

Background

How do taxes affect the economy in the short run?

TAXES AND THE ECONOMY

1/6

Q. How do taxes affect the economy in the short run?

A. Primarily through their impact on demand. Tax cuts boost demand by increasing disposable income and by encouraging businesses to hire and invest more. Tax increases do the reverse. These demand effects can be substantial when the economy is weak but smaller when it is operating near capacity.

TAXES AND SHORT-RUN DEMAND

Economic activity reflects a balance between what people, businesses, and governments want to buy and what they want to sell. In the short run—focusing on the next one or two years—economic policy has greater impact on the demand side. When the economy is weak, for example, the Federal Reserve tries to boost consumer and business demand by cutting interest rates or purchasing financial securities. Congress, for its part, can boost demand by increasing spending and cutting taxes.

Tax cuts increase household demand by increasing workers' take-home pay. Tax cuts can boost business demand by increasing firms' after-tax cash flow, which can be used to pay dividends and expand activity, and by making hiring and investing more attractive.

MULTIPLIERS

How much tax cuts boost demand (or tax hikes restrain it) depends on the sensitivity of household and business behavior—for example, how households divide increased after-tax income between consumption and saving, and whether businesses choose to hire and invest more. Economists summarize these effects in a simple measure, the output multiplier, expressing how many dollars of increased economic activity result from a dollar reduction in taxes or a dollar increase in government spending. The Congressional Budget Office (CBO) has estimated such multipliers for a mix of tax and spending policies (table 1).

As these estimates suggest, the stimulus from tax cuts or spending increases depends on the strength of the economy. If it is operating close to potential and the Federal Reserve is not constrained by the zero lower bound on interest rates, fiscal policies will have a small short-run economic effect, largely because the Fed will offset fiscal stimulus with interest rate hikes. However, if the economy is far from potential and short-term interest rates are close to zero, fiscal stimulus can have significantly more impact because the Fed will not offset it. CBO estimates that fiscal multipliers are about three times larger when the economy is very weak than when it is strong.

Background

How do taxes affect the economy in the short run?

TABLE 1
Output Multipliers for Federal Fiscal Policies



	Economy Well Below Potential		Economy Close to Potential	
	Low	High	Low	High
Tax cuts				
Lower- and middle-income people, two years	0.3	1.5	0.1	0.5
Higher-income people, one year	0.1	0.6	0.0	0.2
First-time homebuyer credit, extension	0.2	0.8	0.1	0.3
Corporate tax provisions primarily affecting cash flow	0.0	0.4	0.0	0.1
Transfer payments				
Individuals	0.4	2.1	0.1	0.7
Retirees	0.2	1.0	0.1	0.3
Transfers to state and local governments				
Infrastructure	0.4	2.2	0.1	0.7
Other purposes	0.4	1.8	0.1	0.6
Purchases of goods and services				
	0.5	2.5	0.2	0.8

Source: Whalen and Reichling (2015).

Notes: If the economy is well below potential, output gains are spread over one (Low) to four (High) quarters. If the economy is operating close to potential, output gains are spread over one (Low) to three (High) quarters and are partly offset by output losses through the eighth quarter.

CBO's numbers illustrate substantial uncertainty in our understanding of how fiscal policies affect the economy. For a two-year tax cut aimed at lower- and middle-income households, for example, CBO's low estimate of the multiplier (0.3) is just one-fifth the size of its high estimate (1.5).

But some things are clear. CBO's estimates suggest that, dollar for dollar, tax cuts are often a less effective means of stimulus than are spending increases. If the federal government purchases goods and services itself (or helps state and local governments do so), most or all of the spending will boost demand. If the government cuts personal taxes, however, a substantial amount of the added spending power leaks into saving. That dampening effect can be moderated by targeting tax cuts to lower- and middle-income households, which are less likely to save.

OTHER SHORT-RUN EFFECTS

Tax policies can also affect the supply of labor in the short run. A cut in payroll taxes could bring some workers into the labor market or encourage those already working to put in more hours. Such supply changes have little effect on output if the economy is operating well below potential. Under those conditions, people have difficulty finding more work even if they want it. If the economy is operating near potential, however, increased labor supply can translate to increased output.

Background

How do taxes affect the economy in the short run?

