Optimal Top Tax Rates: A Review and Critique

Alan Reynolds

Several prominent economists who advocate more egalitarian use of taxes and transfers to redistribute income have used selective (and arguably low) estimates of the "elasticity of taxable income" (ETI) to suggest that U.S. individual income tax rates of 73–83 percent at high incomes would be "socially optimal" in the sense of maximizing revenue available for political redistribution.

Proponents of major increases or reductions in U.S. marginal tax rates have long cited historical evidence to support their policy recommendations. Elasticity of taxable income estimates are simply a relatively new summary statistic used to illustrate observed behavioral responses to past variations in marginal tax rates. They do so by examining what happened to the amount of income reported on individual tax returns, in total and at different levels of income, before and after major tax changes.

The ETI compares the percentage change in reported taxable income (i.e., income after deductions) to the percentage change in the net-of-tax rate (i.e., the portion of marginal income a taxpayer is allowed to keep, which equals 1 minus the marginal tax rate). Thus, if the marginal tax rate decreases from 60 to 40 percent, the net-of-tax share will increase from 40 to 60 percent and taxpayers will have an incentive to earn and/or report more taxable income, other things being constant. ETI measures the strength of that response.

Cato Journal, Vol. 39, No. 3 (Fall 2019). DOI: 10.36009/CJ.39.3.8.

Alan Reynolds is a Senior Fellow at the Cato Institute. He thanks David R. Henderson, Pierre Lemieux, and an anonymous referee for helpful comments on an earlier version of this article.

For example, if a reduced marginal tax rate produces a substantial increase in the amount of taxable income reported to the IRS, the elasticity of taxable income is high. If not, the elasticity is low. ETI incorporates effects of tax avoidance as well as effects on incentives for productive activity such as work effort, research, new business start-ups, and investment in physical and human capital.

ETI estimates, in turn, have been used by economists to estimate various concepts of an ideal or "optimal" tax rate within a linear flat rate tax system or a nonlinear progressive tax system. What is optimal from the point of economic efficiency or incentives, however, is not necessarily optimal if the government's priority (or the economist's priority) is to maximize tax revenue collected from high incomes, ostensibly for the purpose of redistributing that extra revenue to the poor.

To estimate a redistributive-optimal or revenue-maximizing top tax rate, Diamond and Saez (2011: 171) claim that, if the relevant ETI is 0.25, then the revenue-maximizing top tax rate is 73 percent. Such estimates, however, do not refer to the top federal income tax rate, as is frequently implied (Krugman 2011), but to the combined marginal rate on income, payrolls, and sales at the federal, state, and local level. I find that, with empirically credible changes in parameters, the Diamond-Saez formula can more easily be used to show that top U.S. federal, state, and local tax rates are already too high rather than too low. By also incorporating dynamic effects—such as incentives to invest in human capital and new ideas—more recent models estimate that the long-term revenue-maximizing top tax rate is between 22 and 49 percent, and one study (Judd et al. 2018: 1) finds that, in certain cases, the optimal marginal tax rate on the top income is negative, which was also the conclusion of Stiglitz (1987).

Piketty, Saez, and Stantcheva (2014: 233) likewise claim the relevant ETI is only 0.2, which lifts their redistributive-optimal top tax rate to 83 percent (effectively on all income—including corporate income, dividends, and capital gains—to minimize opportunities for tax avoidance). But they add that "the optimal top tax rate . . . actually goes to 100 percent if the real supply-side elasticity is very small" (ibid.: 232).

They support the claim that 83 percent top tax rates on all income would be harmless by comparing *percentage point* changes in top individual tax rates from about 1960 to 2009 among 18 OECD countries with their per capita GDP growth rates. Yet percentage point changes

from 1960 to 2009 cannot tell us whether tax rates were high or low during most of the many years between those distant end points. Piketty, Saez, and Stantcheva's comparison of long-term GDP growth rates with percentage point changes in top tax rates simply shows that countries like Germany and Japan reduced top tax rates to 50–53 percent in the 1950s, decades before the United States and United Kingdom did the same. If Germany, Switzerland, France, or Spain had cut their top tax rates by as many percentage points as the United States has since 1960, their top tax rates would now be well below zero.

Piketty, Saez, and Stantcheva (2014) imply that top corporate executives are the main target of their 83 percent marginal tax, and that high CEO pay is mainly just wasteful rent. Their alleged evidence for a "nonconventional bargaining model" and "CEO rent-extraction" rests mainly on an undocumented claim that the "use of stock-options has exploded in the post-1986 period, i.e., after top tax rates went down" (ibid.: 261). Evidence shows the opposite—namely, that stock-based executive compensation exploded after *1993 when top tax rates went up* (Gorry, Hubbard, and Mathur 2018: 16).

These authors argue that an 83 percent marginal rate on top incomes could greatly reduce *pretax* pay of allegedly overpaid CEOs. But that appears incongruous with their claim that the 83 percent tax rate could also maximize revenue. I also find the combined compensation of the top five executives in S&P 1000 firms accounted for less than 6 percent of top 1 percent income in 2005, which narrows the relevance of an unsubstantiated "CEO rent-extraction" hypothesis.

Conflicting Views about Elasticity and Effects on Long-Term Prosperity

In 2019, a University of Chicago survey asked a panel of economic experts (Chicago Booth 2019) whether or not they agreed that "Raising the top federal marginal tax on earned personal income to 70 percent . . . would raise substantially more revenue (federal and state combined) without lowering economic activity." Among those answering, 20 economists disagreed and 8 agreed. This result reflects considerable professional disagreement about the parameters used to estimate optimal top tax rates, notably ETI estimates, and what they imply for tax policy.

Elasticity of taxable, or perhaps gross income (Chetty 2009), can be "a sufficient statistic to approximate the deadweight loss" from tax

disincentives and distortions (Saez 2001: 212). Although recent studies define revenue-maximization as "optimal," Goolsbee (1999: 39) rightly emphasizes, "The fact that efficiency costs rise with the square of the tax rate are likely to make the optimal rate well below the revenue-maximizing rate."[1]

If the estimated *ETI for high-income taxpayers* (not all taxpayers) is relatively high, that suggests that past increases in top marginal tax rates were associated with little or no increases in tax revenue because economic activity was discouraged and tax avoidance encouraged. With an ETI of 1.0 or more at top incomes, the reduction in reported income would offset the higher tax rate (on reduced taxable income) leaving no increase in revenue.

In 2009, Chetty observed that, "The empirical literature on the taxable income elasticity has generally found that elasticities are large (0.5 to 1.5) for individuals in the top percentile of the income distribution. . . . This finding has led some to suggest that reducing top marginal tax rates would generate substantial efficiency gains" (Chetty 2009: 1). For example, Gruber and Saez (2002: 28) wrote, "These findings [about the ETI being highest at the highest incomes] may have important implications for the optimal tax structure, suggesting a tax system which is progressive on average but not on the margin, with. . . marginal rates that are flat or falling with income."

Since about 2011, however, scholars who had previously argued that reducing top marginal tax rates would be economically optimal (to minimize distortions and disincentives) began theorizing that increasing top tax rates might be socially optimal (to maximize income redistribution). This metamorphosis required discounting evidence that elasticities are large (0.5 to 1.5) for individuals in the top percentile. And it required assuming or asserting that the highest, most distortive marginal tax rates on labor, capital, and entrepreneurship could be greatly increased without impairing incentives or lowering economic activity.

[1]Blomquist and Simula (2019) simulate with an average ETI of 0.4 and Pareto parameter of 2.0 that the incremental deadweight loss in 2006 would be a little over 44 cents for each additional dollar raised from an equal (in percentage points) increase in marginal tax rates *for all taxpayers*. But substituting an academic ETI estimate of 1.04 for *the highest* tax brackets raises the deadweight loss to one dollar per dollar of added revenue in their formula. And the efficiency loss (or excess burden) becomes much higher with less generous assumptions about the linearization of the tax schedule.

