



A Pro-Growth Fiscal Consolidation Plan for the United States

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The fiscal response to the Coronavirus pandemic has increased federal government outlays as a share of GDP from about 20 percent to over 30 percent in 2020. Projections now suggest that outlays will decline temporarily to around 21 percent in the next few years, but then continue to rise toward 30 percent in the next several decades. In this paper we consider an illustrative fiscal consolidation proposal that restrains the growth in federal spending. The policy is to hold federal expenditures as a share of GDP at about the 20 percent ratio that prevailed before the pandemic hit. We estimate the policy's impact using a structural macroeconomic model with price and wage rigidities and adjustment costs. The spending restraint avoids a potentially large increase in future federal taxes and prevents the outstanding debt relative to GDP from rising from its current level. The simulations show that the consolidation plan boosts short-run annual GDP growth by as much as 10 percent and increases long-run annual GDP growth by about 7 percent.

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As a consequence of the coronavirus pandemic, federal government budget deficits have risen substantially, increasing the need for a fiscal consolidation strategy to reduce these deficits and prevent the outstanding federal debt from rising. The increase in the budget deficit resulted partly from greater spending and transfers and partly from lower tax receipts during the pandemic. Such spending increases are worrisome because they ultimately require raising tax rates beyond pre-pandemic levels after the economy recovers. Higher taxes then dampen the economy's trend long-term growth.

The purpose of this paper is to evaluate the impact of a fiscal consolidation plan on the U.S. economy's growth. The size and sign of the effect of consolidation plans are widely debated. We use a structural macroeconomic model to make our assessment. Such a model is needed to clarify the impact of changes in government spending and tax cuts. For example, a reduction in future government spending allows for a decrease in tax rates which may increase employment and GDP; if that decrease in taxes is anticipated, then GDP will increase in the short run.

The paper is organized as follows. First, we present the budget baseline which is an updated and modified version of the most recent budget baseline from the Congressional Budget Office (CBO). The updated baseline incorporates the fiscal impact of recent coronavirus-related legislation and the economic downturn. Over the long-term, baseline expenditures grow in line with CBO's most recent forecast while baseline revenues assume that half of the growth in baseline expenditures will be financed by higher taxes. Second, we present an alternative policy—an illustrative fiscal consolidation strategy—which reduces the deficit by restraining the growth in entitlement program spending while keeping taxes from rising from current levels. Third, we describe the structural macroeconomic model we use to estimate the impact of this alternative policy; it is an updated version of a model used by Cogan et al. (2013), calibrated to U.S. data, in which people are forward looking, but are also constrained by costs of adjustment and other rigidities. Fourth, we use the model to estimate the impact of our illustrative consolidation plan on real GDP and its major components. An important result is that real GDP and employment rise in both the short run and in the long run with this fiscal consolidation policy compared with the policy of no consolidation and higher taxes. We discuss the broad intuition and robustness of this result.

1. The Budget Baseline

The federal government spending, revenues, and debt baselines used for our analysis are derived from most recent Congressional Budget Office (CBO) projections. The agency's latest 10-year projections were developed prior to the onset of the coronavirus in the U.S. and do not include its economic and fiscal impacts. Our baseline uses the March CBO projections as a starting point. It updates these projections by incorporating the fiscal impacts of congressional coronavirus legislative actions and automatic stabilizers that have operated since the U.S. economy has fallen into recession. Additionally, in a departure from CBO, our baseline assumes that a portion of the higher federal spending will be partially financed by higher taxes as well as by increased borrowing.

As of this writing, Congress has enacted three separate major legislative bills to offset the adverse economic impact of the coronavirus: The Families First Act, the Paycheck Protection Program, and the CARES Act.¹ Among other significant provisions, these laws authorized expanded unemployment insurance and Medicaid benefits, granted a \$1,200 tax credit for each adult in the U.S., deferred tax payments, and established new business loan programs to temporarily support payroll and other business expenses. While not all of the provisions of these laws have an impact on the NIPA measure of GDP, it is important to understand their full fiscal impact.²

According to CBO's preliminary estimates, these laws will increase the federal budget deficit by \$2.4 trillion over the next 10 years. The lion's share of this fiscal impact, about 90 percent, is projected to occur in the current fiscal year, 2020.

The three coronavirus response laws affect the deficit primarily by increasing federal spending. Of the total \$2.4 trillion deficit impact, \$1.9 trillion is through higher federal spending. This additional spending increases 2020 outlays by \$1.5 trillion, 7.4 percent of

¹ The laws are "The Families First Coronavirus Response Act" (P.L.116-127) <https://www.cbo.gov/system/files/2020-04/HR6201.pdf>. The "Paycheck Protection Program and Health Care Enhancement Act" (P.L.116-136) <https://www.cbo.gov/system/files/2020-04/hr266.pdf>. The "Coronavirus Aid, Relief, and Economic Security Act" (P.L.116-139) <https://www.cbo.gov/system/files/2020-04/hr748.pdf>. Congress also passed a 4th bill, the "Coronavirus Preparedness and Response Supplemental Appropriations Act" (P.L.116-173) which increased outlays by \$8 billion from 2020-2030.