THE TAX POLICY CENTER'S MODEL

The Tax Policy Center (TPC) model of short-run economic effects differs slightly in approach compared to CBO's but is designed to produce similar estimates. The CBO model estimates direct effects on demand based on generic policy types, as in table 1. The TPC model instead derives effects on after-tax incomes from TPC's distributional tables. TPC used this model to estimate the short-run economic and revenue effects of the Tax Cuts and Jobs Act.

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Background

How do taxes affect the economy in the long run?

TAXES AND THE ECONOMY
2/6

Q. How do taxes affect the economy in the long run?

A. Primarily through the supply side. High marginal tax rates can discourage work, saving, investment, and innovation, while specific tax preferences can affect the allocation of economic resources. But tax cuts can also slow long-run economic growth by increasing deficits. The long-run effects of tax policies thus depend not only on their incentive effects but also their deficit effects.

Economic activity reflects a balance between what people, businesses, and governments want to buy and what they want to sell. In the short run, demand factors loom large. In the long run, though, supply plays the primary role in determining economic potential. Our productive capacity depends on the size and skills of the workforce; the amount and quality of machines, buildings, vehicles, computers, and other physical capital that workers use; and the stock of knowledge and ideas.

TAX INCENTIVES

By influencing incentives, taxes can affect both supply and demand factors. Reducing marginal tax rates on wages and salaries, for example, can induce people to work more. Expanding the earned income tax credit can bring more low-skilled workers into the labor force. Lower marginal tax rates on the returns to assets (such as interest, dividends, and capital gains) can encourage saving. Reducing marginal tax rates on business income can cause some companies to invest domestically rather than abroad. Tax breaks for research can encourage the creation of new ideas that spill over to help the broader economy. And so on.

Note, however, that tax reductions can also have negative supply effects. If a cut increases workers' after-tax income, some may choose to work less and take more leisure. This "income effect" pushes against the "substitution effect," in which lower tax rates at the margin increase the financial reward of working.

Tax provisions can also distort how investment capital is deployed. Our current tax system, for example, favors housing over other types of investment. That differential likely induces overinvestment in housing and reduces economic output and social welfare.

BUDGET EFFECTS

Tax cuts can also slow long-run economic growth by increasing budget deficits. When the economy is operating near potential, government borrowing is financed by diverting some capital that would have gone into private investment or by borrowing from foreign investors. Government borrowing thus either crowds out private investment, reducing future productive capacity relative to what it could have been, or reduces how much of the future income from that investment goes to US residents. Either way, deficits can reduce

Background

How do taxes affect the economy in the long run?

future well-being.

The long-run effects of tax policies thus depend not only on their incentive effects but also on their budgetary effects. If Congress reduces marginal tax rates on individual incomes, for example, the long-run effects could be either positive or negative depending on whether the resulting impacts on saving and investment outweigh the potential drag from increased deficits.

PUTTING IT TOGETHER

That leaves open questions on how large incentive and deficit effects are, and how to model them for policy analysis. The Congressional Budget Office and the Joint Committee on Taxation each use multiple models that differ in assumptions about how forward-looking people are, how the United States connects to the global economy, how government borrowing affects private investment, and how businesses and individuals respond to tax changes. Models used in other government agencies, in think tanks, and in academia vary even more. The one area of consensus is that the most pro-growth policies are those that improve incentives to work, save, invest, and innovate without driving up long-run deficits.

The Urban-Brookings Tax Policy Center (TPC) has developed its own economic model to analyze the long-run economic effects of tax proposals. In TPC's model, simple reduced-form equations based on empirical analysis determine the impact of tax policy on labor supply, saving, and investment. TPC used this model to estimate the long-run economic and revenue effects of the Tax Cuts and Jobs Act.

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Background

What are dynamic scoring and dynamic analysis?

TAXES AND THE ECONOMY

3/6

Q. What are dynamic scoring and dynamic analysis?

A. Tax, spending, and regulatory policies can affect incomes, employment, and other broad measures of economic activity. Dynamic analysis accounts for those macroeconomic impacts, while dynamic scoring uses dynamic analysis in estimating the budgetary impact of proposed policy changes.

BUDGET SCORING

The Congressional Budget Office (CBO) and the Joint Committee on Taxation (JCT) estimate the budgetary effects of tax, spending, and regulatory legislation. The resulting “scores” play a major role in policy deliberations because of congressional budget rules and public concern about the budget.