When the United States Tried 70–92 Percent Tax Rates in 1951–63, Revenues Were Below Average

From 1951 to 1963, the top U.S. federal tax on individual income was 91–92 percent and the lowest rate was 20 percent, yet revenues from individual income taxes were only 7.5 percent of GDP (OMB 2019: Table 2.3). From 1982 to 1990, the top rate was first reduced to 50 percent and then to 28 percent, yet revenues rose to 8 percent of GDP. The top tax rate was subsequently increased twice—in 1991 and 1993—climbing to 39.6 percent, yet revenues from 1991 to 1996 fell to 7.7 percent of GDP. Finding a revenue-maximizing top tax rate is evidently not as easy as it may appear.

Following the advice of Piketty, former French president François Hollande briefly experimented with a super tax in 2012–14, with a top rate of 75 percent on incomes above 1 million euros (and also raising the next-highest rate from 41 percent to 45 percent). Real GDP growth fell below 0.5 percent in 2012–13 and unemployment rose to nearly 10.5 percent. The 75 percent tax rate was abandoned in favor of a 45 percent top rate after raising only trivial sums on paper (160 million euros in 2014, compared with a previously estimated 30 billion), while arguably losing more government revenue as a result of a nearly stagnant economy and accelerated exodus of affluent expatriates (Murphy and John 2014). In fact, relatively high personal income tax rates in France never raised much revenue. According to OECD Revenue Statistics (2018: 70, Table 3.8), personal income tax revenues in 2016 amounted to 8.6 percent of GDP in France, 10 percent in Germany, and 10.4 percent in the United States. Like all European welfare states, France relies mainly on regressive payroll taxes and VAT.

Those who claim it is different this time—that tax rates of 70 percent or more in the United States would raise more government revenue than they did in the past—bear a burden of proof.

Economists' use of ETI estimates to advocate a steep marginal U.S. tax rate on the highest incomes gained prominence with a study by Diamond and Saez (2011) because of their supposition about an "optimal" revenue-maximizing top tax rate (τ^*). They argued that, if the Pareto parameter is 1.5 and the ETI is 0.25, then "$\tau^* = 1/(1 + 1.5 \times 0.25) = 73$ percent" (ibid.: 171). If that formula is accepted uncritically, then the conclusion follows from the premises. But neither the formula itself, nor the two parameters (Pareto and

elasticity) need be accepted uncritically. If this was a recipe for baking a cake, it might be prudent to question both the recipe and the ingredients.

Diamond and Saez (2011: 171) described the 0.25 ETI as "a mid-range estimate from the empirical literature." Yet that range was subjectively defined as 0.1–0.4 by Saez, Slemrod, and Giertz (2012: 42) who cited estimates as high as 1.99 at top incomes. The bottom of that alleged range was defined by only one study: "Gruber and Saez's elasticity estimate for broad income, 0.12, [which] is notably smaller than their corresponding estimate for taxable income" (ibid.: 39). That is, the uniquely low floor of the alleged 0.1–0.4 range (0.12) was not an estimate of the elasticity of taxable income at all. And the midpoint of the selective 0.1–0.4 range (0.25) is in no sense an average of estimates from the empirical literature.

Diamond and Saez acknowledge, however, that any average ETI *for all taxpayers* (let alone the low 0.25 figure they selected) is too low to be used to estimate marginal tax rates for the top 1 percent:

> In the current tax system with many tax avoidance opportunities at the higher end, the elasticity e is likely to be higher for top earners than for middle incomes, possibly leading to [optimal] decreasing marginal tax rates at the top. . . . However, the natural policy response should be to close tax avoidance opportunities, in which case the assumption of constant elasticities might be a reasonable benchmark [Diamond and Saez 2011: 174].

This suggests that in an ideal but unobserved world, where high-income taxpayers could find no way to reduce the amount of reported income subjected to a marginal tax rate of 73 percent, the authors' unusually low ETI of 0.25 for average incomes might conceivably be a reasonable benchmark for high incomes. In actual experience, they quietly acknowledge, 0.25 is an unreasonably low ETI benchmark for high incomes.

In the empirical literature, an ETI of at least 0.4 is the most common estimate for all taxpayers, and an ETI of at least 0.8 would be a conservative estimate for top 1 percent taxpayers.

Mathur, Slavov, and Strain (2012) surveyed 11 academic and governmental elasticity estimates for taxable income from 1987 to 2009, and the average ETI was 0.72 (after excluding short-run estimates and using the midpoint whenever a range of estimates was offered).

In a meta-regression analysis of 51 U.S. and international studies, Neisser (2017) found average ETI estimates of 0.54 for gross income and 0.67 for taxable income. Among recent studies, Burns and Ziliak (2017) estimate the all-taxpayer ETI as 0.4, and Kumar and Liang (2018) as 0.46 to 0.7.

Saez (2004: 123) found, as others have, that "those taxpayers with very high incomes are much more responsive to changes in taxation than taxpayers in the middle or upper-middle class." He estimated the 1960–2000 elasticity of *gross* income before deductions was about 0.7 (actually 0.59 to 1.58) for taxpayers in the top 1 percent, after highly elastic capital gains and deductions are excluded, and acknowledged that "elasticities of taxable income [which allows for deductions] are likely to be larger" (ibid.: 120).[2]

The hypothetical estimate of 0.25 used by Diamond and Saez (2011) is implausibly low even for middle-income taxpayers and impossibly low for the high-income taxpayers targeted by their proposed 73 percent rate.

Correcting for a Trend May Be Incorrect

Income observed from individual tax returns, which Piketty and Saez rely on, can be greatly affected by changes in tax rates and regulations, such as the Tax Reform Act of 1986 (TRA86). The reduction in top tax rates to 28 percent in 1988–90, from 50–70 percent in prior years, encouraged massive income shifting of business and professional income from corporate tax returns to individual tax returns, via S-corporations, partnerships, and LLCs. This change created a surge in top incomes reported on individual tax returns, which was largely the result of changed accounting rather than changed incomes.

Income shifting was only one of many behavioral responses to raising (or reducing) the portion of top incomes taxpayers are allowed to keep; Feldstein (2011) enumerates numerous others. He found the reported taxable incomes of taxpayers who faced 49–50 percent marginal tax rates in 1985 surged by 44.8 percent between 1985 and

[2]Gruber and Saez (2002) estimated a lower 0.57 ETI for "high incomes," but their definition of high incomes includes some incomes too low to be in the top 1 percent ($100,000) while excluding all income above $1 million. That million-dollar cap left out superstars, top CEOs, major investors, top professionals, and small businesses—where theory and evidence find the ETI is highest.

1988, while their net-of-tax share rose by 42 percent (from 50.5 to 72 percent) after the top tax rate was reduced to 28 percent. The greater increase in reported income implies an ETI larger than one.

Saez (2004) claimed Feldstein's similar 1995 estimates of the ETI during TRA86 were too high because they failed to correct for a secular upward trend in the top 1 percent's share of total income. To the extent that such an upward trend was in itself reflecting changed incentives to earn and report more income on individual tax returns, however, then it would be misleading to "correct" for what were to a considerable extent behavioral responses.[3]

Piketty and Saez (2003) estimate that the top 1 percent's share of total income increased by 11 percentage points between 1960 and 2015, but Auten and Splinter (2018) find it increased by only 0.3 percentage points. As argued by Reynolds (2012), Auten and Splinter find most of the apparent rise in the top 1 percent's share of total income in Piketty and Saez's data has been the result of (1) behavioral responses to lower tax rates and (2) exclusion of a large and rapidly growing amount of government transfers and untaxed employer benefits from the denominator—total before-tax income.

Weak Formulas and Strong Assumptions

A Pareto probability distribution describes a situation where most of the data pertain to the upper tail of a curve, such as 20 percent owning 80 percent of the land in Italy in Pareto's example. A Pareto parameter for income gauges the "thickness" of the tail above, say, the threshold defining the top 1 percent. In 2017, that group included more than 1.7 million U.S. families earning more than $463,320 before taxes, or $422,810 if capital gains are excluded, according to Piketty and Saez (2003 with updated data March 2019: Table 0).