² Currently, there is a disconnect between the budgetary and NIPA treatment of these loans which warrants some discussion. Under federal budget accounting rules, only the subsidy value of loans and loan guarantees are normally treated as outlays. As such, loan program outlays represent a transfer from the government to loan recipients and, therefore, have no impact on NIPA calculations of GDP. In enacting the new loan programs, Congress' intention is that these loans will ultimately be forgiven as recipients are expected to comply with the loan requirements. If loans are designed to be forgiven, the full value of the loan would be treated under NIPA as a transfer. It increases proprietor's income and, by increasing government expenditures, it reduces government savings. The transfer would have no impact of GDP. Also, under these circumstances, federal government accounting rules would require the full amount of the loan to be treated as an outlay since that amount is the subsidy value. Presently the CBO scoring of the new business loan programs records only the value of these loans.

GDP. Thereafter, the added spending declines rapidly to \$290 billion, or 1.3 percent of GDP, in 2021, and to 0.3 percent in 2022. Most of the coronavirus response spending consists of higher transfer payments for unemployment insurance, refundable tax rebates, and outlays under the new business loan programs.

Automatic stabilizers for unemployment insurance, Medicaid and other countercyclical programs add another layer of spending. To estimate these amounts, we applied CBO’s historical estimates of the relationship between the output gap and federal program spending to our estimates of the size of the output gap.³ The automatic stabilizers add about \$150 billion per year, slightly less than 1 percent of GDP for each of the next three years.

Figure 1. Baseline budget projections with higher taxes

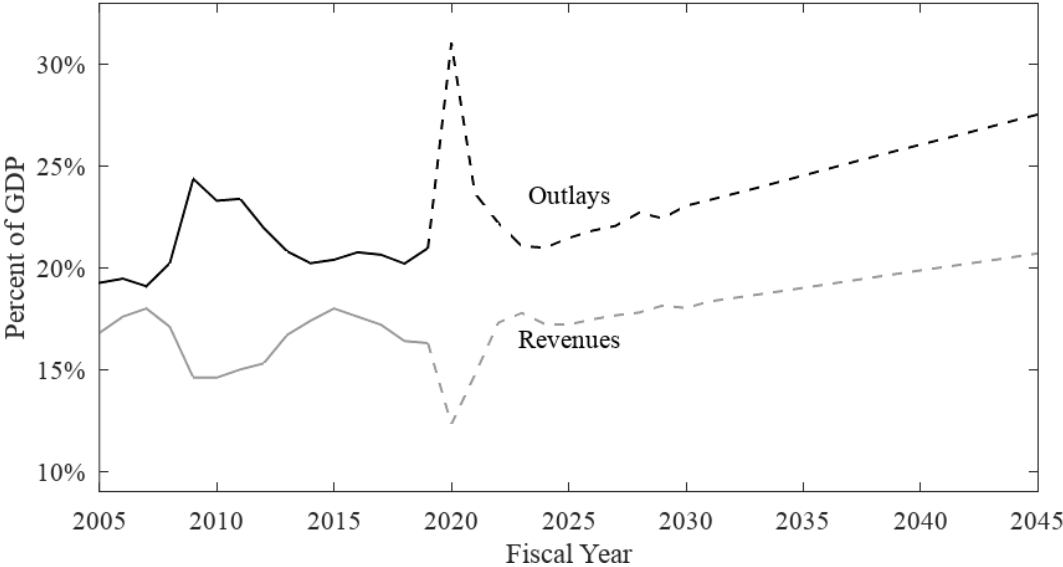


Figure 1 shows the revised federal spending baseline as a percent of GDP from 2020 to 2045 and, to provide some historical perspective, from 2005 to the present. Starting from this year, federal spending as a percent of GDP initially declines sharply as spending from the coronavirus legislation falls and the economy recovers. Spending plateaus at just over 21

³ We estimated the historical relationship between the size of the output gap and automatic stabilizers using CBO’s annual report on automatic stabilizers (*Automatic Stabilizers in the Federal Budget: 2020 to 2030*, <https://www.cbo.gov/publication/56095>). We assume the economy will return to potential in 2023. This assumption differs from CBO’s most recent economic projections, which do not expect a return to potential until the latter half the decade (*An Update to the Economic Outlook*, <https://www.cbo.gov/publication/56442>).

percent of GDP and then begins to steadily increase as rising Social Security, Medicare, other senior citizen program expenditures dominate the trend.⁴

The revenue baseline used for our analysis also incorporates estimates of the revenue impact of coronavirus legislation and the economic recession. According to CBO, coronavirus legislation enacted to date will reduce federal tax receipts in 2020 by \$650 billion, or 3.1 percent of GDP. This amount declines by more than half in 2021. Thereafter, the revenue impact is positive but inconsequentially small.⁵ On the other hand, the recession's impact on near-term federal revenues is large. CBO's most recent economic forecast projects that real GDP will decline by 5.8 percent in fiscal year 2020 from its 2019 level and will rebound in fiscal year 2021. Applying the same calculation used to estimate outlay changes from automatic stabilizers, the recession reduces 2020 revenues by about \$450 billion, or 2.2 percent of GDP, from CBO's March baseline. Revenues rebound with the economy but don't reach their 2019 level until 2022.

As we noted earlier, our baseline assumes that future Congresses will enact tax increases to finance a portion of rising future federal spending. Specifically, we have assumed that Congress will finance half of the projected higher baseline outlays with higher tax rates. The tax rate increases are assumed to be gradually phased-in and are in the form of equi-proportionate increases in personal income tax rates, corporate income tax rates, and social insurance tax rates. Under these assumptions, tax rates will be about 20 percent higher in 2045 than in 2022.