CBO and JCT recognize that households’ and businesses’ economic activity can be sensitive to changes in policy. An increase in the cigarette tax, for example, will reduce smoking, while new subsidies for health insurance will increase coverage. The agencies account for those behavioral responses in their estimates.

For many years, however, CBO and JCT budget scores did not account for the secondary impact on employment, gross domestic product, and other macroeconomic measures. The agencies often analyzed those macroeconomic impacts separately in what is called dynamic analysis, but did not include their feedback effects in official scores. An exception is immigration reform scoring: the effects on population and labor force are so direct that CBO and JCT did account for them.

In 2015, Congress adopted new budget rules that required dynamic scoring in certain cases. CBO and JCT now include macroeconomic feedback in official scores if proposed legislation has a sufficiently large budget impact (more than 0.25 percent of gross domestic product in any year in the budget window, equivalent to about \$50 billion in 2018) or if a budget committee chair requests it. These rules cover major tax and mandatory spending proposals; an unresolved question is how these rules might also apply to investments, like infrastructure and education, funded through discretionary spending.

For dynamic scoring, CBO and JCT prepare conventional, nondynamic scores of proposed legislation and then use economic models to identify any short- or long-run effects on the overall economy. The agencies then estimate the budget effects of those macroeconomic feedbacks. The agencies have long done dynamic analyses of major legislation, using multiple models and parameter estimates. A major difference with dynamic scoring is that it distills multiple estimates down to the single set of estimates the budget process requires.

Background

What are dynamic scoring and dynamic analysis?