The larger the number describing the Pareto parameter ("Pareto-Lorenz α coefficient"), the "thinner" the distribution and the less pretax income is in the upper tail of the distribution (Saez 2001: 211). A Pareto parameter of 3.0 is much "thinner" than 1.5, for example. "If the distribution is thin," explains Saez (ibid.: 212), "then raising the top

[3]Goolsbee (1999: 24) notes that, because high incomes are highly cyclical, estimates of their ETI "may differ depending on the state of the business cycle." Yet making cyclical corrections to ETI estimates could be misleading if higher marginal tax rates contributed to recessions—as may have happened in 1932, 1937, 1970, 1981 (via bracket creep) or 1991.

rate for high income taxpayers will raise little additional revenue." Diamond and Saez (2011) chose a thick parameter of 1.5 and their optimal tax rate calculation implicitly assumes that number is given or constant, regardless of behavioral responses to changing marginal tax rates. This assumption, like their choice of a low ETI to represent high-income taxpayers, greatly affects the result.

Before examining how varying the parameters of the Saez (2001) formula affects the estimated revenue-maximizing top tax rate, it may be helpful to examine assumptions behind the formula itself that have been the subject of some controversy. Even if the parameters were precise and permanent, the formula could not provide incontestable answers to the question it sets out to answer.

Fairness as defined in the optimal tax literature does not suggest tax systems should aim to reduce inequality regardless of the distribution of ability.[4] Even if top incomes reported on yearly tax returns were not so undeniably sensitive to tax rates, they would still be a poor proxy for long-term income or for personal differences in the ability to earn income.

Saez (2001) uses income reported on U.S. individual tax returns, and estimates a Pareto parameter and ETI (also from tax returns), in order to simulate differences in ability, endowments, or productivity—which would supposedly approximate "ability to pay" high marginal tax rates. To derive optimal tax rates from tax return data is treacherous, however, because income observed in tax returns is itself dependent on tax rates: When marginal tax rates go up, reported top incomes go down.

As Mankiw, Weinzierl, and Yagan (2009: 5) note:

> The planner can observe income, which depends on both ability and effort, but the planner can observe neither ability nor effort directly. If the planner taxes income in an attempt to tax those of high ability, individuals will be discouraged from exerting as much effort to earn that income.

[4]If high marginal tax rates effectively reduced pretax or posttax incomes in the upper tail (rather than, say, changing the form of income or moving it into cash, offshore accounts, or retained corporate earnings), that would reduce inequality by definition—if inequality is defined solely by income at the top. But that alone would not redistribute income unless (1) government receipts actually increased over time and (2) any incremental tax receipts were given to low-income people rather than used for other political priorities.

However, they add, "Estimating the distribution of ability is a task fraught with perils. For example, when Saez (2001) derives the ability distribution from the observed income distribution, the exercise requires making assumptions on many topics at and beyond the frontier of the optimal tax literature" (Mankiw, Weinzierl, and Yagan 2009: 152).

Tanninen, Tuomala, and Tuominen (2019: 25–26) explain that

> Saez (2001) . . . assumes that the labor supply elasticity is constant [which] is contradicted by a growing body of evidence. He further assumes a linear tax schedule in inferring the skill distribution for the earnings distribution. This . . . seems particularly inappropriate in optimal nonlinear taxation. The strong assumptions required for structural identification of the model reduced the confidence of the optimal tax schedule calculations [such as the 73 percent figure in Diamond and Saez (2011)].

The Saez formula for estimating a revenue-maximizing top tax rate in a nonlinear tax system is "a simple generalization of the well-known formula for the flat tax rate maximizing tax revenue. . . [which is based on] the average elasticity over all taxpayers" (Saez 1999: 68). The flat tax rate formula says the revenue-maximizing rate for all taxpayers equals $1/(1 + e)$. The Saez formula (1999, 2001) calculates a comparable flat tax for only the top incomes on the assumptions that the Pareto parameter would be unaffected by changing the top tax rate and that those subject to the top rate share the same ETI (which is not to be confused with the average elasticity over all taxpayers). Giertz (2004: 16) uses the flat tax version to demonstrate that "under a single-rate tax system . . . an ETI of 0.40 [for all taxpayers] would imply a revenue-maximizing income tax rate of 70 percent [for all taxpayers]." But the lower 0.25 ETI (e) used in Diamond and Saez (2011), implies a higher revenue-maximizing flat tax rate of 80 percent ($\tau^* = 1/(1 + 0.25) = 0.80$).

Early efforts to estimate such a revenue-maximizing flat tax assumed all income came from labor, and homogeneous individuals differed only in their ability (skill or productivity), not their effort. A revenue-maximizing flat tax formula based on these assumptions was initially expressed simply as a function of the labor supply elasticity, but later adapted to encompass elasticity of taxable income in general. Newer estimates of a revenue-maximizing tax rate in a progressive tax

system still retain the restrictive assumptions of the older flat tax formula—namely, that income comes only from labor and that people differ only by ability.

Judd et al. (2018: 1–2) find this one-dimensional approach unrealistic:

> The Mirrlees (1971) optimal tax analysis and much of the literature that followed assumed that people differ only in their productivity, and shared common preferences over consumption and leisure. . . . A more realistic model would account for multidimensional heterogeneity. For example, some high ability people have low income because they prefer leisure, or the life of a scholar and teacher. In contrast, some low ability people have higher-than-expected income because circumstances, such as having to care for many children, motivate them to work hard.

Economists or government officials who hope to tax "from each according to their ability," cannot meaningfully judge ability simply by grouping people by income reported on one year's income. Thus, Judd et al. (2018: 3) ask, "If a person has low income, is it because he is a middle-aged individual with low ability, or is it a young person with high-ability at the beginning of a steep life-earnings profile? The government may want to help the former, but not the latter."

When Judd et al. examine "three-dimensional heterogeneity combining heterogeneous ability, elasticity of labor supply, and basic needs," they find more scope for taxpayers to respond to redistributive tax policies in ways that make such policies counterproductive and limit their feasible scope. In fact, they simulate "cases where the [optimal] marginal tax rate on the top income is negative" (Judd et al. 2018: 4). In a classic essay on "Pareto Efficient and Optimal Taxation," Stiglitz (1987: 50) likewise argued that, in a general equilibrium analysis, Pareto-efficient optimal taxation requires "the government to impose a negative marginal tax rate on the more productive individuals."

The one-dimensional view of taxpayer homogeneity in the old flat tax models remains at the core of the nonlinear model used by Diamond and Saez (2011). If these formulas are to be believed, the low ETI of 0.25 and low Pareto parameter of 1.5 in Diamond and Saez imply a revenue-maximizing flat tax rate of 80 percent for all taxpayers or a similar revenue-maximizing top tax rate of 73 percent collected from only about 1 percent of all taxpayers.

Estimated Top Tax Rate Models Are One-Dimensional, Short-Term, and Static

The fact that a nonlinear optimal flat tax formula ends up postulating a revenue-maximizing flat tax of 80 percent (by assuming parameters are given and unrelated to the new tax regime) underscores the importance of the Chicago Booth survey question at the start of this article about how such a draconian tax regime could possibly raise more revenue without decreasing economic activity.

The whole concept of an 80 percent flat tax seems an arcane academic abstraction. Nobody has any evidence about what the ETI (or Pareto parameter) might look like if people were faced with an 80 percent marginal tax on every dollar earned above a standard deduction. Such an ETI would surely not be anything remotely close to 0.25—probably more than 1.00. With an 80 percent flat tax, we might expect many more people to switch from earning taxable income to demanding transfer payments, and many surviving businesses to relocate to other countries or disappear into an underground tax-free sector paid with cash, barter, or digital currency.

The nonlinear calculation of a revenue-maximizing rate has much in common with the flat tax version, including the key detail that elasticity estimates and Pareto parameters created from data collected while U.S. marginal tax rates were fairly low are simply assumed to remain unchanged if marginal tax rates were instead much higher.

Unlike its flat tax cousin, the nonlinear Saez (2001) formula purports to estimate a very high "optimal" tax rate for only a tiny fraction of taxpayers, but also be "revenue-maximizing" for *only* that tiny fraction. The nonlinear optimal tax formula is silent about what happens after the first year to economic activity and tax revenue below the top tax bracket. Yet what happens at the top can have discouraging long-term effects, for example, on the effort, education, and investment of others not yet in the top tax bracket. Even if a high top tax rate increased total revenue from the top tax bracket in the short run, negative dynamic effects could depress long-run revenue collected from the totality of income, payroll, sales, property, and other taxes.