Our departure from CBO's tax assumption warrants some discussion. As CBO has often noted, congressional rules require its budget baseline projections to be made under the assumption that provisions of federal tax law remain unchanged from current law. Under current and future budget conditions, this assumption does not seem reasonable. If congress fails to address the growth in entitlement spending and keeps taxes at their current levels, the outstanding federal debt is projected to reach 154 percent of GDP within 25 years. A more reasonable assumption under these conditions is that it will choose to prevent the federal debt from rising to this level by increasing taxes.

We have no strong view on the extent or composition of a tax increase that is likely if Congress doesn't reform entitlement programs. A 20 percent increase to finance half of the

⁴ Relative to the March CBO projections, our baseline is 10 percentage points higher in 2020. Our baseline is 2 percentage points higher the next year and the difference steadily declines thereafter. From 2031 forward in time, the baseline uses spending growth rates contained in CBO's latest long-term forecast.

⁵ In 2022 and 2023, the revenue impact of legislation to date is positive as deferred taxes from 2020 and 2021 are finally paid.

future spending increase seems well within reason. Our assumption that Congress would proportionally increase all tax rates is made merely to avoid introducing exogenous changes in relative prices of labor and capital that would alter the main focus of our work: to analyze the impact of reducing entitlement spending on economic growth.⁶

Figure 1 shows the revenue baseline. Revenues as a percent of GDP decline sharply with the recession, then rise sharply as the economy recovers. Thereafter, revenues continue to steadily rise primarily due to our assumption that Congress gradually increases taxes.

The gap between the outlay and revenues lines in Figure 1 represents annual federal budget deficits. The deficit reaches an extraordinary 18.7 percent in 2020. From this high level, deficits decline for a while as the impact of the coronavirus legislation lessens and the economy recovers. The deficits begin to rise in 2024 when the growth in Social Security, Medicare, and interest payments on the debt cause total federal spending growth to outweigh increases in revenues from a growing economy and the assumed higher taxes.

The coronavirus and the government's response to it is expected to increase the outstanding federal debt to 100 percent of GDP by the end of fiscal year 2020. Thereafter, the federal debt burden is projected to rise steadily throughout the 25-year period covered by our baseline; to 113 percent of GDP in 15 years and to 133 percent in 25 years.

2. Fiscal Consolidation Strategy

To illustrate the potential positive impact of a fiscal consolidation plan on economic growth, we have chosen a stylized long-term budget policy that reduces the growth in federal spending, maintains federal tax rates at their current levels, and limits the outstanding federal debt relative to GDP to its pandemic high level.

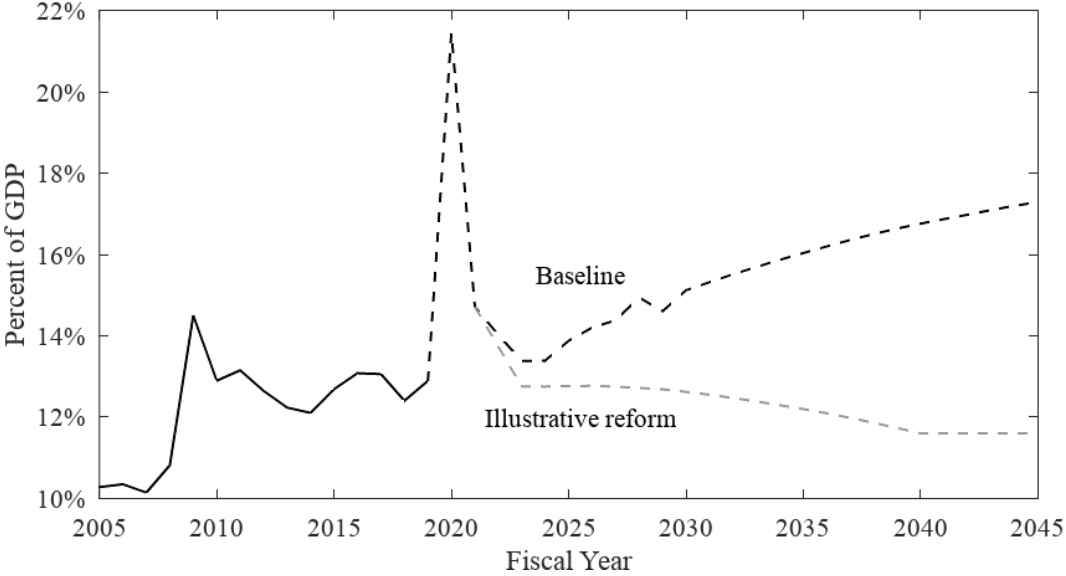
On the spending side of the federal budget ledger, the consolidation plan calls for a sizeable immediate reduction followed by permanent structural program changes that reduce the projected growth in government spending. Specifically, the spending side of the plan has three essential elements. One, reductions in government spending from the baseline which come exclusively from permanent changes in entitlement programs; the principal source of the federal government's long-term fiscal imbalance. Consistent with the CBO baseline, the plan allows defense and non-defense program spending to grow at the rate of economy-wide

⁶ Full expensing and most personal income tax provisions of the Tax Cuts and Jobs Act are scheduled to expire over the next six years. Our baseline ignores the unique impacts these scheduled expirations will have on specific types of taxes.

inflation until 2030. Thereafter, they remain constant as a share of GDP. Two, the plan contains an immediate one-time reduction in entitlement program spending that permanently lowers the overall level of government spending. Three, the plan permanently reduces the growth in entitlement spending thereafter from this lower level. In NIPA terms, the plan reduces the government transfers and leaves government purchases unaffected.

