



**KENNESAW STATE  
UNIVERSITY**

COLES COLLEGE OF BUSINESS  
*Bagwell Center for the Study of Markets  
and Economic Opportunity*

# Commentary

**Title:**

*"What Would Be the  
Macroeconomic Effects of a  
Corporate Tax Hike?"*

**Author(s):**

Filippo Occhino

---

January 2023

Last March, in the 2023 President's Budget, President Biden proposed that Congress raise the corporate tax rate from 21 percent to 28 percent.<sup>1</sup> Then, last August, Congress introduced a new 15 percent corporate alternative minimum tax on large corporations in the Inflation Reduction Act.<sup>2</sup> What are the effects of such corporate tax hikes on aggregate economic activity?

There are two methods to compute the effects of a corporate tax change. First, we can use statistics and econometrics to estimate the effects from the history of past tax changes. Alas, this method is not perfect, as history often rhymes but does not repeat itself. Second, we can use macroeconomic models that replicate how the economy works and how households and businesses respond to economic incentives.

In this commentary, first, I explain the advantages of using macroeconomic models, and then, I use one such model to predict the effects of a corporate tax hike.

### **The Advantages of Using a Macroeconomic Model.**

Using a macroeconomic model to predict the effects of a corporate tax change has two main advantages over using econometrics. The first advantage has to do with the interaction between tax changes and economic conditions. Past changes in the corporate tax rate were often driven by changes in economic conditions. In technical jargon, changes in the corporate tax rate were endogenous. With econometrics, it is difficult to distinguish whether the changes in economic conditions were caused by the changes in the corporate tax rate or vice versa. In contrast, macroeconomic models can clearly distinguish the two effects.

The 2017 tax reform is a good example of why it is difficult to determine whether a tax change was driven by economic conditions or not. In 2017, Congress passed the Tax Cuts and Jobs Act, a tax reform that included a cut in the corporate tax rate from 35 percent to 21 percent. On the one hand, the tax cut may have been exogenous, the ultimate result of a political election that had little to do with economic conditions. On the other hand, the tax cut may have been endogenous, as it was partly made possible by the low levels of interest rates, which relaxed the fiscal constraint and allowed cutting taxes and raising government debt. In this latter case, causality would have run both directions – the tax cut would have affected economic conditions and vice versa – and it would be difficult for econometrics to distinguish the effects.

The second advantage of using macroeconomic models rather than econometrics has to do with how often the specific tax change that we are interested in occurred in the past. Past changes in the corporate tax rate were often accompanied by changes in other policy tools, for instance, changes in depreciation allowances and investment tax credits. The details about the policy changes varied greatly across historical episodes: Some policy changes were permanent; others were temporary with varying duration; Some depreciation allowances and tax credits applied broadly to most types of investment; others applied selectively to a few categories. With econometrics, it is difficult to disentangle and estimate the effects because econometrics works best when there are many historical episodes where the same policy change occurred by itself. In contrast, macroeconomic models can predict the effects of any policy change, regardless of the history of past policy changes.

In fact, macroeconomic models can predict the effects of a policy change even if it never occurred in the past, something that econometrics cannot do. For instance, macroeconomic models can predict the effects of a policy change that occurs gradually over time in a way that never

---

<sup>1</sup> Budget of the U.S. Government, Fiscal Year 2023, Office of Management and Budget ([https://www.whitehouse.gov/wp-content/uploads/2022/03/budget\\_fy2023.pdf](https://www.whitehouse.gov/wp-content/uploads/2022/03/budget_fy2023.pdf)).

<sup>2</sup> Inflation Reduction Act of 2022 (<https://www.congress.gov/bill/117th-congress/house-bill/5376>).

happened in the past. We will consider one such policy change – a gradual increase in the bonus depreciation of capital – later in this commentary.

### The Predictions of a Macroeconomic Model.

To predict the effects of a corporate tax hike, I use a macroeconomic model that describes the structure of the economy in a simplified way, abstracting from all the features that are likely less important.

In the model, there are four sectors: the household sector, the corporate business sector, the noncorporate business sector, and the government. Each sector makes economic decisions in a rational way. Households decide how much to work, save, and consume. Businesses decide how much to borrow, hire, produce, and invest. They finance their investment expenses through a mix of equity and debt and deduct interest expenses and capital depreciation from their taxable income. The government collects taxes, spends, and issues debt. The model is based on the one that I describe in my recent Bagwell Center working paper.<sup>3</sup> Relative to that model, I add a noncorporate business sector, similar to an article I published in *Macroeconomic Dynamics*.<sup>4</sup>

Table 1 summarizes the predictions of the model on the effects of a corporate tax hike – specifically, a permanent increase in the corporate tax rate from 21 percent to 28 percent, like the increase originally proposed in the 2023 President's Budget – on the business sector.

**Table 1: The effects of an increase in the corporate tax rate from 21 percent to 28 percent in the benchmark version of the model.**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10
Business output	– 0.3%	– 0.3%	– 0.3%	– 0.3%	– 0.3%	– 0.4%
Business investment	– 1.2%	– 1.2%	– 1.2%	– 1.1%	– 1.1%	– 1.0%
Business employment	– 0.4%	– 0.4%	– 0.4%	– 0.3%	– 0.3%	– 0.3%
Business income taxes	16%	16%	17%	17%	18%	18%

The model predicts that, in the year of the tax hike, business output, investment, and employment decrease, respectively, by 0.3 percent, 1.2 percent, and 0.4 percent, while business income taxes (i.e., the business income tax liability) increase by 16 percent. The effects persist for several years. To put things in perspective, business output represents, approximately, 75 percent of GDP,<sup>5</sup> while federal taxes on corporate income are about \$300 billion.<sup>6</sup>

<sup>3</sup> Occhino, Filippo, 2022, "The Macroeconomic Effects of Business Tax Cuts," The Bagwell Center for the Study of Markets and Economic Opportunity, Working Paper Series, Summer 2022, Kennesaw State University (<https://coles.kennesaw.edu/econopp/docs/September-2022-Macroeconomic-Effects.pdf>). In this commentary, I set the fraction of investment expenses that can be immediately deducted equal to zero to approximate the tax law in effect after the expiration of the bonus depreciation provision in 2028.