As Jaimovich and Rebelo (2017: 267) put it, "The Diamond-Saez calculation suffers from an important shortcoming: it considers only the static effect of taxation on current tax revenue." It ignores dynamic effects by implicitly assuming that the growth rate of the economy is invariant with respect to the tax rate. The Jaimovich and

Rebelo dynamic model finds, "Low or moderate tax rates have a small impact on long-run growth rates. But as tax rates and other disincentives to investment rise, their negative impact on growth rises dramatically" (ibid.: 266).

Zajac (1995: 11) warns, "Economists who focus on a static aspect of an economy run the danger of doing beautiful work on the wrong problem." A dynamic perspective would view a 73 percent marginal tax rate on high salaries as a tax on the expected future return from investing time and money in human capital. Diamond and Saez (2011: 175) recognize that "a more progressive tax system could reduce incentives to accumulate human capital in the first place," so "the elasticity *e* should reflect not only short-run labor supply responses but also long-run responses through education and career choices." Badel, Huggett, and Luo (2018: 16) argue that, once those long-run human capital incentives are taken into account, the "Laffer curve peaks at a top rate equal to 49 percent."

Jones (2019: 12) takes it further, adding Schumpeterian effects of top taxes on inventions, innovation, and technological change and noting that "Diamond and Saez (2011) . . . do not consider any interaction effects between the efforts of top earners and the wages earned by workers outside the top." In Jones's idea-based exogenous growth model, "high incomes are the prize that motivates entrepreneurs to turn a basic research insight that results from formal R&D into a product or process that ultimately benefits consumers. High marginal tax rates reduce this effort and therefore reduce innovation and the incomes of everyone in the economy" (ibid: 2). His model suggests that "incorporating ideas as a driver of economic growth cuts the optimal top marginal tax rate substantially relative to the basic Saez calculation" (ibid.: 39). In one simulation, "the rate that incorporates innovation and maximizes a utilitarian social welfare function is just 22 percent" (ibid: 3).

A Pareto Parameter Cannot Be Assumed Constant, or Independent of Top Tax Rates

The upper tail in the United States became thicker after the highest marginal tax rates at the federal level came down from 70 percent to 28.0–39.6 percent as the very highest incomes (top 0.001 percent) grew rapidly—partly due to switching from the corporate tax. Observing such a thick tail in the post-TRA86 U.S. economy might

appear to imply there is ample income available to tax at high marginal rates, as Diamond and Saez take for granted. But that conclusion would require assuming (1) that the increased amount of high income visible on individual tax return data since 1988 did not happen precisely because marginal tax rates were lower, and that (2) observed high ETI at the highest incomes would not cause many high incomes to shrink or vanish from U.S. individual tax returns if top marginal tax rates were sharply increased.

Like the ETI, the Pareto parameter is not an iron law but a variable that was higher and often rising *before* top tax rates on incomes and capital gains were repeatedly reduced after 1978–82 (Badel et al. 2018: Figure 11). Atkinson and Piketty (2010) find the U.S. Pareto (α) coefficient for the top 1 percent fell from 2.33 in 1979 to 1.67 in 1988 when the 28 percent top tax took effect for both salaries and capital gains. It fell again to 1.6 in 2004 when the top federal tax rate was cut to 15 percent on dividends and capital gains and to 35 percent on salaries. Since the Atkinson and Piketty series ends at 2005, and the 1.6 Saez and Stantcheva (2018) estimate is for 2007, those unusually low parameter estimates from 2005 to 2007 probably reflect the unusually low top tax rates on capital and labor from 2004 to 2012.

Those who now want to put top tax rates back up to the rates prevailing in the 1970s are implicitly assuming that doing so would not push the Pareto parameter back up. The U.S. time series and international cross section evidence suggest otherwise.

Lundberg (2017) assembled recent Pareto parameter estimates for 27 countries from country-specific studies, the World Wealth and Income Database (WID) and the Luxembourg Income Study (LIS). The LIS focuses on labor income, which Lundberg argues is more accurate and relevant for Scandinavian countries, which have a low flat tax on capital income. Several countries have no tax on capital gains—including Belgium, the Netherlands, Switzerland, New Zealand, and South Korea—making LIS estimates based on labor income arguably more comparable to other countries.

Pareto parameter estimates differ because of inclusion or exclusion of capital income (e.g., 2.20 or 2.59 for France) and are sometimes ambiguous. In general, however, Pareto parameter estimates are generally highest for countries with the highest top tax rates on labor income: 3.35 in the Netherlands, 3.18 in Sweden, 3.14 in Austria, and 3.04 in Denmark. Pareto parameter estimates are

likewise generally lowest in countries with the lowest top tax rates on both labor and capital, such as 1.61 in the United States, 1.73 in Switzerland, 1.75 in Malaysia, 1.79 in Taiwan and the United Kingdom, and 1.81 in South Korea.

The Diamond-Saez (2011) assumption of a constant Pareto parameter of 1.5 is lower than the 2.0 norm (for labor income) suggested by Saez (1999, 2001) and much lower than it was when the United States had high top tax rates or than it is in European countries with high top tax rates.

Using either a higher Pareto parameter or higher ETI within the disputed formula of Diamond and Saez greatly lowers their calculated optimal top tax rate. Saez (2004: 129) noted that even with a low Pareto parameter of 1.6 and an ETI of 0.5 (below his own estimate for top 1 percent incomes) "the Laffer rate would 55.6 percent, not much higher than the combined maximum federal, state, Medicare, and sales tax rate." By 2019, however, the top marginal tax rate was above 55.6 percent in most states.

In the Diamond and Saez formula, the concept of a revenue-maximizing top tax rate in 2019 must include the 37 percent top federal rate plus nondeductible state and local income and sales tax rates, the 2.9 percent Medicare tax and 0.9 percent surtax, and the 3.8 percent Obamacare net investment tax. Adding an average state income tax of 6.4 percent (Loughead and Wei 2019) and an average state and local sales tax of 6.4 percent (Cummings 2019) raises the 2019 U.S. top marginal tax rate to 57.4 percent nationwide. But the top tax rate can be even higher than 57.4 percent in 9 states with top income tax rates from 8.8 percent to 13.3 percent and 11 with sales tax rates of 8.1 percent to 9.5 percent. In 2019, the top tax rate in San Francisco was 45 percent at the federal level plus 14.8 percent state and city income tax, plus 8.5 percent state and city sales tax for a total top tax rate of 66.2 percent. The same calculation for New York City adds up to a 66.6 percent top rate.

Once we replace the inappropriate all-income ETI of 0.4 with a modest *high-income* ETI of 0.8, while keeping the same controversial Saez formula, that results in an optimal federal-state-local top tax rate of 43.9 with the lowest Pareto parameter in the empirical literature of 1.6, or 38.5 percent with a Pareto parameter of 2.0.

In short, with empirically plausible changes in parameters, the Diamond and Saez formula can more easily be used to show that top U.S. federal and state tax rates are already *too high* rather than too low.

Piketty, Saez, and Stantcheva Justify a Top Tax Rate of 83–100 Percent

Piketty, Saez and Stantcheva (2014), in another celebrated study, use essentially the same Diamond-Saez formula of adding a given Pareto parameter to an assumed ETI to justify a top federal-state tax rate of 83 percent. They begin with a long-term ETI estimate of 0.52 for the top 1 percent in the United States between 1960–64 and 2004–08. They also find about the same multidecade 0.47 ETI for the top 1 percent among 18 OECD countries, but pointedly note (ibid.: 255) that "the elasticity. . . increased sharply to 0.6–0.8 in the period 1981–2010," so that adding the 1960s and 1970s to the average is what makes it look so low. The fact that the OECD ETI estimate for the top 1 percent is 0.6–0.8 after 1981 suggests the post-1981 U.S. ETI estimate would likewise be closer to 0.8 (and to other estimates) if their average had properly excluded the extraneous 1965–1980 period when the top U.S. tax rate was unchanged.

After conjecturing that only 0.2 (at most) of their watered-down 0.5 five-decade ETI is "due to supply-side effects generating more activity," Piketty, Saez, and Stantcheva (2014: 233) end up deducing (via subtraction) that three-fifths of their 50-year 0.5 ETI (0.3) must therefore be the supposedly preventable result of tax avoidance and/or "bargaining" clout (called "CEO rent-extraction").

