1419 (1996); Diamond & Zodrow, *supra* note 168, at 227-28; Auerbach, *supra* note 168 at 32-34.

183. As the famous tax scholar William Andrews said, “[t]here is some tendency to think that a consumption-type tax would be more regressive or less progressive than an accretion-type tax because consumption is a declining fraction of income as income increases. In part that notion reflects a habit of thought about general sales taxes; but a consumption-type personal income tax is a personal tax with graduated rates and personal exemptions that can be adjusted to whatever levels are thought to be appropriate.” William D. Andrews, *A Consumption-Type or Cash Flow Personal Income Tax*, 87 HARV. L. REV. 1113, 1174 (1974).

transactions supply valuations and often cash to pay the tax.¹⁸⁴ It also makes tax sheltering somewhat more difficult.¹⁸⁵

2. Efficiency

The most substantial advantage of a one-time wealth tax over an ongoing wealth tax is its efficiency. Ongoing wealth taxes reduce the incentive to hold wealth because the more wealth a person holds, the higher that person's tax burden is.¹⁸⁶ Empirical studies have often found substantial behavioral responses to ongoing wealth taxes.¹⁸⁷ If a wealth tax reduced the incentive to save, it would decrease investment, which in turn would lower wages and decrease the rate of economic growth.¹⁸⁸ Therefore, ongoing wealth taxes may have substantial economic efficiency costs.

One-time wealth taxes, on the other hand, are remarkably efficient taxes.¹⁸⁹ The key difference is that one-time wealth taxes do not change the incentive to hold wealth much if at all.¹⁹⁰ If a taxpayer has little notice of a one-time wealth tax, she cannot respond to it by liquidating investments, changing her portfolio of assets, or hiding her wealth.¹⁹¹ But if she faces an ongoing wealth tax, she is likely to respond to the tax eventually even if not in its first year. Thus, efficiency weighs heavily in

184. *Id.* at 1141, 1145.

185. *Id.*

186. See Huaqun Li & Karl Smith, *Analysis of Sen. Warren and Sen. Sanders' Wealth Tax Plans*, 691 TAX FOUNDATION FISCAL FACT (Jan. 2020), <https://files.taxfoundation.org/20200127123048/Analysis-of-Sen.-Warren-and-Sen.-Sanders%E2%80%99-Wealth-Tax-Plans.pdf>.

187. In some cases, these behavioral responses had real consequences—the wealth tax decreased total wealth. In other cases, the behavioral response was attributed mostly to activity that resulted in less reporting of wealth but not lower real wealth balances. See Scheuer & Slemrod, *supra* note 1, at 219. If the responses are real and total wealth decreases, a wealth tax would have a detrimental impact on the economy. See Huaqun Li & Karl Smith, *Analysis of Sen. Warren and Sen. Sanders' Wealth Tax Plans*, 691 TAX FOUNDATION FISCAL FACT (Jan. 2020), <https://files.taxfoundation.org/20200127123048/Analysis-of-Sen.-Warren-and-Sen.-Sanders%E2%80%99-Wealth-Tax-Plans.pdf>.

188. See Scheuer & Slemrod, *supra* note 1, at 219-20. Wealth taxes may also have a detrimental effect on entrepreneurial risk-taking and induce wealth taxpayers to renounce their citizenship and shift wealth abroad. *Id.*

189. See *id.* at 224.

190. *Id.*

191. The efficiency of a one-time capital levy and an ongoing wealth tax are very different because taxes induce behavioral responses when they are anticipated. In particular, anticipation of future capital levies will discourage income production and saving. See Barry Eichengreen, *The Capital Levy in Theory and Practice*, (Nat'l Bureau of Econ. Research, Working Paper No. 3096, 1989), available at <https://www.nber.org/papers/w3096> and Kaplow, *supra* note 181, at 114-15. The less taxpayers are able to anticipate a tax, the more efficient the tax will be. If taxpayers are able to adjust their wealth holdings before the tax, it will be less efficient. As a general rule, retroactive taxes are efficient if they can avoid anticipation and repetition issues. See Saul Levmore, *The Case for Retroactive Taxation*, 22 J. LEGAL STUD. 265 (1993).

favor of a one-time wealth tax compared to ongoing wealth taxes and, for similar reasons, compared to ongoing income and consumption taxes.