The fiscal consolidation plan is assumed to become fully effective in fiscal year 2022, after the COVID pandemic has passed, and the virus’ impact on the economy has subsided to a point where economic conditions have reached a new steady state. Also by this time, the tax and spending impacts of emergency legislation will have mostly worked their way through the budget.

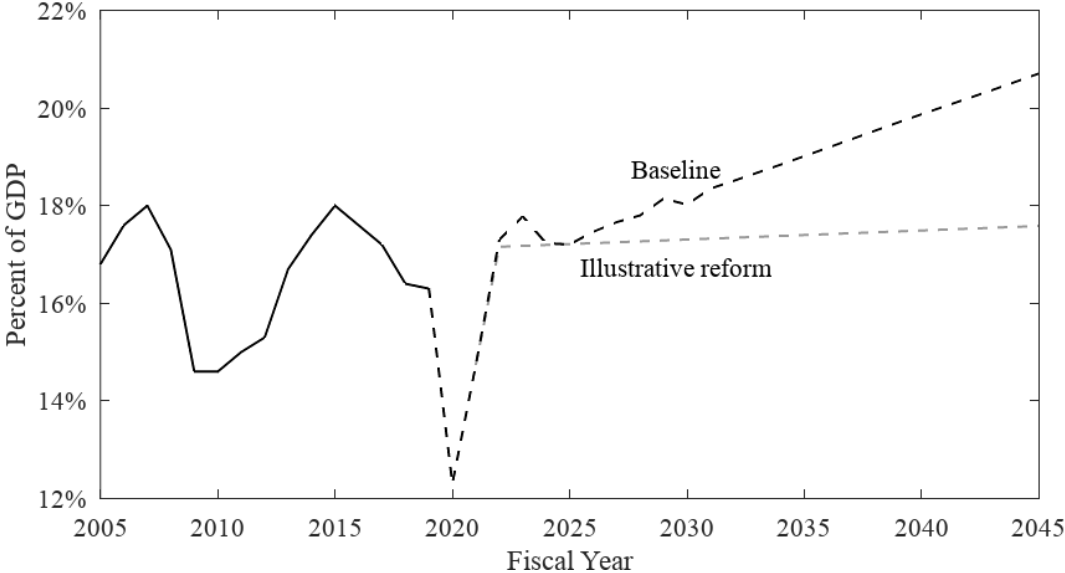
Figure 2. Change in transfers



The consolidation plan would immediately reduce federal spending relative to the budget baseline by 0.3 percent of GDP in 2022 and 0.6 percent of GDP in 2023. As is shown in Figure 2, this reduction would bring federal spending relative to GDP to 20.5 percent, close to its pre-pandemic level in 2019 of 21 percent. Thereafter, the plan would limit the growth in overall entitlement spending to the growth in economy-wide inflation plus each major program eligible population. As we noted earlier, defense and non-defense spending would grow at rates in-line with the budget baseline for these programs. The limit on entitlement spending would gradually reduce total federal spending below the budget baseline. Over time, the impact would of this reduction is substantial. In 2033, ten years from the initiation of the

policy, total federal spending as a percent of GDP, including interest on the debt, would be 3.3 percent lower than baseline expenditures. In twenty years, it would be 5.7 percent lower.

Figure 3. Revenues before and after illustrative reform



On the revenue side of the federal budget ledger, the consolidation plan would maintain all federal tax rates, mainly personal income, social insurance, and corporate income tax rates at their current statutory levels. As is shown in Figure 3, revenue as a share of GDP would rise slightly over time due to real bracket creep. Thus, the plan is designed to prevent the approximately 15 percent tax rate increases that are presumed in the budget baseline.

3. The Model

The model we use to assess the impacts of this fiscal consolidation strategy is based on the model of Coenen, McAdam and Straub (2008), using insights from the papers by Cogan, Cwik, Taylor and Wieland (CCTW, 2010) and by Cogan, Taylor, Wieland and Wolters (CTWW, 2013).⁷

The model is sometimes called the New-Area-Wide Model (NAWM) since a version of the model has been estimated with euro zone data and has replaced the so-called Area-Wide-Model (AWM) in policy. Another version of the NAWM, called the NAWM II, has

⁷ More information about the model can be found in those papers or in the Macroeconomic Model Data Base <https://www.macromodelbase.com/> where the models are listed along with many other models and have the model names EAUS_NAWM08 and EAUS_NAWM08CTWW13.

recently been developed by Coenen, Karadi, Schmidt, and Warne (2019) for the purpose of estimating the effect of large-scale asset purchases and other types policy. Because our paper focusses on monetary policy actions described by a monetary policy rule for the interest rate, we use the regular NAWM which was designed for this purpose.

The model of Coenen et al (2008) is a forward-looking model in which utility maximizing households and profit maximizing firms account for the future in making current making current allocation decisions. The model includes various price and wage rigidities, and other adjustment costs that delay the responsiveness of households and firms to changes in economic variables. In this model, households and firms respond to changes in government fiscal and monetary policy, including changes lump sum and distortionary taxes, government spending, and budget deficits and debt. The model contains a U.S. domestic sector and a Euro area sector to allow for international trade flows.