Piketty, Saez, and Stantcheva (2014: 239) theorize that "marginal tax rates affect the rewards to bargaining effort and can hence affect the level of such bargaining efforts." To verify the "main channel" of their "nonconventional bargaining model," they rely on an incorrect claim that the "use of stock-options has exploded in the post-1986 period, i.e., after top tax rates went down" (ibid.: 261). They also claim paying executives of public companies in stock or options is "a zero-sum game transfer from the bottom 99 percent to the top 1 percent" (ibid.: 249). On the contrary, grants of restricted stock or stock options that pay off are entirely financed by the company's stockholders through dilution.

In reality, stock-based executive compensation did not explode "after top tax rates went down" after 1986, but after top tax rates went *up* in 1993. That was partly because section 162(m) of the 1993 tax law denied companies any deduction for the cost of executive compensation above $1 million for salary and bonuses, but not for "performance-based" stock options or restricted stock (Reynolds

2005). But it was also because two *higher* tax rates, 36 percent and 39.6 percent, were added in 1993.

CEO Stock Options Exploded after Top Tax Rates Went Up, Not Down

Gorry, Hubbard, and Mathur (2018: 16) find that "the share of [executive stock] options awarded increased from about 18 percent of total compensation in 1992 to 23 percent by 2005. There was an even larger increase in restricted stock grants, from 4 percent to 13 percent, over the same period." However, the percentage of S&P 500 firms offering CEO stock options fell from 70 percent in 2009 to 56 percent in 2017, according to Bout, Cruz and Wilby (2019), despite the 2013 increase in top marginal tax rates. New FASB rules in 2006 requiring expensing of the estimated value of stock options grants made restricted stock more attractive for many firms.

The first key point from Gorry, Hubbard, and Mathur (2018) is that the deferral of taxes after 1992—through shifting compensation to stock and stock options—was clearly an example of *avoidance elasticity* to delay and thus dilute the bite of *higher* top tax rates in 1993. This is the antitheses of the Piketty-Saez-Stantcheva (2014) supposition about the surge of options after 1992 being a "bargaining" response to the reduction in top marginal rates in 1988.[5]

A second point, which I derive from the data in Gorry, Hubbard, and Mathur (2018), is that CEO compensation in the largest U.S. corporations accounts for a surprisingly small share of top 1 percent income. Even including all top five executives in the S&P 1000 (not just CEOs, who are supposed to have special bargaining clout) they report, "[A]verage total compensation increased from $866,987 in 1992 to $1,852,074 in 2005" in 1991 dollars. That is, the 5,000 executives combined earned a total of $9.26 billion in 2005 in 1991 dollars, which translates into $13.17 billion in 2005 dollars.

In the Piketty and Saez estimates for 2005, the average income among 729,405 tax units in the top 1 percent was $310,062, which

[5]Using the EXECUCOMP database for top five executives at S&P 1000 firms from 1992 to 2005 (only a small fraction of all top 1 percent income from labor and capital), Gorry, Hubbard, and Mathur (2018) find that accounting for increased deferral raises their estimated ETI for these executives from 0.8 to 2.24, but that only 0.31 of that is from reduced labor supply (an incomplete gauge of potential real effects).

adds up to $225.16 billion. The $13.17 billion in total compensation of top five executives in the 1,000 largest U.S. corporations therefore accounted for just 5.8 percent of the total income of the top 1 percent in 2005. Even if bargaining theory explained compensation of CEOs plus four other top executives in large corporations (as it cannot in the case of stock options) that would still leave 94.2 percent of top 1 percent income unexplained.

To buttress their bargaining theory, Piketty, Saez, and Stantcheva (2014: 239) write, "Bakija, Cole, and Heim (2012) have recently shown that executives, managers, supervisors, and financial professionals account for 70 percent of the increase in the share of national income going to the top 0.1 percent." But that amorphous mixture of unrelated occupations has no connection to the CEOs of large public corporations who are alleged to have unique discretionary bargaining power over corporate boards. Bakija, Cole, and Heim (2012: 49, Table A.1) include "supervisors in any field except finance or government" in public and private firms, whether incorporated or not. Then they add all sorts of financial professionals such as hedge fund managers and private equity partners, plus what Piketty and Saez (2004: Table 2) call "Capitalists and Rentiers"—that is, "bankers, real-estate brokers, stock and bond brokers, insurance brokers, all other brokers, and capitalists: investors and speculators."

Bakija, Cole, and Heim (2012: 41, Table 6) realize the combined incomes of "executives, managers, supervisors, and financial professionals" are not informative about top CEO compensation in publicly-traded corporations—the sole theme of the "CEO rent extraction" hypothesis of Piketty, Saez, and Stantcheva (2014). In an Addendum to Table 6, Bakija, Cole, and Heim struggle to narrow their focus from successful nonfinancial salaried businesspersons to the incomes of all executives (top to bottom) in all public corporations (large and small). They did so by collecting IRS data on incomes of executives in nonfinancial businesses who collect more salary than business income. By that measure, salaried corporate executives with incomes in the top 1 percent earned 2.23 percent of national income in 1979, 2.24 percent in 1993, and an unchanged 2.22 percent in 2004 and 2005. Meanwhile, the top percentile's share of national income rose from 9.18 percent in 1979 to 16.97 percent in 2005. Contrary to the Piketty-Saez-Stantcheva CEO rent-extraction hypothesis, Bakija, Cole, and Heim end up estimating that executives in nonfinancial public corporations (unlike those in private firms)

accounted for a much smaller share of total top 1 percent income in 2005 (13.1 percent) than they had in 1979 (24.3 percent).

Bakija, Cole, and Heim (2012: 12) note that "Kaplan and Rauh [2013] . . . have argued that executives of publicly traded firms represent too small of a share of top income earners in the U.S. to be able to explain much of the rise in top income shares." Their own estimates not only confirm Kaplan and Rauh (2013), but further demonstrate that executive pay of publicly traded nonfinancial firms could not possibly account for *any* of the rise in the top 1 percent income share from 1979 to 2005 because, in their estimates, public corporate executives' share of national income did not rise at all between those years.

By asserting that (1) CEOs simply will not bother to bargain for allegedly "zero-sum" stock options if faced with an 83 percent marginal rate, and that (2) tax avoidance is easily preventable (as explained later) by simply taxing capital gains and corporate profits at the same 83 percent rate, Piketty, Saez, and Stantcheva (2014: 233) claim to be left with a supposed ETI estimate of just "0.2 (at most)" as their residual estimate of the real, supply-side loss from a high marginal tax rate. That 0.2 ETI forms the basis for their "socially optimal" 83 percent top tax rate (ibid.).

Remarkably, they add that "the optimal top tax . . . actually goes to 100 percent if the real supply-side elasticity is very small" (ibid.: 232). They settle for 83 percent rather than 100 percent because of practical concerns that "some real responses could be somewhat dampened by government policies" (ibid.: 235). Otherwise, a 100 percent top bracket remains the ethical optimum, because, "we assume that the average social marginal welfare weight among top bracket income earners is zero. In that case, the government sets to maximize tax revenue raised from top bracket taxpayers" (ibid.: 234.). This demonstrates, as Feldstein (2012: 282) remarked in a similar context, an "implicit assumption that 'society' owns everyone's potential earnings."

Confiscating all U.S. income above the threshold defining the top tax bracket ($612,350 for couples under 2019 law) would supposedly be the "socially optimal" way to maximize revenue "if the real supply-side elasticity is very small." However, that assumes the ETI, Pareto parameter, and GDP estimates made when top tax rates were reasonable would not change after the top tax rate became unreasonable. The elasticity and Pareto parameter might appear low *before* an 83–100 percent tax was imposed, but that does not mean they would remain small after that happened.

The amount of revenue available for redistribution depends on *average* tax rates (not the top marginal rate) times the tax base (taxable income and wealth). The future size of the high-income tax base cannot simply be assumed to be unaffected by a 100 percent tax rate, regardless what ETI is deployed to reach such an inexplicable definition of optimality. People are not apt to work up to their full potential if added compensation for added effort is zero.

