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Tax Reforms and Political Feasibility

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Questions linked to the design and implementation of redistributive tax policies have occupied a growing position on the public agenda over recent years. Moreover, the fiscal pressures brought upon by the current coronavirus crisis will ensure that these issues maintain considerable political significance for years to come. In light of this importance, we present novel research on reforms of income tax systems. Our approach shows that tax reforms wherein the changes in individual tax burdens are larger for taxpayers with higher incomes are of particular interest. We denote such reforms as "monotonic" and show that, under this condition, it is possible to determine the "winners" and "losers" of a given tax reform. One can then conclude whether the monotonic reform is politically feasible, depending on whether a majority of individuals will benefit financially from the policy. An empirical analysis of tax reforms with a focus on the United States and France reveals that past reforms have, by and large, been monotonic. Our approach therefore enables us to test whether a given tax system admits a politically feasible reform and has direct policy relevance for the common types of taxation reforms undertaken by government authorities.

- Identifying the winners and losers of a tax reform and determining which subset of voters must "win" for a reform to be politically feasible (in the sense that a majority of voters will benefit financially from the policy) is possible when reforms are "monotonic".
- Monotonic reforms are such that individuals with higher incomes experience larger changes in their tax burdens. Examples include: (i) a reform that involves tax cuts for all incomes, with larger cuts for larger incomes; and (ii) a reform that involves higher taxes for everyone, with increases that are larger for the rich.
- In practice, the vast majority of tax reforms are monotonic: among the 394 income tax reforms that took place from 2000-2016 in a panel of 33 OECD countries, 78% were monotonic reforms. In France in particular, 85% of income tax reforms since 1915 have been monotonic.
- The expansion of earnings subsidies schemes (such as the Earned Income Tax Credit in the United States or the *Prime d'activité* in France) is politically feasible.
- Tax cuts that are larger for individuals with higher incomes can be politically feasible if policy-makers work to include the median voter among their beneficiaries.

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Introduction

General Background. The design of redistributive tax policies is an evergreen in the public discourse. Should high-income households be taxed more heavily? Should low-income households be supported by means of earnings subsidies (e.g., the Earned Income Tax Credit in the US or the Prime d'activité in France)? What tax rate should the middle-class face? These questions are of particular concern since major transformations of tax systems have occurred in recent decades, including: (1) a significant decline in top income tax rates in many OECD countries (Piketty, Saez, and Stantcheva, 2011); (2) the introduction and subsequent increase of earnings subsidies (such as the two programs mentioned above for the US and France); and (3) the introduction of sharp progressivity in the middle of the income distribution, which has had detrimental implications for work incentives.[1]

These developments are puzzling from a political economy perspective. Consider the debate on inequality, a prominent topic in OECD countries where concerns about rising inequality (and its consequences) have become central in political discussions. In democratic countries, we might expect rising inequality to be partially offset by an increase in political support for redistribution (Acemoglu et al., 2014). Indeed, this is precisely the prediction of the classical analysis by Meltzer and Richard (1981): higher inequality – as measured by the gap between average and median income – should lead to an increased political pressure to engage in redistributive taxation. That such theoretical predictions have not borne out in practice provides just one illustration of the difficulties faced when predicting the outcomes of political competition over tax policies. These challenges stem from the fact that the multiple policy instruments which make up contemporary tax and transfer systems (such as tax rates, the tax base, loopholes, etc.) have dynamic and countervailing effects - as a result, we lack a comprehensive understanding of the political and economic factors that influence the development of tax policies. Such complexities, however, provide ample opportunity for research that addresses pressing questions at the crossroads of politics and taxation.