<sup>4</sup> Occhino, Filippo, 2022, "The Macroeconomic Effects of the Tax Cuts and Jobs Acts", *Macroeconomic Dynamics*, forthcoming, (<https://doi.org/10.1017/S1365100522000311>).

<sup>5</sup> Bureau of Economic Analysis, National Income and Product Accounts, Table 1.3.5, Gross Value Added by Sector.

<sup>6</sup> Bureau of Economic Analysis, National Income and Product Accounts, Table 3.2. Federal Government Current Receipts and Expenditures. Federal taxes on noncorporate business income cannot be easily identified because they are a subset of personal income taxes. However, they are likely greater than federal taxes on corporate income since the net income of the noncorporate business sector is about 50 percent greater than the net income of C corporations (Internal Revenue Service, SOI Tax Stats - Integrated Business Data, Table 1).

The working of the model sheds light on the economic intuition behind these effects. The tax hike raises the marginal effective tax rate, which distorts investment decisions and discourages investment demand. As investment demand by the corporate sector decreases, the real interest rate decreases and stimulates investment demand by the noncorporate business sector. In aggregate, however, business investment decreases. The lower level of investment reduces the stock of capital over time. With a lower capital stock, the marginal product of labor decreases, reducing the business demand for labor and the real wage rate. As the real wage rate decreases, employment decreases and leads to a lower level of output.

The size of the effects on output, investment, and employment, although not negligible, are not large. The reason is that the distortions generated by the tax are mitigated by the presence of two tax shields that reduce taxable income, one associated with the deductibility of interest expenses and one associated with the accelerated depreciation of capital. As the tax rate increases, the tax shields increase and mitigate the tax distortions.

Although the model incorporates various realistic details of the structure of the economy, it is necessarily stylized and may miss features of importance for the effects of the tax hike. For this reason, there is some uncertainty about how accurate the model predictions are. To illustrate how the model predictions change when the model changes, Table 2 summarizes the predictions of an alternative version of the model without the two tax shields. In this alternative version, the distortions generated by the tax are not mitigated by the two tax shields, so the size of the effects of the tax hike are larger than in the benchmark model. In the initial years after the tax hike, the effects on output and employment are about 50 percent larger, while the effect on investment is twice as large.

**Table 2: The effects of an increase in the corporate tax rate from 21 percent to 28 percent in an alternative version of the model without the tax shields.**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10
Business output	- 0.4%	- 0.5%	- 0.5%	- 0.6%	- 0.6%	- 0.7%
Business investment	- 2.6%	- 2.5%	- 2.5%	- 2.4%	- 2.4%	- 2.2%
Business employment	- 0.6%	- 0.6%	- 0.5%	- 0.5%	- 0.5%	- 0.3%
Business income taxes	15%	15%	15%	16%	16%	17%

The large uncertainty notwithstanding, the model predicts that a tax hike increases the tax revenue but discourages economic activity. From the point of view of the policy maker, the increase in tax revenue represents a benefit, while the contraction in economic activity represents a cost. To mitigate the cost, the policy maker could increase the bonus depreciation of capital – bonus depreciation allows businesses to deduct immediately a fraction of their investment expenses, decreasing the marginal effective tax rate and reducing the tax distortions on investment, as explained in Fullerton (1999).<sup>7</sup> A simultaneous increase in the bonus depreciation and the tax rate could even decrease the marginal effective tax rate without decreasing tax revenue.

Since an increase in bonus depreciation tends to be fiscally expensive, especially in the initial years, the policy maker could consider increasing the bonus depreciation gradually over time. I use the benchmark version of the model to predict the effects of such an incremental increase in bonus depreciation (a policy never implemented in the past which, therefore, could not

<sup>7</sup> Fullerton, Don, 1999, "Marginal Effective Tax Rate". In Joseph J. Cordes, Robert D. Ebel, and Jane G. Gravelle (eds.), *The Encyclopedia of Taxation and Tax Policy*, pp. 270-272, Urban Institute Press.

be analyzed empirically with real world data and econometric techniques). Bonus depreciation increases by 5 percentage points in the initial year and then by an additional 1 percentage point per year over the next 5 years. As a result, from the sixth year on, the total increase in bonus depreciation is 10 percentage points. As shown in Table 3, the gradual increase in bonus depreciation decreases tax revenue, especially in the initial years. However, it stimulates business output, investment, and employment, especially in the longer run.

**Table 3: The effects of a gradual increase in the bonus depreciation of capital by 10 percentage points in the benchmark version of the model.**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10
Business output	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
Business investment	0.3%	0.4%	0.5%	0.6%	0.7%	0.7%
Business employment	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Business income taxes	- 16%	- 16%	- 16%	- 16%	- 16%	- 8%

In sum, the model used in this commentary predicts that a permanent increase in the corporate tax rate from 21 percent to 28 percent would increase business income tax revenue by 16 percent and would decrease business output by 0.3 percent in the short run and by 0.4 percent in the longer run. A gradual increase in the bonus depreciation of capital would mitigate the contractionary effects of the tax hike, especially in the longer run, but would lower tax revenue, especially in the short run. Congress could take these model predictions into account while deciding whether to increase the corporate tax rate or the bonus depreciation of capital, weighing costs and benefits in terms of tax revenue and levels of economic activity in both the short run and long run.