Government Revenue and Distributional Effects of Tax Cuts and Jobs Act

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Abstract: *We simulate the effects of the Tax Cuts and Jobs Act (TCJA) using the Tax-Calculator open source microsimulation model. Our simulation predicts that the TCJA will reduce government revenues by nearly $460 billion over the next 10 years without factoring in the additional lost revenue from cutting the corporate income tax rate, reducing the estate tax, and removing the individual mandate provision of the Affordable Care Act. We also describe the effects of the TCJA on the distribution of tax filers.*

In this *Quantitative Note*, we use the Tax-Calculator microsimulation model to simulate the effect of the Tax Cuts and Jobs Act (TCJA) on U.S. households and on government tax revenues. On November 2, 2017, House Republicans introduced the Tax Cuts and Jobs Act, a bill representing major tax reform legislation in the United States. As the bill is making its way through the House and the Senate, it is undergoing revisions. Careful summaries of the many details of the 429-page bill were published by the Tax Policy Center and the Tax Foundation.[1] But the most current version of the bill—the Senate Finance Committee Chairman's modified mark (November 14) has the following key changes.[2]

- Reduce marginal income tax rate schedule for most filers through 2025 (increase in 2026)
- Double the standard deduction through 2025 (reduce in 2026)
- Increase the child tax credit (CTC), but phase out by 2026
- Cut the corporate income tax rate from 35% to 20%
- Cut marginal tax rates on pass-through entity income through 2025 (increase in 2026)
- Repeal state and local income and sales tax deduction through 2025, but reinstate in 2026
- Repeal alternative minimum tax (AMT) through 2025, but reinstate in 2026

To simulate the effects of the TCJA, we use the open source microsimulation model, Tax-Calculator. This model provides traditional static scores of tax policy with behavioral responses of tax filers as well as distributional analysis of the policy's effects on groups of individual filers. It is worth noting that our simulation of the TCJA with Tax-Calculator could not include the effects of the cut to the corporate income tax rate, the doubling of the estate tax exemption, and the removal of the individual insurance mandate under the Affordable Care Act (ACA), as well as some other minor components of the

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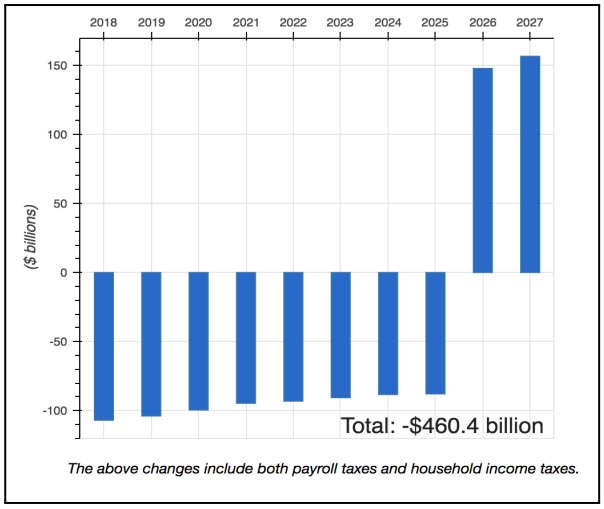
[1] Thorough summaries of the details of the TCJA can be found from the Tax Policy Center at http://www.taxpolicycenter.org/publications/preliminary-distributional-analysis-tax-cuts-and-jobs-act/full and from the Tax Foundation at https://taxfoundation.org/details-tax-cuts-jobs-act/.

[2] See the Senate Finance Committee summary here, and the Joint Committee on Taxation static score here.

reform.[3] This simulation should be thought of as focusing on the effects of the reform on households, and the estimated changes in government revenue losses should be thought of as conservative.

Figure 1 shows the projected change in net government revenues for each of the next 10 years. Our simulation projects government tax revenues to decline by an average of nearly $100 billion each of the next 8 years through 2025. But the net change in revenue flips to the positive with an average of over $150 billion year increases in 2026 and 2027. The year 2026 is when many of the tax cuts in the Senate TCJA are set to expire. Our simulation forecasts the total decline in government revenue from the TCJA over the next 10 years to be $460.4 billion. If we were to include the effects of the business tax reforms estimated by the Joint Committee on Taxation of -$683.4 billion over 10 years, the decline in revenues would be nearly $1.2 trillion, in line with recent estimates from other organizations.[4]

Figure 1. Change in net government revenue from baseline to reform: 2018–2027



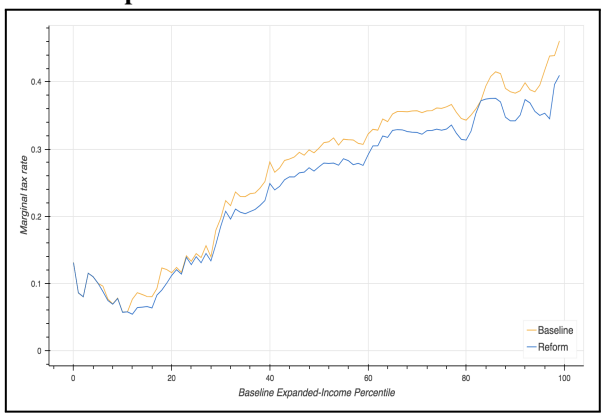
Because the TCJA includes many changes, the effects on tax filers' incentives to work and save are varied. Figure 2 compares the marginal tax rate on tax filer wage income on the next dollar earned in the baseline scenario versus the TCJA reform for the year 2018. This picture shows that TCJA represents significant reductions marginal tax rates for poor individuals in the 10th to 20th income percentile, and lower-middle-to-high income individuals above the 35th income percentile. The so-called "bubble rate" characteristic of the reform is evident in the slight increase in marginal tax rates on individuals around the 85th income percentile.[5]

[3]The source file for the complete list of changes we input into the TaxCalculator model is available in the TCJA_Senate_111417.json file.