The notion that a 100 percent marginal tax rate could ever "maximize tax revenue raised from top bracket taxpayers" is a *reductio ad absurdum*. And that same abstract analysis becomes only marginally more credible by substituting the number 83 percent for 100 percent.

Mertens and Olea Find Lower Marginal Tax Rates Raise GDP

Two defining themes of the Piketty, Saez, and Stantcheva (2014) narrative—that the ETI for the top 1 percent is low and mostly unrelated to real activity—are contradicted by Mertens and Olea (2018: 1803). They find "short-run tax elasticities of reported income of around 1.2" based on time series from 1946 to 2012 for the top 1 percent, and the elasticities are "positive and statistically significant for other income groups." They also find:

> Marginal rate cuts lead to increases in real GDP and declines in unemployment that are broadly consistent with existing macro results . . . The associated short-run reported income elasticity for the top 1 percent is estimated to be around 1.5. In the short run, a top marginal rate cut is estimated to raise real GDP, to lower aggregate unemployment and to have a measurable positive effect on incomes outside of the top 1 percent. . . . Targeted cuts for the bottom 99 percent also generate positive effects on reported incomes and aggregate economic activity, but with a delay of several years [ibid.: 1805].

Mertens and Olea (2018) cite a number of other macro and labor supply studies demonstrating a strong dynamic connection between marginal tax rates and long-term real activity, including labor force participation, lifetime work hours, and entrepreneurial innovation. Stantcheva, for example, coauthored a paper finding (as Jones [2019] hypothesized) that "taxes matter for innovation: higher personal and corporate income taxes negatively affect the quantity and quality of

inventive activity and shift its location at the macro and micro levels" (Akcigit et al. 2018:1).

Yet Piketty, Saez, and Stantcheva (2014) did not confront any of the vast literature connecting marginal tax rates to economic performance. All they did was to obfuscate the issue by testing a hypothesis that nobody advanced—namely, that economic growth should be expected to be affected by the total *percentage point change* in top tax rates between two dates separated by decades rather than by whether and when those rates were high or low. Unsurprisingly, they "find no evidence of a correlation between growth in real GDP per capita and the drop in the top marginal tax rate in the period 1960 to the present" (ibid.: 232).

Percentage Point Changes in Tax Rates Cannot Tell Us If Rates Were High or Low

Piketty, Saez, and Stantcheva (2014: 256) use a scatter diagram to compare percentage point changes in top individual tax rates with economic growth among 18 OECD countries from about 1960–64 to various years from 2005–09. They conclude that "countries experiencing the largest increases in top income shares (the United States and the United Kingdom) have growth rates that are comparable to those of Germany, or Denmark who did not experience large top rate cuts" (ibid.: 257). They add that Spain and Switzerland also "did not experience any significant top rate cut" since the early 1960s (ibid.: 252).

Comparing percentage point changes in top tax rates between two data points separated by decades is vacuous. In 1960–64, the top tax rate was extremely high in the United States (91 percent) and United Kingdom (88 percent), but only 53 percent in Germany, 44 percent in Switzerland, and 40 percent in Spain. In a 1964 "Comparison of European and United States Tax Structures," Eckstein and Tanzi (1964: 247, 250) observed:

> The extent of nominal [tax] progression is lower on the continent than here, but if the proposed tax program is enacted [which reduced all U.S. marginal rates by 30 percent in 1964-65], our tax system will no longer differ so greatly even in this respect. . . . The current proposals . . . remove the most objectionable feature of our direct-tax system, the extreme progression of the income tax.

Eckstein and Tanzi (1964: 251, 244–45) remarked that France exempted individual capital gains and about 30 percent of labor income, and noted that, in Germany, "The tax system was the main instrument of economic policy for growth. . . . After 1950, the . . . burden of direct taxation was made substantially lighter, both on business and on households."

Reynolds (1996: 200) explains that German "income-tax rates were slashed from 95 percent on incomes above $15,000 at the time of the Allied occupation to a maximum of 53 percent on incomes of $250,000 by the early 1950s." The United States, by contrast, never had a combined top federal and state tax rate as low as 53 percent before 1987 and the top rate in 2019 was much higher than 53 percent in most states. Meanwhile, Germany recently reduced the top tax rate to 47.5 percent and Switzerland to 40 percent.

Neither Germany, Switzerland, nor Spain could possibly have cut their top tax rates by 63 percentage points as the United States did after 1960 (from 91 percent to 28 percent), since that would have left their top tax rates well below zero.

Japan looked like one of the two fastest-growing economies in the original publication of Piketty, Saez, and Stantcheva, which started from the early1960s, but drops to fifth place in their more recent op-eds, which begin with 1975. That is because Japan's economy grew by 9.8 percent a year from 1952 to 1973 by emulating German tax strategy (before reversing course since then). In 1950 the top income tax rate in Japan was cut from 86 percent to 50 percent. "From 1950 to 1974, Japan cut taxes every year (except 1960) often by greatly increasing the income thresholds at which the higher tax rates applied, or by enlarging deductions and exemptions [particularly for savings]" (Reynolds 1998: 3).

The individual income tax is, of course, only one of many taxes affecting a country's attractiveness as a place to work, invest, and do business. Even Diamond and Saez (2011) include the marginal effect of payroll and sales taxes. And it would be misleading to not even mention corporate tax rates when discussing economic growth policies in Ireland and several other business-friendly tax regimes.

Even limiting cross-section comparisons to top individual tax rates, the narrow selection of 18 OECD countries in Piketty, Saez, and Stantcheva (2014) leaves out all the bustling economies that halved their top tax rates in Asia, Latin America, Africa, and Eastern Europe (Reynolds 2004). Since 1979, the highest income tax rate was cut

from 55 percent to 22 percent in Singapore, from 89 percent to 40 percent in South Korea, from 60 percent to 30 percent in India, from 60 percent to 28 percent in Malaysia, and from 50 percent to 30 percent in Indonesia. Chile cut the top tax rate from 60 percent to 35 percent, Brazil from 55 percent to 27.5 percent, Colombia from 56 percent to 33 percent, and Bolivia from 48 percent to 13 percent. Mauritius cut the top tax rate from 50 percent in 1979 to 15 percent and Botswana from 75 percent to 25 percent. Economic growth has been famously vigorous in all of these cases, among others.

If judged by the change in top individual tax rates rather than their typical level, Hong Kong could never be used to test the hypothesis that low marginal tax rates are conducive to rapid growth because Hong Kong *always* kept the top tax rate below 25 percent (e.g., 17 percent in recent years).

Profits and Capital Gains Would Also Be Taxed at 83 Percent

When considering the impact of the proposed 83 percent top tax rate on the U.S. economy, it is important to understand that the formula used to define an 83 percent tax rate as "optimal" is based on the assumption that high-income tax avoidance is "fully eliminated." Eliminating opportunities for tax avoidance requires applying the same 83 percent tax rate to all income, including realized capital gains and corporate income. Although Piketty, Saez, and Stantcheva (2014) title their paper "Optimal Taxation of Top Labor Incomes," they necessarily endorse comparable tax rates on capital income. That is because all opportunities to shift income from taxable personal income into corporate earnings, capital gains, or dividends taxed at a lower rate must be eradicated by tax "reform."

If high personal incomes were taxed at 83 percent while C-corporations were taxed at recent U.S. rates of 21–35 percent, many businesses and professionals would soon become closely held C-corporations to retain earnings within the firm. Similarly, if large salaries and royalties were taxed at 83 percent while long-term capital gains were taxed at recent U.S. rates of 20–28 percent, many executives and celebrities would negotiate to be paid in assets expected to appreciate, such as growth stocks or collectibles.

As Piketty, Saez, and Stantcheva (2014: 231–32, 238) put it, the "second elasticity (avoidance) becomes irrelevant," if and only if we

assume that "differential treatment of different income forms" is "eliminated by reforming the tax system." Thus, "reform" clearly means the same 83 percent top tax rate must be applied to individual and corporate income, capital gains and dividends, tax-free municipal bond interest, and any other source of income, including in-kind employee benefits.

