

Look beyond gross domestic product to assess the effects of tax reforms

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Abstract

Forty years of legislative experience has defined the scope of tax reform's ability to shape the economy. Despite theoretical claims to the contrary, the past eight major tax reforms have had only modest impacts on the size of the macroeconomy; our review of major tax reforms since 1986 reveals that the most comprehensively estimated impacts of those reforms have typically ranged between a 0.5 percent increase to a 0.5 percent decrease in the long-term level of output. By contrast, these reforms have exhibited the potential to substantially change the level of revenues, economic incentives and behavior, and the distribution of income. Future debates over tax reform should prioritize these elements over macroeconomic impact.

Introduction

Policymakers seeking to spur persistently faster economic growth sometimes make claims about the long-term benefits of fundamental tax reform, which economic theory often suggests can be a potent force over many years. However, the more tractable and plausible tax reforms that become law have historically offered weaker impacts on economic growth. After the fact, the evidence is that these politically feasible tax reforms and tax legislation that have already been enacted uniformly fail to spark even moderate expansions in the long-term size of the economy.

In broad strokes, tax reform has the potential to have long-term effects on the economy through three principal channels: (1) *changing the amount of tax revenue* collected by the federal government, (2) altering incentives to *improve economic efficiency or better align behavior* with societal goals, and (3) *redistributing income*. All three types of effects can affect—positively or negatively—long-term gross domestic product (GDP). Nonetheless, the major tax reforms enacted in recent decades historically have had extremely small effects on long-term aggregate output.

And yet the estimated effect on aggregate output often receives more attention than the significant effects on revenues, behavior, and income distribution. In our view, this is a mistake. During the forthcoming policy debate necessitated by the sunsets in the Tax Cuts and Jobs Act (TCJA), we believe that scrutiny of the inevitable estimates of GDP impacts should take a backseat to these other effects.

In this essay we intentionally center on the long-term impacts of tax reform rather than on the short-term effects that may come from tax policy shifts designed to stimulate the economy. When policymakers enact tax changes that take effect quickly, such as an immediate cut in tax rates, aggregate demand typically responds and can lead to short-term boosts to GDP. For example, during recent downturns, Congress legislated household tax rebates that boosted consumption and, subsequently, near-term growth.¹ We are setting near-term effects aside, and instead we focus on estimates of how enacted tax reforms have affected the productive capacity of the economy over the longer term.

Over the past four decades, Congress has substantially reformed the tax code eight times, most recently in 2017 with the TCJA. Our review of major tax reforms since 1986 shows that the most comprehensively estimated impacts of those reforms have ranged between a 0.5 percent increase to a 0.5 percent decrease in the long-term level of output. Although these estimates are highly uncertain, we walk through some practical reasons why the effect of tax reform on aggregate output is relatively small.²

We argue that, when tax reform is projected to have a minor impact on aggregate output in the long

run, considerations of those effects should be secondary relative to effects on federal tax revenues, changes in behavior to further broader societal goals, and distribution of income. It is particularly shortsighted if a focus on small negative aggregate economic effects precludes the passage of well-designed tax policy that would achieve other priorities.

Theoretical benefits of fundamental tax reform

In theory, fundamental changes to the tax code have the potential to dramatically affect the macroeconomy over the longer term through changes in incentives. Illustrative tax reforms that have been estimated to have such effects frequently lower marginal tax rates on business profits and labor income and expand what is taxable among those same sources of income or by raising taxes on consumption. Such changes increase the incentives to earn one more dollar from investing or working and allow the tax reform to be revenue neutral. The theoretical result would be a large increase in the level of economic output through higher labor supply and increased domestic or foreign capital.

In addition, tax reform that raises revenue and thus lowers the deficit would, by increasing national saving, put downward pressure on interest rates and increase funds that are available for private investment. Still, in the long run, lower tax rates that increase households' propensity to work and to save have no effect on long-term economic growth after households fully respond to the change in incentives. As a result, the economic effects of permanent changes in tax rates are typically well captured by estimated effects within a decade of enactment.