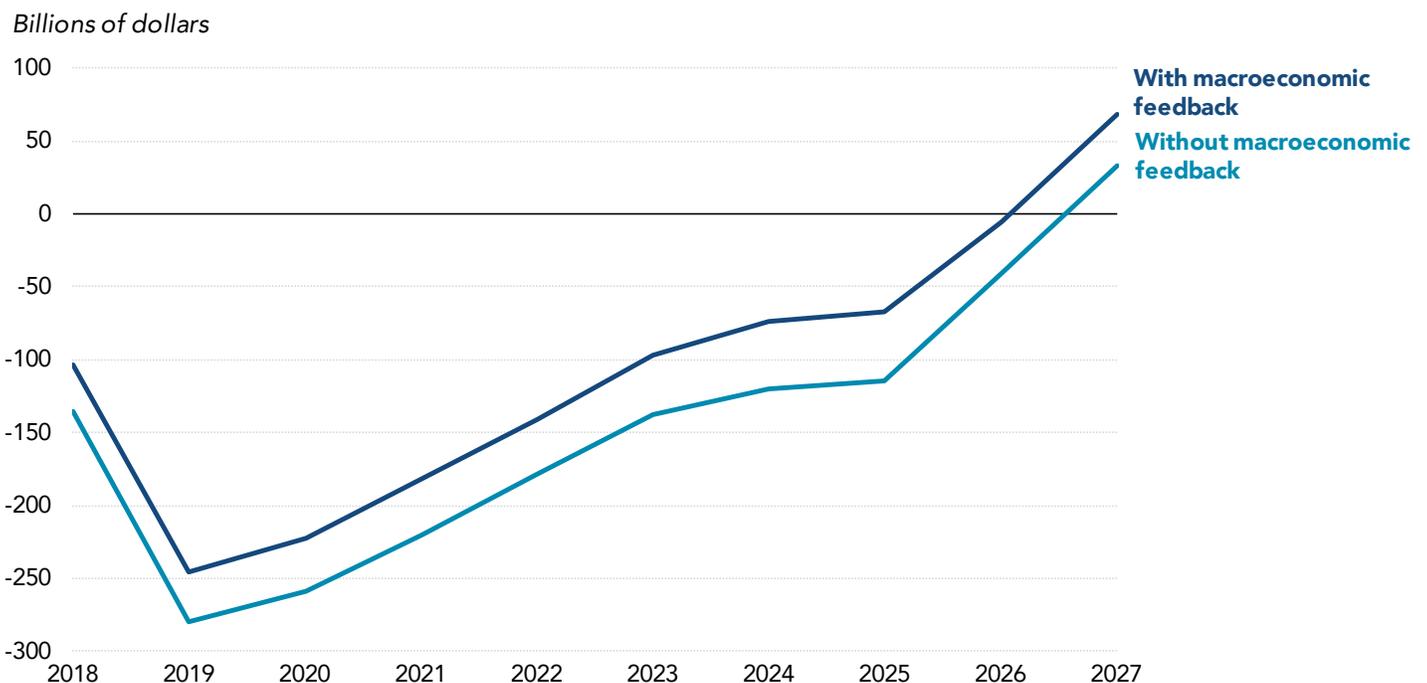
CASE STUDY: THE TAX CUTS AND JOBS ACT

As mandated by the new budgetary rules, JCT analyzed the potential budget effects of the Tax Cuts and Jobs Act (TCJA). Including macroeconomic feedback, they estimated that the legislation would increase cumulative deficits by \$1.1 trillion over the next decade. With conventional scoring, the estimated deficit increase would have been larger, \$1.5 trillion (figure 1).

That difference arises because the agency's best estimates—subject, they emphasize, to significant uncertainty—suggest that the TCJA will expand economic activity. In the short run the law gives people more after-tax income, which increases demand for goods and services, boosting the economy. In the longer run, lower marginal tax rates on returns to saving and investment incentives will push up saving, investment, and the capital stock. Until many provisions expire after 2025, TCJA also lowers marginal tax rates on labor income, encouraging people to work more. JCT estimated that TCJA would boost the level of output by 0.7 percent, on average, over 2018–27. The larger output means more taxable income, generating additional revenue over the period—an effect slightly offset by higher interest rates, which raise projected interest payments on the national debt.

FIGURE 1

Estimated Budgetary Effects of the Tax Cuts and Jobs Act By fiscal year



Source: Joint Committee on Taxation (2017).

Notes: Negative numbers correspond to an increase in the deficit.

The term "macroeconomic feedback" refers to the estimated effects on the federal budget that would arise from changes in economic output or other macroeconomic variables—such as changes in the number of hours that people work and in their aggregate compensation, which would change revenues, or changes in interest rates, which would change interest payments.

Background

What are dynamic scoring and dynamic analysis?

DYNAMIC ANALYSIS BY THE TAX POLICY CENTER

Beginning in 2016, the Urban-Brookings Tax Policy Center has been publishing dynamic analyses of the tax plans of both presidential candidates and Congress. Those analyses generally found only modest dynamic effects on estimated revenue, largely because any incentive effects of lower tax rates were offset by increases in budget deficits. Most recently, the Tax Policy Center analyzed the dynamic effects of the TCJA, finding an initial boost to the economy that dwindled over time due to expiring provisions and rising debt.

CONTROVERSY OVER DYNAMIC SCORING

In principle, dynamic scoring should not be controversial. Policymakers and the public want to know how policy changes may affect the budget, whether through direct behavioral responses or macroeconomic feedback. In practice, however, dynamic scoring has been controversial: Advocates for a policy often hope that dynamic scoring will make enacting it easier. Opponents, however, fear the advocates will be right.

In reality, the effect will be more muted. Dynamic scores for tax cuts will include the pro-growth incentive effects that advocates emphasize. But dynamic scores will also account for offsetting effects, such as higher deficits crowding out investment or people working less because their incomes rise. The net of incentive and offsetting effects often yields smaller growth projections than advocates hope. Indeed, dynamic scoring sometimes shows that tax cuts are more expensive than conventionally estimated, usually when pro-growth incentives are not big enough to offset anti-growth effects.

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Background

Do tax cuts pay for themselves?

TAXES AND THE ECONOMY

4/6

Q. Do tax cuts pay for themselves?

A. At current tax rates, the direct revenue loss from cutting tax rates almost always exceeds the indirect gain from increased activity or reduced tax avoidance. Cutting tax rates can, however, partly pay for itself. How much depends on how people respond to tax changes.

TAX RATES AND REVENUES

Economic activity generally responds to tax changes. If you increase the tax on cigarettes, people will smoke less and some will shift to illegal, untaxed cigarettes. Income taxes also trigger a response. If you increase the tax rate on wages and salaries, some people will work less. (Some will also work more to recoup lost after-tax income, but evidence suggests that the disincentive effect dominates.) Similarly, if you increase tax rates on returns to saving and investing, such as interest, dividends, and capital gains, some people will save and invest less. (Here too some people may save more to maintain the same after-tax savings, but evidence suggests that the disincentive effect, though small, still dominates.)