All households in the model maximize an intertemporal utility function that allows for habit formation. They supply labor to firms and have some market power in setting wages, which, in turn, are determined in staggered contracts. Households pay taxes on consumption purchases, on wage income and on capital income. They also pay social security taxes, a lump-sum tax and receive transfers. Purchases of consumption goods, financial investment in international markets and capital utilization are subject to adjustment costs which vary in proportion to total amounts. The model distinguishes between two types of households. Some households can smooth consumption by investing in domestic and internationally traded bonds and by purchasing physical capital. Other households can smooth consumption only by adjusting their money holdings.

Similarly, there are two types of firms which produce both tradeable and non-tradeable goods. Intermediate goods firms produce a single, tradable differentiated good using capital services and labor as inputs, with an increasing-returns-to-scale production function. These goods are sold in domestic and foreign market under monopolistic competition. Like wages, price setting is subject to staggered price contracts. Final goods firms produce three non-tradeable final goods: private consumption goods, investment goods and public consumption goods. The public consumption good is a composite, consisting of only domestically produced intermediate goods. Final private consumption and private investment goods are produced by using capital services, labor, and intermediate domestic and imported foreign goods, in a CES production function. Varying the use of imported intermediate goods in the production process is subject to adjustment costs. These final goods are sold taking the price as given.

Demand for imported goods is equal to the sum of the respective demands for intermediate goods for private consumption and investment. These intermediate goods are sold in the home market by the foreign intermediate-good producer. There is a home bias for domestic intermediate goods. Domestic and export prices for the same intermediate good might differ as producers use local currency pricing, i.e. set different prices for the domestic and the export market.

The government purchases public goods, borrows, and taxes. The government's budget is balanced each period by means of lump-sum taxes. The central bank sets the short-term nominal interest rate according to a standard interest-rate rule.

To better understand the structure of the fiscal sector in the NAWM model, it is useful to review the government budget constraint:

$$\begin{aligned}
P_{G,t}G_t + TR_t + B_t + M_{t-1} = & \\
\tau_t^C P_{C,t}C_t + \tau_t^N (W_{I,t}N_t^I + W_{J,t}N_t^J) + \tau_t^{W_h} (W_{I,t}N_t^I + W_{J,t}N_t^J) + \tau_t^{W_f} W_t N_t + & \quad (14) \\
\tau_t^K (R_{K,t}u_t - (\Gamma_u(u_t) + \delta)P_{I,t})K_t + T_t + R_t^{-1}B_{t+1} + M_t &
\end{aligned}$$

The left-hand side denotes expenditures while the right-hand side denotes revenues.

G_t , TR_t , τ_t^C , τ_t^N , $\tau_t^{W_h}$, $\tau_t^{W_f}$ and τ_t^K refer to government consumption, transfers, consumption tax rate, labor tax rate, employee and employers' social security contributions, and capital tax rate. They are set exogenously. B_t and M_t are government bonds and money supply. Demands for these assets are determined by the households. Various assumptions can be made about what happens to lump sum taxes, T_t .

The parameters of the model are chosen by setting steady state ratios to match the U.S. domestic and Euro area ratios. The labor supply elasticity equals 0.5. The share of U.S. households without access to financial markets is 27%. The price stickiness for goods sold in the domestic market is higher than for exports. The substitution elasticities between home and foreign goods are set to 1.5. Adjustment costs associated with changing the import share in consumption is a relatively high 2.5. With these parameters consumption and investment respond with low sensitivity to changes in the terms of trade. We deviate with respect to the calibration of the intertemporal elasticity of substitution from Coenen et al (2008). Instead of a value of 2 we use a value of unity which implies log utility and is consistent with a balanced-growth path.

Tax rates are calibrated as in Coenen et al (2008). The initial consumption tax rate is set to 7.7% for the US and 18.3% for the Euro area, the initial income tax to 15.4% and 12.2%, respectively, the initial employee share of social security tax contributions to 7.1% and

11.8%, respectively and the initial employer share of social security tax contribution to 7.1% and 21.9% respectively. The initial capital tax ratio is calibrated to 18.4% in both countries to match the observed investment-to-output expenditure ratio (see Coenen et al, 2008). As we noted earlier, we have assumed in our baseline that in the absence of a consolidation plan, Congress would increase tax rates from these initial levels over time. The consolidation plan, in contrast, would keep taxes at their current level. More specifically, all tax rates τ^C , τ^N , τ^{Wh} , τ^{Wf} , and τ^K in the consolidation plan equal initial 2022 levels stated above, while in the baseline the tax rates are higher in each year--about 20 percent higher in 2045 than in 2022. In the illustrative consolidation reform plan, transfers (TR) are lower in all years than in the baseline by the amounts shown in Figure 2. In the model, this difference in taxes is treated as a reduction in tax rates from these steady-state levels. The government consumption to GDP ratio is calibrated to 16% for the US and 18% for the Euro area.