While empirical analyses of proposed or enacted tax reforms tend to find small long-term impacts on economic output, purely theoretical models that simulate the potential impact of illustrative reform can show large changes in output because of changes in incentives to work and invest. For example, Auerbach (1996) simulated the impact of six major illustrative tax reforms and reported that fundamental tax reform could change medium-term output per capita by 1.6 percent to 9.0 percent. Altig et al. (2001) performed a similar exercise to measure the impact of five major hypothetical tax reforms, ranging from a flat tax to a consumption tax; they showed simulated medium-term gains in the level of national income of between 0.5 percent and 6.3 percent.³

The tax reforms that these studies simulated were more radical than any legislation that Congress has passed and most legislation that has been seriously proposed. For example, in the case of the Altig et al. (2001) study, achieving the highest simulated medium-term growth is associated with a proportional

consumption tax, which would require eliminating all tax-base reductions (including the standard deduction and the personal exemption, itemized deductions, and tax preferences for saving), flattening all tax rates (including the elimination of the progressive rate schedule on wages and capital), and implementing full expensing on new investment. To our knowledge, such a drastic reform has never been tried in a major economy.

Not surprisingly, reforms that are more politically feasible are often estimated to have much smaller effects. For example, in the Altig et al. (2001) study, the authors simulate a flat tax reform that, in addition to flattening tax rates and eliminating most tax preferences, offers substantial transition relief to capital owners in order to buffer the challenges of changing depreciation rules on existing assets. Under that scenario, which might be considered more politically feasible than other modeled options, the long-term growth impact falls to almost zero.

A clear lesson we take from these simulations is that accounting for political feasibility significantly reduces the long-term growth impacts of tax reform. This is consistent with our findings, which we detail in the next section, that empirical estimates of the aggregate long-term economic effects of enacted tax reforms since 1986 are generally modest.

In measuring the impact of tax reform on growth, it is worth considering that the effects of tax reform on GDP can be different from its effects on gross national product (GNP), which is a better measure to assess the long-term impacts of tax reform on U.S. households. Relative to GDP, GNP includes the income earned by U.S. residents abroad and, more importantly, excludes the income earned in the U.S. by foreigners. As explained by Page and Gale (2018), when assessing the effects of major tax reform, it is critical to consider the distinction between GDP and GNP. For example, if tax cuts raise GDP by, in part, inducing higher levels of foreign-financed capital, the net returns on that capital—profits, dividends, and interest—will subsequently rise as well. Page and Gale estimate that, while the TCJA boosted the level of GDP by 0.5 percent after 10 years, it boosted the level of GNP by only 0.1 percent over the same period.

A separate analytical issue concerns reforms' impact on welfare. A guiding principle is that tax reform should increase welfare, which is sometimes achieved even as the same tax reform lowers GDP. While it is much more difficult to measure and interpret changes in well-being or utility, it is critically important to do so. For example, reform that encourages businesses to alter their practices in order to reduce environmental pollution might reduce GDP while simultaneously improving overall welfare. In addition, tax reform that reduces households' financial resources and renders more people financially desperate can increase work hours and GDP but ultimately leave households worse

off. Because utility includes both the benefits of receiving additional income and the costs of producing that income, tax reforms' impact on households tends to be proportionally smaller than its impact on GDP.

In sum, it is a useful policy goal to implement tax reform that institutes better incentives to work and save. That being said, because the U.S. tax system weighs many competing goals, achieving a highly efficient system through lump-sum taxes that do not dampen incentives to work or invest would require abandoning many other competing objectives. Moreover, proposed tax reform that stands a chance of passage will very likely be projected to have a small effect on aggregate economic output. Equally likely, the effects that should be a greater focus would be the effects on the distribution of income, whether or not the proposed changes help to further noneconomic goals, and the estimated effects on tax revenues.

How should incentive effects of higher tax rates be weighed against the effects of changes in tax revenue? Much of the research on tax reform, like the Altig et al. (2001) and Auerbach (1996) studies, is on revenue-neutral plans. In practice, however, tax changes often increase or decrease revenue. Revenue-losing tax reform can improve incentives but also increase public borrowing, raise interest rates, increase the risk of a fiscal crisis, and thus overall be a net negative for growth. Conversely, revenue-raising tax reform can have extra benefits in terms of debt and deficit reduction.