[4]The JCT Staff (November 14, 2017) estimate the TCJA effect to be a decrease in government revenues of $1.4 trillion over the 2018 to 2027 period. The Penn Wharton Budget Model estimated the 10-year revenue loss to be between $1.3 and $1.5 trillion.

[5]See Bryan (November 3, 2017).

Figure 2. Mean marginal tax rate for primary earner wage income by income percentile: 2018



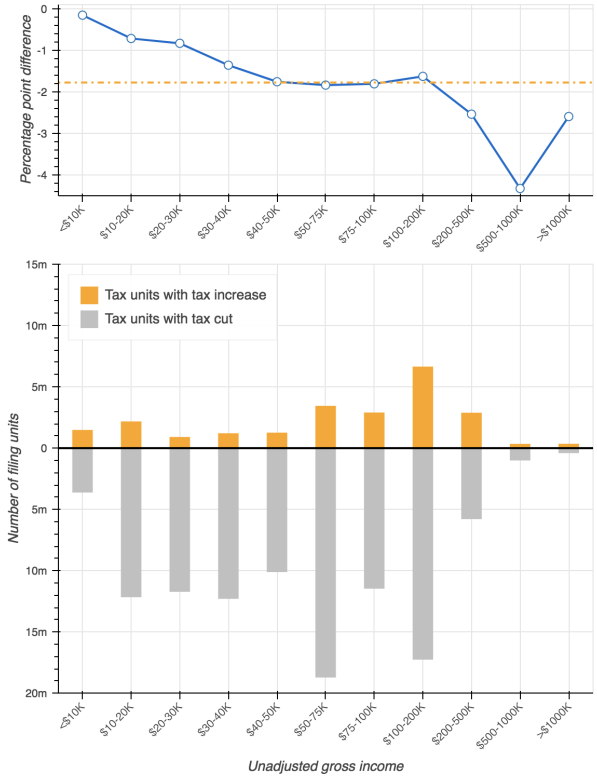
Figures 3a and 3b show the distributional analysis of the TCJA in 2018. The bottom panel of Figure 3a shows the number of filing units by income range with a tax increase versus a tax decrease. It is clear that most of the filing units whose tax liabilities change have a tax decrease. The top panel of Figure 3a shows that the biggest cuts to the effective tax rate (ETR) accrue to the highest earners. Filers with between $500,000 and $1 million in income would have their ETR decline by an average of 4.3 percentage points, and filers with income over $1 million would have their ETR decline by 2.5 percentage points.

Figure 3b shows the number of filers with a tax cut and tax increase by age group as well as average percentage decrease in the effective tax rate by age group. The modified Senate bill shows tax cuts predominantly falling on filers age 36-to-45 with an average decrease in effective tax rates of nearly 2 percentage points. The cuts taper off by age in either direction, with the average for filers over age 65 being decline of only 0.6 percentage points.

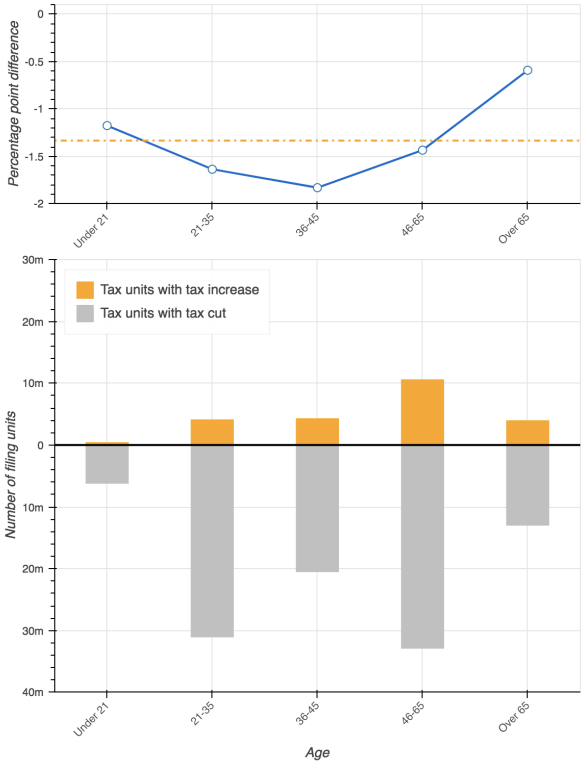
Because so many of the tax cuts in the Senate TCJA are set to expire in 2026, as evidenced in Figure 1, we analyze the distributional effects of the reform by income and age in 2026. Figures 3c and 3d are the year-2026 versions of Figures 3a and 3b.