Although Piketty, Saez, and Stantcheva (2014) must assume literally zero tax avoidance elasticity to arrive at their diminutive 0.2 ETI for the top 1 percent, they actually just hope "the tax-avoidance elasticity could likely be substantially reduced" by imposing an 83 percent rate on all different forms of both labor and capital income, while also hoping for "international cooperation" (ibid.: 238). Without reducing avoidance elasticity to zero, however, their estimate of 0.2 ETI is incorrect on their own terms, and so too is the resulting 83 percent estimate of the optimal top tax rate.

Unfortunately, an 83 percent tax on capital gains and corporate profits could easily result in very few U.S. investment gains or profitable corporations left to tax. It is difficult to imagine a single country that might agree to cooperate in trying to match or enforce such unprecedented taxes. To blithely assume an 83 percent marginal tax on salaries, dividends, interest, corporate profits, and capital gains in one nation would have no adverse effect on that country's long-term relative allure as a magnet for human and financial capital would require a novel growth theory that has yet to be invented.

By using such wishful devices to stamp out tax avoidance and CEO bargaining clout, Piketty, Saez, and Stantcheva (2014) reduce their already diluted 0.5 elasticity estimate down to an illusory 0.2. That is how they are able to proclaim that, if the ETI at the highest incomes was 0.2 (which it is not), that "corresponds to a socially optimal top tax rate $\tau^* = 83$ percent" (ibid.: 233).

Piketty, Saez, and Stantcheva (2014: 234) refer to 83 percent as "redistributive optimal" (regardless of excess burden inefficiency) simply because it is "the rate set to maximize tax revenue raised from top bracket earners." This is somewhat paradoxical because the same authors frequently advocate high marginal rates as a way to reduce *pretax* incomes of top earners, including alleged CEO rents from bargaining, and thus shrink the tax base of the highest tax rates.

A key concluding proclamation in a PowerPoint presentation by Saez at the University of Chicago, October 9, 2014, was that "high top tax rates reduce the pretax income gap without visible effect on

economic growth" (Saez 2014). But his comment about economic growth rests precariously on the shaky Piketty-Saez-Stantcheva (2014) comparison of changes in OECD top tax rates since 1960. And his goal of using high top tax rates to "reduce the pretax income" of the rich is difficult to reconcile with his claim that high top rates will also raise the most tax revenue. High marginal tax rates cannot both minimize pretax top incomes and maximize revenue from top incomes. If "the point of high top marginal income tax rates is to constrain the immoderate . . . accumulation of riches," as Saez and Zucman (2019) insist in a *New York Times* op-ed, then such a deliberate shrinkage of top incomes and wealth would almost certainly result in a sustained shrinkage in taxes collected from top incomes and wealth.

If an 83 percent top marginal rate could greatly reduce the reported amount of "immoderate" income, as Saez and Zucman promise, that means they must be assuming the highest-income taxpayers will respond strongly to higher marginal tax rates by lowering their taxable incomes. That is, the argument that steep marginal tax rates will result in a steep drop in *pretax* high incomes presumes *high elasticity of income* at high incomes. That, in turn, implies an elasticity of gross income among top taxpayers of *at least* 0.7 (Saez 2004)—unlike the hypothetical 0.2 ETI number that Piketty, Saez, and Stantcheva fashioned to justify an 83 percent top tax rate

Conclusion

Improbably low estimates of the elasticity of taxable income, combined with statistical formulas based on controversial assumptions, have been used to predict a top marginal tax rate that supposedly maximizes short-term revenue on high incomes (though not necessarily in total or in the long run). Although these estimates refer to a combined federal and state marginal income, payroll, and sales tax rate, they are frequently misused in debates about the federal income tax rates alone. Such estimates have been cited by journalists and political figures as proof that the top *federal* tax rate could be safely raised to 70 percent or more, supposedly without damaging economic activity.

Using the Diamond and Saez (2011) formula, despite its shortcomings, I find the calculated revenue-maximizing federal-state-local top tax rate could range from 38.5 percent to 43.9 percent with

parameters consistent with the empirical literature. Yet I estimate that top marginal rates already average 57.4 percent nationwide and exceed 60 percent in major cities.

Piketty, Saez, and Stantcheva (2014) devise the lowest ETI of 0.2 and highest marginal tax rate of 83 percent by starting with an unusually low estimate of an ETI of 0.5 for the top 1 percent, which includes 1965–80 when the top tax rate was unchanged. They claim that the low 0.5 figure can be assumed to drop to 0.2 in the future if (1) CEOs bargain less aggressively after compensation is taxed at an 83 percent rate, and (2) if tax avoidance stops after an 83 percent tax is applied to capital gains, and corporate profits and nations cooperate in tax harmonization and enforcement. These hypotheses appear speculative and empirically unsubstantiated. The authors also assume, questionably, that the future volume of taxable capital gains, corporate profits, and GDP would be unaffected by an 83 percent marginal tax rate.

The Piketty, Saez, and Stantcheva comparison of GDP growth rates with percentage point changes in top tax rates between two data points separated by decades does not show that lower marginal tax rates are unrelated to GDP growth as they claim, but only that countries such as Germany and Japan reduced top tax rates in the 1950s, decades before the United States and United Kingdom.

Raising the top tax rate to 83 percent on all personal income from labor and capital, as Piketty, Saez, and Stantcheva in effect propose, is quite unlikely to be a revenue-maximizing rate if, as Saez and Zucman (2019) affirm, the actual objective is to greatly reduce *pre-tax* incomes of those who would otherwise be reporting much higher income in the affected top tax bracket.

This article has questioned the elasticity estimates, Pareto parameters, and static formulas used to estimate revenue-maximizing flat or progressive tax rates, and it has disputed the multidecade cross-country data cited by Piketty, Saez, and Stantcheva to justify their conjecture that marginal tax rates as high as 83 percent on high incomes would not diminish long-term economic progress.

The Saez (2001) formula used to estimate an optimal top tax rate in a nonlinear tax system is derived from a formula designed for a linear flat tax system, and both have been used to produce almost equally extreme results. In both formulas, the use of low estimates of ETI and Pareto parameter to validate flat or progressive marginal tax rates of 70–83 percent treats those parameters as if they were

constants rather than variables likely to be affected by major changes in marginal tax rates.

Mechanical bookkeeping estimates of a short-term static revenue-maximizing flat tax of 80 percent or top progressive tax rate of 73–83 percent neglect effects on the long-term dynamics of economic growth, including incentives for human capital and innovation. They sidestep the most vital questions about "lowering economic activity."

Any tax penalty on adding to personal income is also a penalty on adding to national income. Income that is not created is also not taxed. Higher marginal tax penalties on the rewards from added education and innovation erode the dynamic long-term growth of the economy and therefore cannot be revenue-maximizing over time, because growth of real government revenues ultimately depends on growth of taxable income and wealth.

References

Akcigit, U.; Grigsby, J.; Nicholas, T.; and Stantcheva, S. (2018) "Taxation and Innovation in the 20th Century." NBER Working Paper No. 24982 (October).

Atkinson, A. B., and Piketty, T., eds. (2010) *Top Incomes: A Global Perspective*. New York: Oxford University Press.

Auten, G., and Splinter, D. (2018) "Income Inequality in the United States: Using Tax Data to Measure Long-Term Trends" (August 23). Available at http://davidsplinter.com/AutenSplinter-Tax_Data_and_Inequality.pdf.

Badel, A.; Huggett, M.; and Luo, W. (2018) "Taxing Top Earners: A Human Capital Perspective." Georgetown University (July 9). Available at http://faculty.georgetown.edu/mh5/research/top-earners.pdf.

Badel, A.; Daly, M.; Huggett, M.; and Nybom, M. (2018) "Top Earners: Cross-Country Facts." Federal Reserve Bank of St. Louis *Review* 100 (3): 237–57.

Bakija, J.; Cole, A.; and Heim, B. (2012) "Jobs and Income Growth of Top Earners and the Causes of Changing Income Inequality: Evidence from U.S. Tax Return Data." Department of Economics Working Papers 2010–22, Williams College (January).

Blomquist, S., and Simula, L. (2019) "Marginal Deadweight Loss When the Income Tax is Nonlinear." *Journal of Econometrics* 211 (1): 47–60.