Indeed, one of the principal benefits from tax reform can be to raise revenue and lower budget deficits, which works to increase resources available for private investment. To the degree that the same policies that increase revenue also reduce incentives to work and invest, the positive and negative economic benefits of the tax reform partially offset each other. In addition, and perhaps more importantly given projected federal borrowing under current law, a reduction in deficits reduces the risk of a financial crisis jumpstarted by concerns over fiscal sustainability. But the benefits of lower deficits are less tangible to taxpayers than the benefits of low tax rates, which makes it hard to gain support for tax increases as a deficit-reduction tool.

Smaller deficits and lower public debt, all else equal, drive down interest rates and boost private investment over time. As one of us wrote in a previous piece, "The empirical link between higher debt and higher interest rates is well-established, as is the impact between higher interest rates and lower private-sector investment" (Harris and Looney 2018, 10). These higher interest rates depress private investment. As the Congressional Budget Office (CBO) reports, "In CBO's assessment, every additional dollar of deficit-financed spending reduces private investment by 33 cents" (CBO 2023a, 5). Nonetheless, the aggregate economic effects of such crowding-out of private investment are generally modest. For example, CBO

recently published an analysis showing that, if debt as a share of GDP after 30 years was a staggering 77 percentage points higher than in the baseline, projected GNP per person would rise by roughly \$28,000 instead of \$32,000 (CBO 2022). In other words, through this channel, a very large change in federal borrowing results in a relatively modest change in income.

When tax reform increases tax revenues, it often is estimated to lower aggregate economic output over some time horizon. That is the case because politically-feasible tax reform that increases revenue typically raises marginal tax rates on profits and labor income. Revenue increases from exclusively lump-sum-style taxes or consumption taxes, which have no such incentive effects, are generally not politically feasible. For well-designed tax policy, the positive economic effects of lower deficits ultimately offset the negative incentive effects from higher marginal rates. But the horizon over which output is lower can be protracted if one assumes, as the empirical findings suggest (CBO 2023a), that the main benefit of lower deficits is a relatively modest increase in private investment.

However, the degree to which greater federal revenues help to stabilize the fiscal trajectory may have additional positive effects that are more difficult to estimate. Many observers have raised concerns that a perpetually and steeply rising debt path increases the risk of a fiscal crisis over the long term (see, e.g., Auerbach and Gale 2014; Furman and Summers 2020). A fiscal crisis could instigate a severe economic downturn—by leading to sharply higher interest rates and a lower value of the U.S. dollar, by leading to sharp cuts in federal spending and increases in tax rates, or by doing both. Incorporating both the effects of higher private investment and reduced macroeconomic risk changes the calculus around a deficit-reducing tax reform: Modest negative economic effects of higher tax rates may ultimately be a reasonable price to pay for reduced risk. In that regard, reducing risk can be thought of akin to other policy goals attached to tax policy. Those include the myriad goals of reducing post-tax and -transfer income inequality, increasing incentives to invest in and consume low-emissions energy, and reducing tobacco use.

Eight previous tax reforms have had a modest effect on GDP

We next review eight major tax reforms since 1986 and the contemporaneous economic analyses of the aggregate economic effects; our intention is to illustrate that major tax reforms in recent decades were expected to have a modest effect on aggregate economic output. The unifying lesson from this review is that, over the past four decades, Congress has failed to pass a single tax law that *a priori* had an appreciable

impact on economic growth or the productive capacity of the U.S. economy. This lesson applies across a range of tax reforms that had markedly different revenue and incentive impacts and across a wide range of macroeconomic models with varying specifications and assumptions. In fact, as discussed below, the estimated effect of most major tax reforms since 1986 on long-run economic output (often meaning the effect after 10 years) has generally ranged between a 0.5 percent increase and a 0.5 percent decrease, with few exceptions.⁴

But, even using the full range of tax reforms, the estimated economic effects have been modest in the context of underlying economic growth. For example, the full range we report below on the economic effects of the Omnibus Budget Reconciliation Act of 1993 includes an estimated reduction in the level of GDP in the long run by 1.5 percent relative to a counterfactual with no tax reform. The level of real GDP grew nearly 40 percent from 1993 to 2003, which shows that other factors that influenced economic growth in the decade following tax reform were much more significant.