4. The Impact of the Fiscal Consolidation Strategy

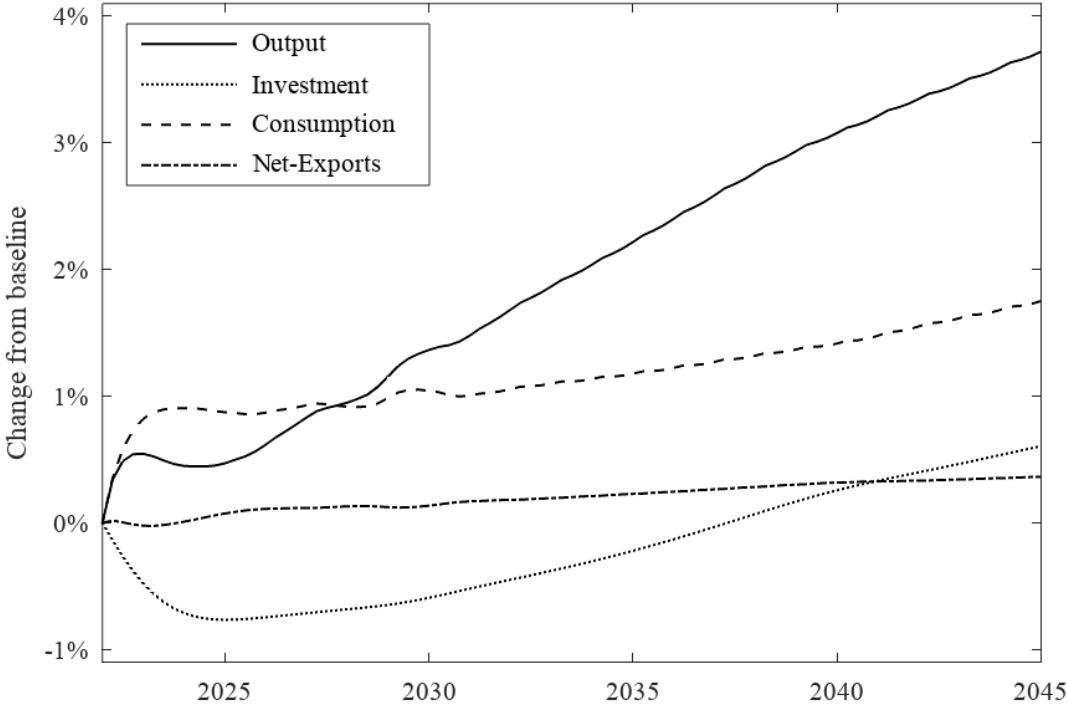
We consider the impacts of our consolidation strategy on the economy by simulating the model described above. To do this we assume that the strategy is announced and implemented starting in the first quarter of 2022. The households and firms in the model are assumed to expect immediately that the plan will be carried out as announced from 2022 onward. With the rational expectations assumption of the model, they take the reduced tax rates and increased after-tax income into account as they make their consumption decisions.

The impact of the consolidation strategy is shown in Figure 4. Observe that there is a substantial increase in real GDP in the short run, and that this positive change occurs throughout the simulation through 2045. The short-run increase of about 0.5 percent in the first two years following the policy's implementation amounts to about a 10 percent increase in the real GDP growth rate. Over the longer-term, GDP increases by about 3.7 percent after 25 years. This is equivalent to a 7 percent increase in the economy's real growth rate.

The short-run positive change in real GDP—say from the current CBO estimate of 2 percent annual growth rate to 2.2 percent growth—associated with a reduction in the budget deficit may appear surprising given that there are wage and price rigidities in this model which can result in negative Keynesian effects. Figure 4 shows that the reason that output rises is that a major demand component of output, namely consumption, rises. Consumption and output increase immediately at the time the policy is established, with further sustained increases occurring over the longer term. Because households are forward looking, they

expect of higher after-tax incomes in the future. The increased consumption offsets any other demand side effects. That the change in policy is announced and is thereby known is important for this result.

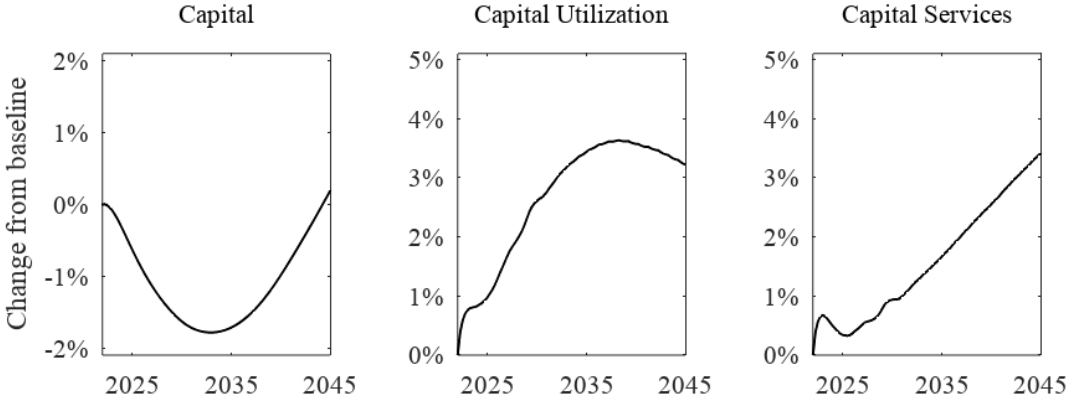
Figure 4. Impact on GDP and its components



Observe also, however, that investment decreases in the short-run, though eventually it increases in the long-run. Because investment is a smaller component of GDP than consumption, real GDP rises in the short run despite the fall in investment.