Bout, A.; Cruz, P.; and Wilby, B. (2019) "S&P 500 CEO Compensation Increase Trends." Harvard Law School Forum on "Corporate Governance and Financial Regulation" (February 6). Available at https://corpgov.law.harvard.edu/2019/02/06/sp-500-ceo-compensation-increase-trends-2.

Burns, S. K., and Ziliak, J. P. (2017) "Identifying the Elasticity of Taxable Income." *Economic Journal* 127 (March): 297–329.

Chetty, R. (2009) "Is the Taxable Income Elasticity Sufficient to Calculate Deadweight Loss?" *American Economic Journal: Economic Policy* 1 (2): 31–52.

Chicago Booth (2019) "IGM Forum: Top Marginal Tax Rates" (January 19). Available at www.igmchicago.org/surveys/top-marginal-tax-rates.

Cummings, J. (2019) "State and Local Sales Tax Rates, Midyear 2019." Tax Foundation *Fiscal Fact* No. 663 (July).

Diamond, P., and Saez, E. (2011) "The Case for a Progressive Tax: From Basic Research to Policy Recommendations." *Journal of Economic Perspectives* 25 (4): 165–90.

Eckstein, O., and Tanzi, V. (1964) "Comparison of European and United States Tax Structures and Growth Implications." In NBER and the Brookings Institution (eds.), *The Role of Direct and Indirect Taxes in the Federal Reserve System*, 217–93. Princeton, N.J.: Princeton University Press.

Feldstein, M. (2011) "The Tax Reform Act of 1986: Comment on the 25th Anniversary." NBER Working Paper No. 17531 (October).

_____ (2012) "The Mirrlees Review." *Journal of Economic Literature* 50 (3) 781–90.

Giertz, S. (2004) "Recent Literature on Taxable-Income Elasticities: Technical Paper 2004–16." Congressional Budget Office (December 1). Available at www.cbo.gov/publication/16189.

Goolsbee, A. (1999) "Evidence on the High-Income Laffer Curve from Six Decades of Tax Reform." Brookings Panel on Economic Activity (September). Available at https://faculty.chicagobooth.edu/austan.goolsbee/research/laf.pdf.

Gorry, A.; Hubbard, R. G.; and Mathur, A. (2018) "The Elasticity of Taxable Income in the Presence of Intertemporal Income Shifting." NBER Working Paper No. 24351 (April).

Gruber, J., and Saez, E. (2002) "The Elasticity of Taxable Income: Evidence and Implications." *Journal of Public Economics* 84 (1): 1–32.

Jaimovich, N., and Rebelo, S. (2017) "Nonlinear Effects of Taxation on Growth." *Journal of Political Economy* 125 (1): 265–91.

Jones, C. (2019) "Taxing Top Incomes in a World of Ideas." NBER Working Paper No. 25725 (April).

Judd, K. L.; Ma, D.; Saunders, M. A.; and Su, C-L. (2018) "Optimal Income Taxation with Multidimensional Taxpayer Types." Stanford University Working Paper (July 1).

Kaplan, S. N., and Rauh, J. (2013) "It's the Market: The Broad-Based Rise in the Return to Top Talent." *Journal of Economic Perspectives* 27 (3): 35–56.

Krugman, P. (2011) "Taxing Job Creators." *New York Times* (November 22).

Kumar, A., and Liang, C-Y. (2018) "Estimating Taxable Income Responses with Elasticity Heterogeneity." Federal Reserve Bank of Dallas Working Paper No.1611.

Loughead, K., and Wei, E. (2019) "State Individual Income Tax Rates and Brackets." Tax Foundation Fiscal Fact No. 643 (March).

Lundberg, J. (2017) "The Laffer Curve for High Incomes." Uppsala University Working Paper No. 2017:9.

Mankiw, N. G.; Weinzierl, M.; and Yagan, D. (2009) "Optimal Taxation in Theory and Practice." *Journal of Economic Perspectives* 23 (4): 147–74.

Mathur, A.; Slavov, S.; and Strain, M. R. (2012) "Should the Top Marginal Income Tax Rate Be 73 Percent?" *Tax Notes* (November 19): 905–15.

Mertens, K., and Olea, J. L. M. (2018) "Marginal Tax Rates and Income: New Time Series Evidence." *Quarterly Journal of Economics* 133 (4): 1803–84.

Murphy, H., and John, M. (2014) "France Waves Discreet Goodbye to 75 Percent Super-Tax." Reuters (December 14).

Neisser, C. (2017) "The Elasticity of Taxable Income: A Meta-Regression Analysis." ZEW Discussion Papers, No. 17–032, Zentrum für Europäische Wirtschaftsforschung. Available at www.econstor.eu/bitstream/10419/168333/1/896808637.pdf.

OECD (Organisation for Economic Cooperation and Development) (2018) Revenue Statistics 2018: Tax Revenue Trends in the OECD. Available at https://read.oecd-ilibrary.org/taxation/revenue-statistics-2018_rev_stats-2018-en#page1.

OMB (Office of Management and Budget) (2019) "Historical Tables." *Budget of the United States Government*. Available at www.whitehouse.gov/omb/historical-tables.

Piketty, T., and Saez, E. (2003) "Income Inequality in the United States, 1913–1998." *Quarterly Journal of Economics* 118 (1): 1–39.

_____ (2004) "Income Inequality in the United States, 1913-2002" (November). Available at https://eml.berkeley.edu/~saez/piketty-saezOUP04US.pdf.

Piketty, T.; Saez, E.; and Stantcheva, S. (2014) "Optimal Taxation of Top Labor Incomes: A Tale of Three Elasticities." *American Economic Journal: Economic Policy* 6 (1): 230–71.

Reynolds, A. (1996) "Economic Prosperity Is No Mystery." *Orbis* (Spring) 199–213.

_____ (1998) "Toward Meaningful Tax Reform in Japan." Presentation to a Keidanren-Cato Institute Symposium (April 6). Available at www.researchgate.net/publication/255614652_Toward_Meaningful_Tax_Reform_in_Japan.

_____ (2004) "Marginal Tax Rates." *The Library of Economics and Liberty Encyclopedia*. Available at www.econlib.org/library/Enc/MarginalTaxRates.html.

_____ (2005) "Compensation, Journalism and Taxes." In W. A. Niskanen (ed.), *After Enron: Lessons for Public Policy*, 245–82. Lanham, Md.: Rowman & Littlefield.

_____ (2012) "The Misuse of Top 1 Percent Income Shares as a Measure of Inequality." Cato Institute Working Paper No. 9 (October 4).

Saez, E. (1999) "Optimal Income Tax Rates and Elasticities: A Summary." *Proceedings: Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association* 92 (1999): 64–71. Available at www.jstor.org/stable/41954637.

_____ (2001) "Using Elasticities to Derive Optimal Income Tax Rates." *Review of Economic Studies* 68: 205–20.

_____ (2004) "Reported Income and Marginal Tax Rates, 1960–2000: Evidence and Policy Implications." In J. Poterba (ed.), *Tax Policy and the Economy*, Vol. 18: 117–73. Cambridge, Mass.: MIT Press for the National Bureau of Economic Research.

_____ (2014) "Income and Wealth Inequality: Evidence and Policy Implications." Video Lecture at University of Chicago Neubauer Collegium for Culture and Society (October 9). Available at https://neubauercollegium.uchicago.edu/directors_lecture/2014_15_directors_lectures/emmanuel_saez.

Saez, E.; Slemrod, J.; and Giertz S. H. (2012) "The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review." *Journal of Economic Literature* 50 (1): 3–50.

Saez, E., and Stantcheva, S. (2018) "A Simpler Theory of Optimal Capital Taxation." *Journal of Public Economics* 162 (June): 120–42.

Saez, E., and Zucman, G. (2019) "Alexandria Ocasio-Cortez's Tax Hike Idea Is Not About Soaking the Rich. It's About Curtailing Inequality and Saving Democracy." *New York Times* (January 22).

Stiglitz, J. E. (1987) "Pareto Efficient and Optimal Taxation and the New Welfare Economics." NBER Working Paper No. 2189 (March).

Tanninen, H.; Tuomala, M.; and Tuominen, E. (2019) *Inequality and Optimal Redistribution.* New York: Cambridge University Press.

Zajac, E. E. (1995) *The Political Economy of Fairness.* Cambridge Mass.: MIT Press.