Table 1 lists the eight major tax reforms since 1986 that we examine and summarizes their major tax provisions. Table 2 summarizes estimated effects on tax revenues from the Office of Tax Analysis and CBO. Since the effects on tax revenues are in nominal dollars, we also report the total revenue effects as a share of GDP, to make it easier to compare across various tax reforms. For example, the Omnibus Budget Reconciliation Act of 1990 was estimated to raise \$158 billion in revenue over five years, and the Jobs and Growth Tax Reconciliation Act of 2003 was estimated to lower revenues by \$298 billion over five years, but each act totaled about 0.5 percent of GDP over the respective five-year periods.

Below we summarize a range of economic analyses of those eight tax reforms. The estimated effects on aggregate economic output after five or 10 years are often less than 0.5 percent in magnitude; some researchers even disagree on the sign of the effect. Only a handful of estimates are larger than 1 percent, and those estimates are all from the Tax Foundation (Greenberg, Olson, and Entin 2016). We focus on the analyses of the tax provisions and in some cases are able to effectively exclude the estimated economic effects of simultaneous changes to spending policy. But, in other cases, we are not able to parse the effects. For example, the reduction in deficits from the Omnibus Budget Reconciliation Act of 1993 was accounted for by both higher revenues (two-thirds of the deficit reduction) and lower spending (one-third). The estimated economic effect from CBO, an increase in GDP of 0.5 percent after five years, incorporates the positive effects on output from both sources of deficit reduction.

TABLE 1

Description of eight major tax reforms since 1986

Act	Date enacted	Major changes
Tax Reform Act	Oct. 1986	<ul style="list-style-type: none"> Lowered individual and corporate tax rates Eliminated a range of deductions Expanded the tax base
Omnibus Budget Reconciliation Act	Nov. 1990	<ul style="list-style-type: none"> Increased individual income tax rates for very high earners and reduced rates for moderately high earners Increased payroll taxes Reformed aspects of the taxation of Unemployment Insurance and Supplemental Security Income Altered Medicare and Medicaid Altered taxation related to mortgage financing Raised revenue through a variety of changes such as excise tax increases on gasoline and other fuels
Omnibus Budget Reconciliation Act	Aug. 1993	<ul style="list-style-type: none"> Increased tax rates on individuals Repealed the income cap on payroll taxes to fund Medicare Increased the taxable portion of Social Security benefits Permanently extended the phase-out of personal exemptions and limit on itemized deductions
Taxpayer Relief Act	Aug. 1997	<ul style="list-style-type: none"> Reduced tax rates Introduced some of the present-standing tax credits today, namely the Child Tax Credit, the Education Savings Account, and the Roth IRA Reduced capital gains taxes, including for housing
Economic Growth and Tax Relief Reconciliation Act	Jun. 2001	<ul style="list-style-type: none"> Reduced individual income tax rates Included phase-down and eventual one-year elimination of the estate tax Introduction of marriage penalty relief Made the Child Tax Credit more generous
Jobs and Growth Tax Reconciliation Act	May 2003	<ul style="list-style-type: none"> Lowered tax rates on capital gains and dividends Accelerated 2001 tax cuts
American Taxpayer Relief Act	Jan. 2013	<ul style="list-style-type: none"> Extended many of the lower tax rates for those with income below a certain threshold (\$400,000 for individuals) that were set to increase Reformed tax deductions Extended the American Opportunity Tax Credit, the Child Tax Credit, and the Earned Income Tax Credit
Tax Cuts and Jobs Act	Dec. 2017	<ul style="list-style-type: none"> Reduced individual income tax rates Reduced corporate tax rates and changed international corporate tax Increased the Child Tax Credit Diminished scope of the estate tax Doubled standard deduction and eliminated personal exemptions

Source: Information regarding the tax acts accessible through congress.gov.