Meanwhile, people will also respond by trying to avoid the tax increase without changing their underlying work or saving behavior. For example, some may work off the books or reclassify earnings to lower-tax forms of income. And some will devote more effort to using tax-advantaged retirement savings, charitable deductions, and other tax breaks to cut their taxable incomes. All these responses reduce the potential revenue gain from increasing tax rates.

The same is true in reverse. If the government reduces tax rates on an activity, people will do more of it and will devote less effort to legal avoidance and illegal evasion. In principle, those responses could be so large that a tax increase would reduce revenue or a tax cut would increase revenue. In practice, however, these paradoxical effects are extremely rare. Cutting tax rates thus almost never pays for itself in full.

But cuts can and do pay for themselves in part. If a 10 percent reduction in a tax rate yields a 3 percent increase in taxable income, for example, revenues fall by only 7 percent. Taxpayer responses would thus pay for 30 percent of the tax cut. Real-world examples can be more complex; a change in income tax rates, for example, could affect both payroll and income tax receipts.

THE LAFFER CURVE

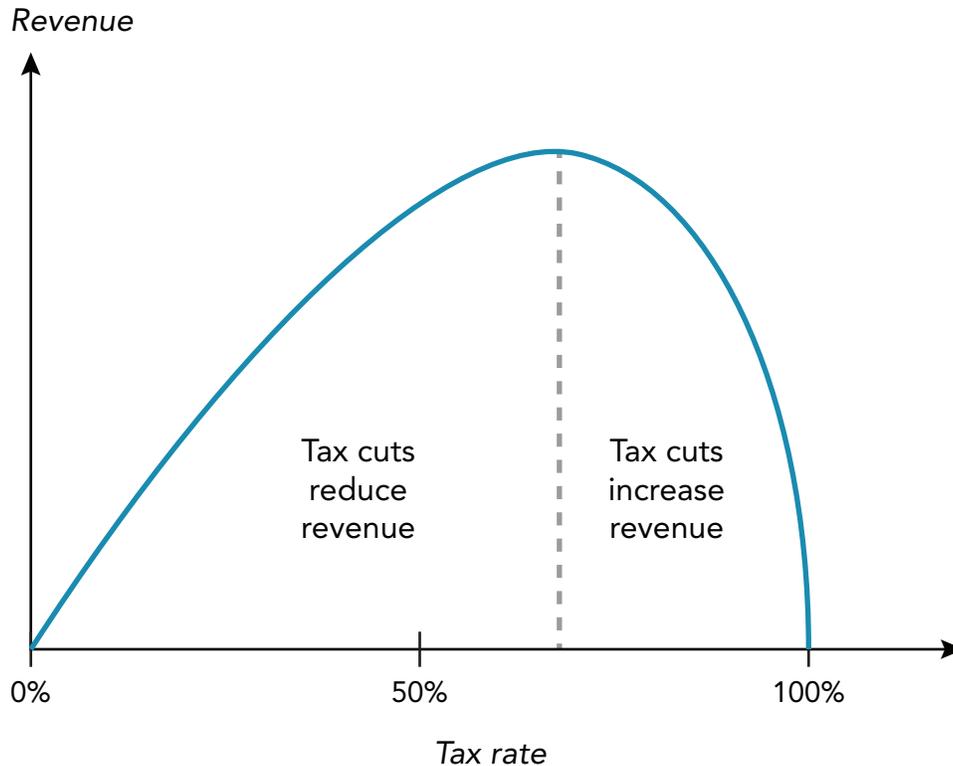
Economist Arthur Laffer helped popularize the idea that the revenue effects of tax changes depend on taxpayers' response. Figure 1 shows a hypothetical Laffer curve that tracks how revenues depend on the tax rate.

Background

Do tax cuts pay for themselves?

FIGURE 1

A Hypothetical Laffer Curve



We should expect that revenues would be very low when tax rates are close to either zero (when no revenue is raised regardless of the size of the tax base) or 100 percent (when there is an extreme disincentive to earn or report taxable income). At some point in between—65 percent in this hypothetical—revenues peak.

That much is uncontroversial. Debates often arise, however, about the shape of the Laffer curve and where on the curve current tax rates fall.