Both figures show that the vast majority of filers would see a tax increase in 2026. The average percentage point increase in effective tax rate of 0.25 is small. The only outlier is the low-income group of filers with income between $10 and $20 thousand. Their ETR increases by an average of nearly 0.6 percentage points. The tax increase in 2026 seems to fall most heavily on the pre-retirement group aged 46 to 65 with an average ETR increase of 0.4 percentage points.

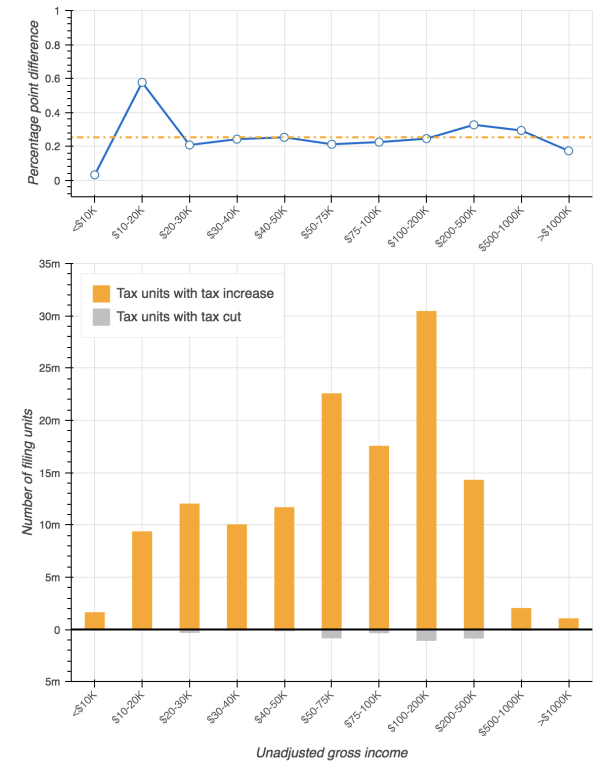
Figure 3. Difference in effective tax rates from reform and filers with tax increase/decrease by income and age groups: 2018 and 2026



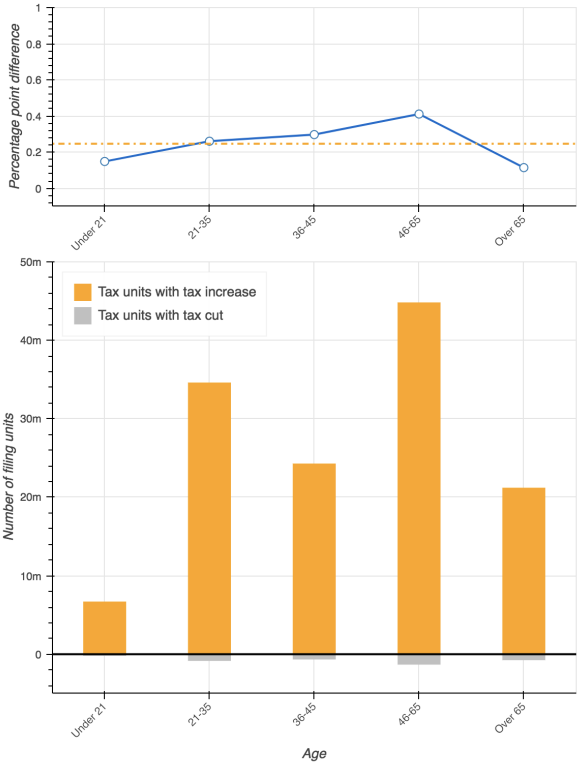
(a) by income group, 2018



(b) by age group, 2018



(c) by income group, 2026



(d) by age group, 2026

Modeling Notes

Tax-Calculator

Tax-Calculator (release 0.13.2) is an open source microsimulation model that is able to simulate a rich set of policy changes to the U.S. federal individual income tax system. In conjunction with micro data that represent the U.S. population and a set of behavioral assumptions, Tax-Calculator can be used to conduct static revenue scoring and distributional analyses of tax policies. Tax-Calculator is written in Python, an interpreted language that can execute on Windows, Mac, or Linux. Tax-Calculator can be run using the Public Use File (PUF) from the IRS Statistics of Income Group or using a Current Population Survey matched dataset.

Modeling Assumptions

The simulations from Tax-Calculator include assumptions about tax filer behavioral responses to policy changes as well as an assumption about the growth in the Consumer Price Index (CPI) chained measure of inflation. In our simulation, we assume that the tax filer's substitution effect elasticity of taxable income to a tax change is 0.25, which falls within the range suggested by Saez et al. (2012). We assume the income effect elasticity of taxable income is zero. We also assume that the filer long-term capital gains elasticity of taxable income is -3.49, in line with Dowd et al. (2012). We also represent the change to indexing tax brackets to the chained CPI as a quarter percentage point reduction (-0.0025) in the growth rate of the inflation measure which was the headline CPI in the baseline case.

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