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1986: Tax Reform Act

Economic effect

- -0.2 percent long-run change in GDP, Tax Foundation (Greenberg, Olson, and Entin 2016)
- Reduction in real GNP of 0.3 percent after five years and long-run increase in GNP of 0.3 percent to 0.7 percent, Data Resources Incorporated (Brinner 1986)
- -0.5 percent change in GNP after five years, Wharton Econometrics (Owen and Kenward 1988)

- 0.4 percent gain in GNP in the long run, Washington University Macro Model (Prakken, Varvares, and Meyer 1991)
- 0.0 percent to 0.3 percent increase in GNP after three years, CBO (Ribe 1987)

Additional analysis

- On the distributional consequences of the act, CBO (Ribe 1987) reported that the tax burden for families with children in the lowest-income quintile became more negative (meaning the subsidy became larger) because of expansions made in the Earned Income Tax Credit (EITC).

TABLE 2

Estimated effects on revenues from tax reforms since 1986 in dollars (billions) and share of GDP

Act	Office of Tax Analysis		Congressional Budget Office								
	4-year total		5-year total		10-year total		5th year		10th year		
	Dollars	Share of GDP	Dollars	Share of GDP	Dollars	Share of GDP	Dollars	Share of GDP	Dollars	Share of GDP	
Tax Reform Act, 1986	-1	0.0	-	-	-	-	-	-	-	-	-
Omnibus Budget Reconciliation Act, 1990	127	0.5	158	0.5	-	-	39	0.5	-	-	-
Omnibus Budget Reconciliation Act, 1993	188	0.6	241	0.6	-	-	59	0.7	-	-	-
Taxpayer Relief Act, 1997	-53	0.1	-80	0.2	-241	0.2	-15	0.1	-	-	-
Economic Growth and Tax Relief Reconciliation Act, 2001	-328	0.7	-386	0.7	-1,139	0.9	-100	0.8	-176	1.2	-
Jobs and Growth Tax Reconciliation Act, 2003	-225	0.5	-298	0.5	-324	0.2	-13	0.1	2	0.0	-
American Taxpayer Relief Act, 2013	-1,283	1.8	-1,495	1.7	-3,639	1.8	-337	1.8	-497	2.0	-
Tax Cuts and Jobs Act, 2017	-	-	-1,156	1.0	-1,690	0.7	-203	0.8	-18	0.1	-

Note: Share of gross domestic product (GDP) is calculated as the total dollar amount, in absolute value, as a percentage of total fiscal year GDP in the period specified. For GDP beyond fiscal year 2022, the share is calculated using Congressional Budget Office (CBO) GDP projections published in February 2023. In cases where there is no entry, the agency did not publish a revenue estimate.



Source: Nominal fiscal year GDP through 2022 from Haver Analytics. Fiscal year GDP projections from CBO 2023b. Office of Tax Analysis (OTA) estimates from OTA 2006; 2011. CBO estimates from CBO 1990; 1993; 2000; 2001; 2003; 2013; 2018.

- The improved tax neutrality in the treatment of capital, which improved the allocation of capital and raised productivity, led to a modest increase in the size of the economy (but no long-term effect on GDP growth). CBO noted, “Greater neutrality, and the associated increases in output, are among the most prominent reasons why many consider that act a significant improvement in tax policy” (Ribe 1987, 37).

1990: Omnibus Budget Reconciliation Act

Economic effect

- No quantified effect of the tax reform by CBO. However, CBO reported that the increase in national saving should boost long-run economic growth (Reischauer 1991).

1993: Omnibus Budget Reconciliation Act

Economic effect

- Close to 0.5 percent increase in GDP after five years (CBO 1993)
- -1.5 percent long-run change in GDP, Tax Foundation (Greenberg, Olson, and Entin 2016)

Additional analysis

- About the economic effects of the act, CBO wrote, “National saving will not increase dollar for dollar with deficit reduction, since reductions in private saving will offset some of the improvement coming from the new policies. The higher taxes in OBRA-93 will come partly from reduced consumption and partly from reduced saving. Following a number of statistical studies, CBO assumes in its projections that reduced private saving will offset about 30 percent of the reduction in the deficit compared with the baseline before OBRA-93. Saving from deficit reduction could also be spent on reducing net borrowing from abroad rather than on domestic investment. As a result, private domestic investment in plant, equipment, and inventories would rise, but by much less than a dollar for every dollar’s worth of deficit reduction” (CBO 1993, 18–19).
- On the distributional consequences of the act, the Tax Foundation reported that the act increased the tax burden on higher income earners through changes to the individual income tax (Hall 1993). The act also increased the burden on lower-income earners because they are also subject to the gas tax increase and because those earners see some reduction in compensation as a result of the tax increases affecting business (Tax Foundation n.d.).