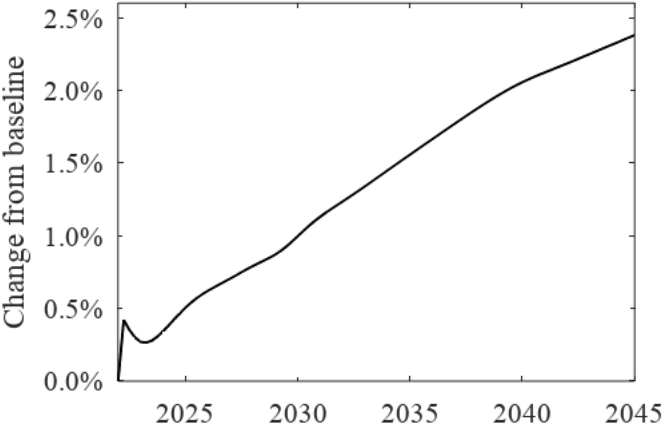
Figure 5 gives more perspective on the decline in investment. The left-hand panel of Figure 5 shows that capital initially declines compared to the baseline as investment falls. This decline is partly a consequence of an adjustment cost associated with investing in new plant and equipment capital which is built into the model. The middle panel shows an offsetting rise in the utilization of existing capital which is not subject to the same adjustment cost. The right-hand panel shows that the use of capital services in production rises, as the increase in the utilization of existing outweighs the temporary decline in investment. Additional simulations that we performed for this paper, show that increasing the cost of adjusting capital utilization reduces the decline in investment and correspondingly reduces the change in utilization shown in the other parts of Figure 5.

Figure 5. Capital Services



The model simulations also show that the positive effects on consumption are bolstered by an increase in net exports, stimulated by a real depreciation of the dollar (as shown in Figure 6). The effect on net exports in the other “country” in this two-country model (which we can think of as Europe) is the opposite sign, though the overall impacts on euro area consumption and GDP are positive, though small, which we show in the appendix to this paper.

Figure 6. Real exchange rate



The simulation makes clear that the proposed fiscal consolidation path is likely to increase economic growth in the medium to long run. The anticipation of tax cuts leads also to an immediate growth of consumption and output and avoids any decrease in economic activity.

The long-term rise in GDP of 3.7 percent produced by our illustrative consolidation plan is the result of the combined impacts of lower government transfer payments and lower tax rates relative to the budget baseline. Naturally, the question arises as to the separate effects of each policy. To provide an answer, we assessed an alternative policy that reduces

government transfer payments by the same amount as our illustrative consolidation plan, but leaves taxes unchanged from the baseline. This policy reduces annual budget deficits by more than the consolidation plan and, thereby frees up more resources for an immediate increase in consumption and greater investment in the long run. But the additional deficit reduction comes at the price of higher tax rates. The policy is estimated to raise long-term GDP by 1.9 percent 25 years from now; slightly over one-half of the 3.7 percent increase produced by the consolidation plan. The remaining growth of 1.8 percent results from the consolidation policy's tax reduction. The lower tax rates improve economic incentives, leading to increases in hours worked, production capacity, and disposable income. These factors combine to increase household consumption. This positive impact is partially offset by a decline in investment as the loss of federal tax revenue increases annual budget deficits which crowded out available private sector savings.

One additional note regarding the timing of our plan. As noted above, we have assumed that the consolidation policy is implemented in 2022. If the economy hasn't recovered sufficiently by then and the consolidation plan were to be delayed, the impact of the plan would be felt later; decreasing the growth in GDP each year for the next 25 years.

Figure 7 shows future federal budget outlays, revenues, and annual budget deficits over the next twenty-five years under the fiscal consolidation plan. Federal spending gradually declines as a percent of GDP as the reduction in transfer payments is partially offset by rising interest payments on the outstanding public debt. Federal revenues gradually rise because over time as rising real incomes from a growing economy push individuals into higher tax brackets. Federal budget deficits, as a consequence of the spending and revenue trends, decline over time from over 5 percent of GDP in 2023 to 3.5 percent in 2045.