3. Fairness

The greatest fairness advantage that a one-time wealth tax has, as this Article argues, is that it can restore intergenerational equity. However, it may be the case that, although the intergenerational consequences caused by an unsustainable deficit are unfair, there is a countervailing fairness norm precluding the correction of that unfairness. The cohorts that have benefitted from the unsustainable deficit may now have a reliance interest in their wealth.¹⁹² No one knows what future tax law will be, and few seem to be making decisions anticipating a future law that will counteract the deficit-spending intergenerational transfer. If this is the case, a large one-time wealth tax could be a harmful shock, particularly for those who are older and have less flexibility when it comes to financial planning.¹⁹³ But this is not an especially difficult harm to remedy. An exemption or, more generally, a progressive tax rate structure would be the best path between these two fairness concerns. Progressivity would ensure that the wealth tax and tax increase would place a relatively small burden on those who have the least.¹⁹⁴

As a final point, there are two important differences between a wealth tax designed to counteract the intergenerational consequences of an unsustainable deficit and those proposed by Sanders and Warren. Both of these differences arise because, for a wealth tax to counteract intergenerational inequity, its burden must correspond to the intergenerational consequences of unsustainable deficit spending. First, as discussed above, an intergenerational equity enhancing wealth tax must be one-time and not ongoing, unlike the Senators' proposals.¹⁹⁵ This

192. See DANIEL SHAVIRO, *WHEN RULES CHANGE 2* (2000); Michael J. Graetz, *Legal Transitions: The Case of Retroactivity in Income Tax Revision*, 126 U. PA. L. REV. 47, 74-79 (1977). More generally, beyond reliance interests, there are horizontal equity, vertical equity, and contractarian notions that might impact the analysis. See *Id.* Political economy considerations may also come into play. See J. Mark Ramseyer & Minoru Nakazato, *Tax Transitions and the Protection Racket: A Reply to Professors Graetz and Kaplow*, 75 VA. L. REV. 1155, 1162 (1989); see also DANIEL SHAVIRO, *WHEN RULES CHANGE* (2000); Kyle D. Logue, *Tax Transitions, Opportunistic Retroactivity, and the Benefits of Government Precommitment*, 94 MICH. L. REV. 1129 (1996).

193. The burden of an adverse financial shock can be spread over many more years by the young than the old because, simply put, the old have fewer years over which to smooth costs.

194. Outside of the tax system, increased Social Security payments would also prevent impoverishing the elderly. Increasing minimum Social Security payments and expanding eligibility would help ensure that the wealth tax would not leave any taxpayer without the means to consume necessities.

195. That is at least the case for the specific examples discussed here. In a more complicated model, in which there were heterogeneous path-dependencies for the accumulation of wealth, an ongoing wealth tax might be able to counter intergenerational inequity. There is no obvious evidence that the necessary path-dependencies exist.

ensures that the burden falls predominantly on the cohorts that benefitted from the unsustainable deficits. Second, it requires both a broader base than Sanders and Warren propose and also likely much higher rates to raise sufficient revenue to mitigate the intergenerational consequences of deficit spending.¹⁹⁶

CONCLUSION

Long-term intergenerational equity is very difficult to achieve. As far as the government budget is concerned, so long as there is fiscal space, there exists an incentive to deficit spend—politicians have an incentive to keep taxes low and keep spending high. Beyond a certain point, as the government uses up fiscal space, it generates costs that will be passed on to future taxpayers. In short, the interests of various cohorts of taxpayers do not align. There is no perfect solution to this incentive problem, but this Article proposes a novel wealth tax counteraction to an era of unsustainable deficit. And while the analysis here focuses on the intergenerational consequences of an unsustainable deficit, it would apply equally well to other contexts with misaligned intergenerational incentives, including, for example, climate change. Indeed, a one-time wealth tax has important intergenerational equity potential that should be further studied.

196. The details of Senator Sanders' plan may be found here: *Tax on Extreme Wealth*, BERNIE SANDERS OFFICIAL WEBSITE, <https://berniesanders.com/issues/tax-extreme-wealth/> (last visited Feb. 20, 2021). The details of Senator Warren's may be found here: *Ultra-Millionaire Tax*, WARREN DEMOCRATS, <https://elizabethwarren.com/plans/ultra-millionaire-tax> (last visited Feb. 20, 2021). Sanders and Warren's wealth taxes would raise revenue only from those with wealth exceeding \$32 million and \$50 million, respectively. A wealth tax designed to restore intergenerational equity might still have a substantial exemption—for example, applying only to taxpayers with wealth above \$2 million—but it would need to apply to substantially more taxpayers for two reasons. First, there are several taxpayers who benefited from deficit spending and have less than \$32 million in wealth. Second, to counteract the intergenerational consequences of deficit spending, the wealth tax would need to raise trillions of dollars, which would require a larger rate and base than the Senators' proposals. Any comparison between a one-time and an ongoing wealth tax must contend with the difficulties of comparing a lumpsum payment and a stream of future cashflows. Present value is clearly the correct tool to apply, but its application requires assumptions about the correct discount rate, among other things. The Sanders and Warren proposals are estimated to raise \$2.6 trillion and \$2.2 trillion over ten years, respectively. See Li & Smith, *supra* note 186. Assuming a discount rate of 5%, the present value of a wealth tax that raised \$240 billion per year would be \$4.8 trillion. A wealth tax designed to counteract the intergenerational consequences of the unsustainable deficit would likely have to be larger.