- CBO (1993) estimated that over 80 percent of the net tax increase from the act was to be paid by families with incomes of at least \$200,000, and over 90 percent by families with incomes of at least \$100,000.

1997: Taxpayer Relief Act

Economic effect

- 0.8 percent long-run change in GDP, Tax Foundation (Greenberg, Olson, and Entin 2016)
- No quantified effect of the tax reform by CBO. (In contrast, CBO [1997] did quantify the effect of spending reductions that were put in place at the same time, which significantly reduced the deficit. CBO [1997] attributed about one-third of its 3.7 percent upward revision to real GDP in 2007 to lower deficits.)

Additional analysis

- In CBO's estimate, the act reduced average effective tax rates on capital by a few percentage points while also potentially making the allocation of capital more efficient. However, the act increased the complexity of the tax code and increased incentives to shelter income from tax; CBO (2000, 45) noted, "Greater compliance costs could easily offset any benefits from increased capital formation."
- CBO (2000) estimated that the act had offsetting effects on marginal tax rates on labor income and thus would have little effect on incentives to work.
- On the distributional consequences of the act, greater tax credits for families with children account for about 70 percent of the gross revenue reduction. On average, income groups aside from the lowest-income group were expected to see the same small reduction in effective income tax rates. The effective income tax rate for the lowest-income group was roughly unchanged (CBO 2000).

2001: Economic Growth and Tax Relief Reconciliation Act

Economic effect

- An increase in real GDP in 2011 smaller than 0.5 percent (CBO 2001)
- 2.3 percent long-run increase in GDP, Tax Foundation (Greenberg, Olson, and Entin 2016)

- 1.0 percent increase in GDP by 2004 from only the positive incentive effects, Auerbach (Congressional Research Service [CRS] 2008)
- -0.3 percent change in real GDP in 2011 (Potter and Gale 2002)

Additional analysis

- CBO (2001, 34) explained the small impact on aggregate output, reporting, "The cumulative effects of the new tax law on the economy are uncertain but will probably be small. Labor supply may rise modestly as a result of the reductions in marginal tax rates ... ; however, national saving may fall."
- Potter and Gale (2002) estimated that the reduction in public saving reduced GDP by 1.6 percent by 2011 but that higher capital inflows partially offset that reduction by increasing GDP by 0.4 percent. The incentive effects on labor and private saving increased GDP by 1.0 percent.

2003: Jobs and Growth Tax Reconciliation Act

Economic effect

- 2.3 percent long-run increase in GDP, Tax Foundation (Greenberg, Olson, and Entin 2016)
- 0.2 percent to 0.9 percent increase in GDP after five years and reduction in GDP of 0.1 percent to 0.2 percent after 10 years, Joint Committee on Taxation (JCT; CRS 2008)
- Reduction of 0.2 percent in GDP in the first five years and 0.7 percent reduction in years five to 10, CBO (CRS 2008)
- 0.3 percent reduction in GDP by 2017, Macroeconomic Advisers (CRS 2008)

Additional analysis

- CBO also estimated the economic effects of the act assuming other policies would also be implemented to keep budget deficits from increasing. CBO estimated that the act would reduce GNP by between 0.6 percent and 2.0 percent from 2009 to 2013 if financed by lower government spending (CRS 2008). However, the act would increase GNP between 0.3 percent and 1.4 percent over that period if, instead, deficits are reduced by higher taxes after 2013. Economic output is higher in this model because people are assumed to work more through 2013 in anticipation of higher taxes on earners after 2013.

- CBO estimated the joint economic effects of 2001 and 2003 legislation: “The revenue measures enacted since 2001 will boost labor supply by...up to 0.2 percent from 2009 to 2013... But the tax legislation will probably have a net negative effect on saving, investment, and capital accumulation over the next 10 years... The tax laws’ net effect on potential output is uncertain during the first five years of the 2004–2013 projection period but will probably be negative in the second five years. However, that impact is small, especially compared with the overall uncertainty of the forecast. According to the models, the legislation could boost the level of potential GDP by as much as 0.3 percent or reduce it by as much as 0.1 percent over the years 2004 to 2008. From 2009 to 2013, it could reduce the level of potential GDP by about 0.4 percent” (CBO 2003, 45).