Figure 7. Outlays and revenues with illustrative reforms

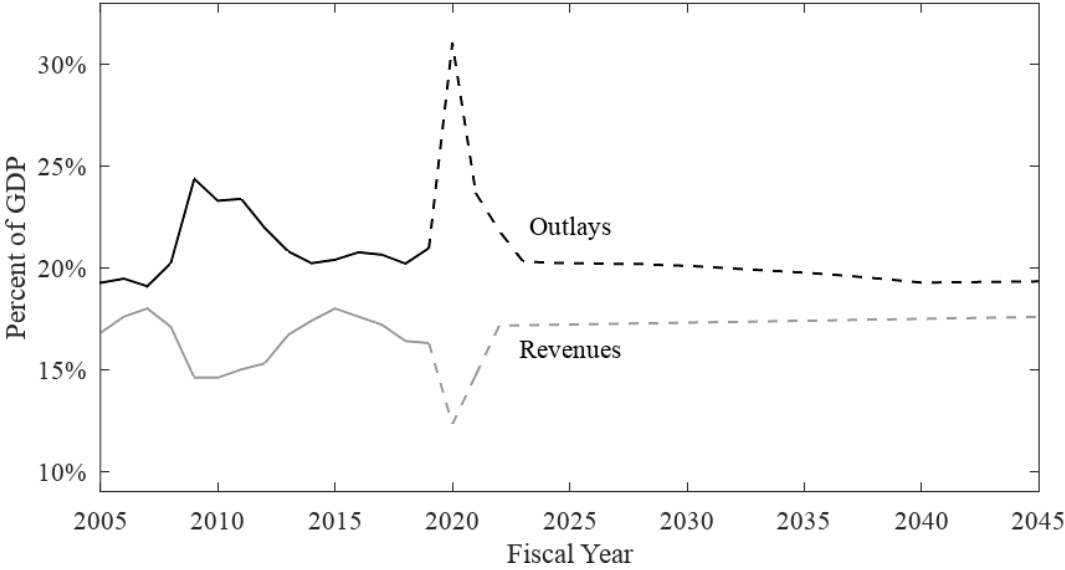
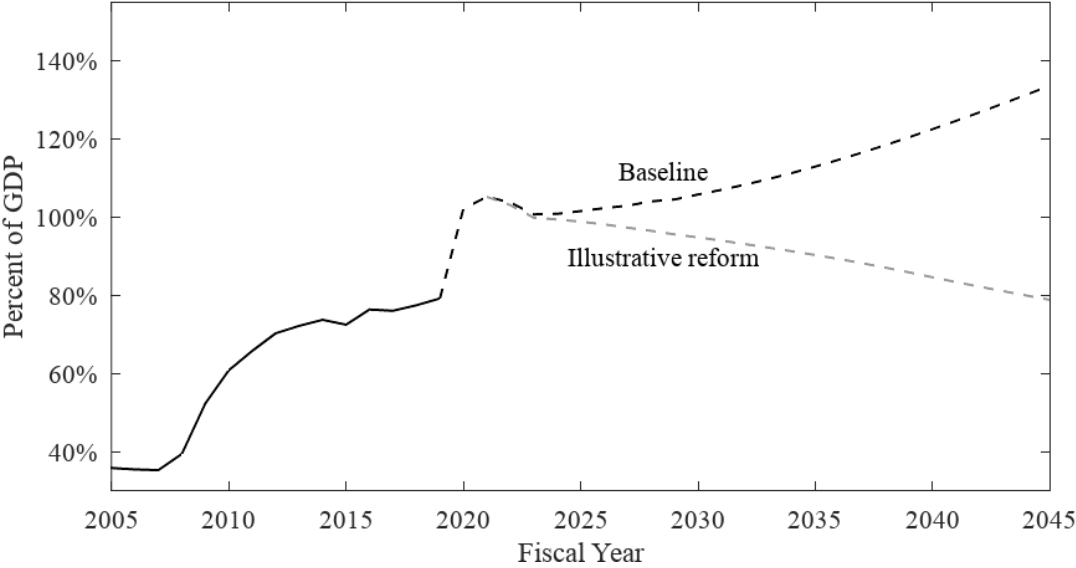


Figure 8 shows the impact of the consolidation plan on the outstanding public debt compared to the debt growth in the budget baseline. The baseline debt to GDP ratio rises from its current level of about 100 percent of GDP to nearly 140 percent in 25 years. This occurs despite the assumption that Congress steadily increase taxes to finance half of the increase in spending. The consolidation plan, which maintains taxes at their current levels, produces a steady and materially significant reduction in the debt to GDP ratio. In 25 years, the debt falls to 80 percent of GDP; its level in 2019 just prior to the onset of the coronavirus health crisis and the economic downturn.

Figure 8. Federal debt before and after illustrative reforms



5. Conclusion

The coronavirus pandemic and the federal government's response to it have produced a substantial increase in federal spending and federal budget deficits. These increases, coming on top of pre-existing large structural imbalance between government revenues and expenditures, has pushed the U.S. outstanding public debt to over 100 percent of GDP for the first time in U.S. history. Even though the pandemic has not yet subsided, it is time for Congress to focus on policies that reduce the federal budget imbalance and its rising debt levels so that economic growth and employment recover robustly.

Governmental choices among taxes, spending, and issuing additional debt will have important ramifications for the U.S. economy.

Economic analysis will play an important role as Congress debates alternative fiscal policies. To aid this debate, this paper has assessed the impact of an illustrative fiscal consolidation plan on U.S. economic growth. The plan focuses on reducing government spending by relying on reductions in entitlement program spending; in NIPA terms, by exclusively reducing government transfer payments. The plan contains an immediate and sharp reduction in entitlement spending followed by a gradual, sustained, lowering of long-term entitlement program spending growth. Both the immediate and long-term reductions are essential elements of a credible plan that would positively affect the economy's long-term growth. The size of the entitlement reduction is chosen to gradually lower the outstanding federal public debt over a period of 25 years to its 2019 level without raising taxes. We have employed New-Area-Wide Model (NAWM) originally developed by Coenen et al (2008) to help assess fiscal policy alternatives.

Our principal finding is that a plan which restrains entitlement spending and avoids an increase in taxes produces an immediate boost to GDP followed by a sustained increase in long-term GDP growth. The driving force behind this outcome is a rise in consumption. Forward-looking individuals, reacting to a credible economic plan that reduces future debt and taxes, respond to their higher permanent disposable income by increasing their consumption. This effect outweighs the offsetting effect of reducing entitlement benefits on consumption.

References

- Coenen, G., McAdam, P., Straub, R., 2008. Tax reform and labour-market performance in the euro area: A simulation-based analysis using the New Area-Wide Model. *Journal of Economic Dynamics & Control* 32(8), 2543–2583.
- Coenen, G., Karadi, P., Schmidt, S., and Warne, A. (2019). “New Area-Wide Model II: an extended version of the ECB’s micro-founded model for policy analysis with a financial sector,” European Central Bank Working Paper 2020, Revised December 2019
- Cogan, J., Cwik, T., Taylor, J., Wieland, V., 2010. New Keynesian versus old Keynesian government spending multipliers. *Journal of Economic Dynamics and Control* 34, 281–295.
- Cogan, J., Taylor, J., Wieland, V., Wolters, M., 2013. Fiscal consolidation strategy. *Journal of Economic Dynamics and Control* 37, 404–421.