RESPONSIVENESS

A government's ability to raise revenues by raising tax rates is limited by how people respond. For example, a local government's ability to raise revenues by taxing hotel stays is limited by how easily potential hotel patrons can find accommodation in lower-tax communities. A state's ability to tax personal incomes, by the same token, is limited by taxpayers' willingness to move to lower-tax states to avoid the added levy. Likewise, the federal government's ability to tax corporations is limited by corporations' ability to move economic activity—in substance or merely in form—to lower-tax nations. And so on.

Responses depend on economic and policy conditions. A tax cut is a bigger deal, for example, when marginal tax rates are 70 percent than when they are 40 percent. Responsiveness also varies with the difficulty of changing behavior. Taxpayers can avoid capital gains taxes, for example, by holding appreciated stock and other assets until death or by donating them to charity. As a result, some analysts estimate that

Background

Do tax cuts pay for themselves?

the Laffer curve for capital gains taxes peaks around a 30 percent federal rate. If the government scaled back those tax-reduction opportunities, however, taxpayers would have less ability to defer or avoid capital gains taxes and the peak rate would be higher.

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Background

On what do economists agree and disagree about the effects of taxes on economic growth?

TAXES AND THE ECONOMY
5/6

Q. On what do economists agree and disagree about the effects of taxes on economic growth?

A. Economists generally agree that people and businesses respond to taxes and that large tax changes can move the economy. But economists have not (and probably cannot) pin down exactly how the economy works and how responsive people and businesses are to policy changes. As a result, economists often disagree about what models and parameters to use to analyze tax policies. Those scientific disagreements are sometimes amplified by value judgments about appropriate policy.

AREAS OF AGREEMENT

Economists often agree about the general effects of tax policy. For example, they agree that people respond to incentives, taxes can change incentives, and therefore taxes can change behavior. A tax on cigarettes reduces smoking and shifts some purchases to untaxed markets. The Earned Income Tax Credit brings more low-wage single parents into the workforce. Investors are less likely to realize capital gains when tax rates are high. Businesses shift their legal structures, and sometimes the location of their activities, to lower tax burdens. When faced with a scheduled tax increase or decrease, people and businesses move income into the lower-taxed periods. And so on.

Economists also generally agree that large tax changes can move the economy. For example, tax cuts can temporarily stimulate economic activity by boosting demand. In the longer run, a tax system with low rates and a broad base is more likely to promote prosperity than one with high rates and a narrow base.

Within those broad areas of agreement, economists often disagree about the size and importance of potential effects.

THE LIMITS OF ECONOMIC SCIENCE

In practice, economics blends scientific rigor with value judgments. The science helps us understand how the economy works. The philosophy influences how we draw inferences about what better and worse policies may be.

The science part is incomplete. There is no consensus, for example, on what assumptions to use to analyze the macroeconomic effects of tax policy. The Congressional Budget Office (CBO) and the Joint Committee on Taxation, for example, each use multiple models with different assumptions of how forward-looking

Background

On what do economists agree and disagree about the effects of taxes on economic growth?

people are (ranging from complete myopia to perfect foresight), how the United States connects to the global economy, and other dimensions.

Even within a single modeling framework, moreover, there is significant uncertainty about the size of potential effects. In modeling the short-run consequences of fiscal policy, for example, CBO estimates that the fiscal “multiplier” for a two-year tax cut to lower- and middle-income households is 0.3 to 1.5—a fivefold difference. Such wide ranges exist because the evidence is inadequate to pin down key parameters. And the resulting uncertainty is amplified because there are good reasons to believe that the economy has changed sufficiently to make the past an imperfect predictor of the future.

VALUE JUDGMENTS

For those reasons, there is substantial scope for scientific disagreement about the economic effects of tax policy. But that is not the only reason economists disagree. Value judgments can also color views about tax policy.

In an IGM Forum survey of leading economists, 90 percent either agreed or strongly agreed that one “reason why economists often give disparate advice on tax policy is because they hold differing views about choices between raising average prosperity and redistributing income.”

In principle, economists should be able to distinguish such value differences from objective analysis. In practice, however, the two blur. Opponents of redistributive policies often argue, for example, that the policies will have large negative side effects, while advocates often argue that those effects are small. Some of that difference is sincere. If you believe the negative side effects of a policy are large, it makes more sense to oppose it, and vice versa. However, the causality can also run the other way, with analysts emphasizing the estimates most consistent with their values.