2012: American Taxpayer Relief Act

Economic effect

- Suggested reduction in GDP no larger than 0.2 percent in 2022 (CBO 2013)

Additional analysis

- In its projection released after the act was passed, CBO revised downward its projection potential GDP in 2022 by roughly 0.5 percent, attributing that change primarily to data revisions (CBO 2013). CBO also mentioned the negative economic effect of the upward revision to federal borrowing, 80 percent of which is owed to the tax reform. By that logic, we attribute up to 40 percent of the downward revision in potential GDP to the tax reform.
- The Tax Foundation (Entin 2013) modeled the economic effects of the act, which extended some lower tax rates set to expire, relative to a counterfactual that extended all of the lower tax rates. Relative to that counterfactual, they estimated the act would lower GDP by 1.5 percent after 10 years.

2017: Tax Cuts and Jobs Act

Economic effect

- 0.6 percent increase in GDP in 2027 (CBO 2018)
- 0.2 percent to 0.4 percent in 2027 (Barro and Furman 2018)
- 0.4 percent increase in GDP in 2027, Moody’s Analytics (CBO 2018)

- 0.2 percent increase in GDP in 2027, Macroeconomic Advisers (CBO 2018)
- Roughly no increase in GDP in 2027, Tax Policy Center (CBO 2018)
- 0.1 percent decrease in GDP in 2027, International Monetary Fund (CBO 2018)
- 0.1 percent to 0.2 percent increase in GDP in 2027, JCT (CBO 2018)
- 0.7 percent increase in GDP in 2027, Goldman Sachs (CBO 2018)
- 0.6 percent to 1.1 percent increase in GDP in 2027, Penn Wharton Budget Model (CBO 2018)
- 2.9 percent increase in GDP in 2027, Tax Foundation (CBO 2018)

Additional analysis

- JCT (2017) estimated that, for 2025, the act would increase federal taxes for taxpayers earning up to \$40,000 per year and decrease federal taxes for higher-income taxpayers.

Conclusion

Tax reform has an empirically-established record of changing economic behavior. Tax reform has sharply altered the level and composition of federal revenues, changed firm- and household-level economic incentives and behavior, and adjusted the after-tax distribution of income.

While tax reform can influence behavior across a sweeping range of decisions, in four decades of major tax legislation it has not in practice meaningfully affected the size of the aggregate economy. The growth impacts of major tax reforms tend to be small—researchers at times even disagree whether that small effect is positive or negative—and at times become even smaller when measured using alternative measures of output. In other words, politically-feasible tax reform should not be counted on to change the long-term course of the U.S. economy, as other considerations are more important.

The Tax Reform Act of 1986 offers an illustrative example. This act, which some consider to be the gold standard of tax reform since it expanded the tax base while lowering tax rates, had a close to negligible impact on growth. This act did affect other aspects of the economy, however—including, in particular, decisions about how to organize businesses and how to allocate capital. Another key example is the TCJA of 2017. The TCJA had a profound impact on the distribution of income. For example, it increased the short-term after-tax income of the top quintile of taxpayers by 2.9 percent, but has had close to no impact on the size of the economy (Tax Policy Center 2017).

The lesson for policymakers is clear: In most circumstances tax reform should not be primarily debated on how it affects the level of GDP in the long run, as reflected in macroeconomic models. Instead, tax reform should be evaluated primarily on its consequences for revenue, social and economic goals aside from aggregate output, and income distribution.

Because the U.S. tax code impacts virtually every part of the economy—from housing to health care to the labor market—politically-achievable tax reform offers a critical avenue for achieving a wide array of legislative priorities, but does not offer an avenue to significantly affect economic growth. That said, tax reform’s consequences for revenues do indeed have important consequences for the U.S. economy that should be a priority for policymakers. If an increase in revenues is used to reduce future deficits, the risk of a fiscal crisis stemming from soaring public debt is reduced, policymakers will perceive more flexibility in using fiscal resources to address crises, and resources will be more equitably distributed across generations.

Endnotes

1. The literature suggests that approximately 70 percent of each dollar of tax rebate to households is spent in the subsequent eight quarters, with typically around half of this spending occurring in the first two quarters following receipt and the other half of the increased spending occurring in the following six quarters (Edelberg and Sheiner 2020).
2. In a few instances, researchers estimated an effect closer to 1.0 percent. In addition, estimates from the Tax Foundation (Greenberg, Olson, and Entin 2016), which incorporates strong assumptions about the economy’s sensitivity to tax rates, were generally larger than estimates from other sources.
3. Turning to shorter-term effects of tax reform, an empirical study by Romer and Romer (2010) estimates large changes from tax reform within three years. However, because they estimate effects on inflation and unemployment, the authors appreciate that they might be finding demand-driven responses rather than effects of changes in incentives to work and invest.
4. The exceptions are generally estimates from the Tax Foundation (Greenberg, Olson, and Entin 2016), which range from –1.5 percent to 2.9 percent. However, the Tax Foundation’s modeling assumes a level of sensitivity to tax rates on the far end of the empirical literature and, unusually, assumes no effect of deficits on private investment because higher deficits would be fully financed by higher domestic saving and greater borrowing from abroad. For details, see three summaries of the major differences between other modeling approaches and the Tax Foundation’s, from 2016 (Davis 2016), 2017 (Peter G. Peterson Foundation 2017), and 2023 (Congressional Research Service [CRS] 2023).

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Forty years of legislative experience has defined the scope of tax reform’s ability to shape the economy. Despite theoretical claims to the contrary, the past eight major tax reforms have had only modest impacts on the size of the macroeconomy; our review of major tax reforms since 1986 reveals that the most comprehensively estimated impacts of those reforms have typically ranged between a 0.5 percent increase to a 0.5 percent decrease in the long-term level of output. By contrast, these reforms have exhibited the potential to substantially change the level of revenues, economic incentives and behavior, and the distribution of income. Future debates over tax reform should prioritize these elements over macroeconomic impact.

Estimated effects on revenues from tax reforms since 1986 in dollars (billions) and share of GDP

Act	Office of Tax Analysis		Congressional Budget Office								
	4-year total		5-year total		10-year total		5th year		10th year		
	Dollars	Share of GDP	Dollars	Share of GDP	Dollars	Share of GDP	Dollars	Share of GDP	Dollars	Share of GDP	
Tax Reform Act, 1986	-1	0.0	-	-	-	-	-	-	-	-	-
Omnibus Budget Reconciliation Act, 1990	127	0.5	158	0.5	-	-	39	0.5	-	-	-
Omnibus Budget Reconciliation Act, 1993	188	0.6	241	0.6	-	-	59	0.7	-	-	-
Taxpayer Relief Act, 1997	-53	0.1	-80	0.2	-241	0.2	-15	0.1	-	-	-
Economic Growth and Tax Relief Reconciliation Act, 2001	-328	0.7	-386	0.7	-1,139	0.9	-100	0.8	-176	1.2	-
Jobs and Growth Tax Reconciliation Act, 2003	-225	0.5	-298	0.5	-324	0.2	-13	0.1	2	0.0	-
American Taxpayer Relief Act, 2013	-1,283	1.8	-1,495	1.7	-3,639	1.8	-337	1.8	-497	2.0	-
Tax Cuts and Jobs Act, 2017	-	-	-1,156	1.0	-1,690	0.7	-203	0.8	-18	0.1	-

Note: Share of gross domestic product (GDP) is calculated as the total dollar amount, in absolute value, as a percentage of total fiscal year GDP in the period specified. For GDP beyond fiscal year 2022, the share is calculated using Congressional Budget Office (CBO) GDP projections published in February 2023. In cases where there is no entry, the agency did not publish a revenue estimate.

Source: Nominal fiscal year GDP through 2022 from Haver Analytics. Fiscal year GDP projections from CBO 2023b. Office of Tax Analysis (OTA) estimates from OTA 2006; 2011. CBO estimates from CBO 1990; 1993; 2000; 2001; 2003; 2013; 2018.



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