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Background

How might the TCJA affect economic growth?

TAXES AND THE ECONOMY

6/6

Q. How might the TCJA affect economic growth?

A. The Tax Cuts and Jobs Act will likely boost economic output modestly in both the short and the longer run, but not all those gains will flow to the incomes of Americans.

The Tax Cuts and Jobs Act (TCJA) reduced tax rates on both business and individual income, and enhanced incentives for investment by firms. Those features most likely will raise output in both the short run and the long run, but most analysts estimate the effects will be modest and will offset only a portion of revenue loss from the bill (table 1).

TABLE 1
TCJA Growth Effects



	Effect on Size of GDP (%) ^a			Ten-year Dynamic Revenue Feedback (%)
	2018–20	2018–27	2027	
TCJA as written				
Barro and Furman (with crowd out)	-	-	0.2	16.7 ^b
Congressional Budget Office	0.6	0.7	0.6	31.0 ^c
International Monetary Fund	0.8	0.6	-0.1	-
Mertens	0.3–2.4	-	-	-
Moody's	0.4	0.3	0.4	-
Penn-Wharton Budget Model (low return)	-	-	0.6	7.7
Penn-Wharton Budget Model (high return)	-	-	1.1	19.1
Tax Foundation	0.9	2.1	2.9	69.5
Tax Policy Center	0.7	0.5	0	12.8
TCJA extended				
Barro and Furman (with crowd out)	-	-	1	20.5 ^b

Sources: Barro and Furman (2018); Congressional Budget Office (2018b); International Monetary Fund (2018); Mertens (2018); Zandi (2017); University of Pennsylvania (2017); Tax Foundation Staff (2017); Page et al. (2017).

(a) All figures are approximations

(b) Dynamic revenue effects do not incorporate crowd-out.

(c) Primary deficit effect.

Background

How might the TCJA affect economic growth?

Over the first year or two after enactment, the TCJA is likely to influence the economy primarily by raising demand for goods and services. Cuts to individual income taxes mean that most households will have more after-tax income, which they are likely to spend. In addition, provisions such as allowing the expensing of some capital investment are likely to increase investment spending by firms. As businesses see more of their goods being purchased, they will ramp up production, boosting economic output.

Those short-run effects are likely to be limited, however, for two main reasons. First, much of the tax cuts flow to higher-income households or to corporations, whose stock tends to be held by the wealthy. Higher-income households tend to spend less of their increases in after-tax income than lower-income households. Second, as of Fall 2018, unemployment is low and output is near its potential level. Therefore, any increase in demand will be offset by a tightening of monetary policy, as the Federal Reserve increases interest rates to avoid rising inflation.

In the longer run, the TCJA is likely to affect the economy primarily through increased incentives to work, save, and invest. Reductions in individual income tax rates mean that workers can keep more out of each additional dollar of wages and salary. That will encourage people to work more hours and draw some new entrants into the labor force. However, those reduced rates are scheduled to expire at the end of 2025; after that, there is little or no tax incentive to increase work.

Lower individual tax rates, a lower corporate tax rate, expensing of capital investment, and other reductions in business tax rates will increase the after-tax return to saving, encouraging households to save and reducing the cost of investment for firms. Those changes will lead to more investment, a larger capital stock, and higher output, by most estimates.

The increased investment must be financed by a combination of private saving, public saving (or government budget surpluses), and net lending from abroad (which could take the form of bond purchases, portfolio investment, or direct investment of physical capital). Most analysts, consistent with empirical research, estimate that private saving will rise only modestly in response to an increase in the after-tax rate of return. And the bill reduces public saving, by increasing the deficit. Therefore, much of any increase in investment from TCJA is likely to be financed by net foreign lending. That will increase the future interest and profit payments that flow to foreigners, reducing the resources available to Americans. For that reason, in examining the effects of TCJA it may be more illuminating to look at changes in gross national product (which subtracts that type of payment) rather than gross domestic product (which does not). For example, the Congressional Budget Office estimates that TCJA will boost GDP by 0.6 percent in 2027, but—taking account of increased payments to foreigners—GNP will be up by only 0.2 percent.

Background

How might the TCJA affect economic growth?

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