Politically Feasible Income Tax Reforms. In light of the topic's clear importance to today's economic climate, we have developed a novel framework to assess income tax reforms through the lens of political feasibility (Bierbrauer, Boyer, and Peichl, 2021). To do so, we define a politically feasible tax reform as an adjustment to the tax schedule that leaves a majority of the population better off financially. This policy note provides an overview of the promising applicability that our approach holds for the development of income tax policies in OECD countries, which we illustrate through a handful of historical examples shown below. Our research examines the political support for tax reforms in contrast to tax systems themselves, due to the clear relevance that the status quo tax policy[2] has for today's policy debate. Several examples illustrate this point. First, the status quo policy is important in practice as political proposals often refer directly to it. A brief look at the campaign manifestos of Donald J. Trump for the 2016 US presidential election and François Hollande for the 2012 French presidential election helps make this clear by revealing explicit references to existing tax schedules: In particular, the Trump plan stated that "[t]he current number of brackets" would "be reduced from seven to three" (Bump, 2019), while Hollande proposed to "make the wealthiest French residents contribute to the national effort by introducing an additional tax rate of 45% for incomes above 150,000 euros" (Liberation, 2012).[3] Second, think tanks and policy analysts usually present the impact of reform proposals on different taxpayers with respect to the status quo (see, for example, Fabre et al., 2020, or the analyses by the Tax and Policy Center reviewed in Bierbrauer, Boyer, and Peichl, 2021). Our approach therefore presents government authorities with a novel framework to assess the desirability of tax reforms and holds clear relevance to the process through which policy-makers typically conceive and discuss these changes.

Our Research. We demonstrate that "monotonic" tax reforms - reforms such that changes in individual tax burdens are larger for taxpayers with higher incomes – are of particular interest both from a theoretical as well as a practical perspective.[4] As we show below, the vast majority of income tax reforms observed in the past, and proposed during political campaigns and legislative debates, have been monotonic. This is evident both from an observational analysis of historical tax reforms in OECD countries (with a particular attention given to France), as well as an in-depth microsimulation analysis of major past changes to the US tax system.

From a theory perspective, if a reform is monotonic then a majority of the population will be in support of the policy if and only if the voter with median income is among its beneficiaries. This result makes it easy to study the political feasibility of any monotonic tax reform, as one only needs to determine whether the median income voter

[1] Evidence of this pattern for the US is presented in Bierbrauer, Boyer, and Peichl (2021). Similar observations apply to Germany (where the problem is referred to as the "Mittelstandsbauch" or "middle-class belly" - see Böcking and Hove, 2016), the Netherlands (Jacobs, Jongen, and Zoutman, 2017), or France (Bierbrauer and Boyer, 2018).

[2] The status quo tax policy simply refers to the existing tax schedule at a given point time.

[3] The original quotation, which we have translated from French, was "Je ferai contribuer les plus fortunés des Francais à l'effort national en créant une tranche supplémentaire de 45% pour les revenus supérieurs à 150 000 euros par part".

[4] Examples of monotonic tax reforms in practice are: (1) reforms that involve tax cuts for all incomes, with larger cuts for larger incomes; and (2) reforms that involve higher taxes for everyone, with increases that are larger for the rich.

stands to benefit in order to know if a majority of voters will also gain from (and thus be in favor of) the policy.[5] It is also informative of the direction we should expect tax reforms to follow: the median voter will be in favor of reforms that either raise tax rates above her income, or that lower tax rates up to (and including) her income.

To determine whether a given reform is politically feasible, we identify upper and lower tax rate thresholds. Monotonic tax cuts for below-median incomes, and monotonic tax increases for above-median incomes, will leave a majority of the population better off if an only if the post-reform tax schedule falls between these two thresholds. In other words, these limits – which we denote "Pareto bounds" – characterize the availability for government authorities to adjust income tax rates in a politically feasible way.[6] In our analysis below, we display three cases of upper and lower Pareto bounds for major past reforms of the US federal personal income tax schedule. We show that these governments had more leeway to reduce taxes on "the poor" than they ultimately took advantage of, while the scope for feasible tax increases on "the rich" proved less clear-cut.

Tax Reforms in Theory and Practice

Tax Reforms in OECD Countries. First, we take a broad overview look at the annual changes of statutory tax rates in 33 OECD countries for the years 2000–2016. The OECD provides annual data on the statutory tax systems of its member countries.[7] In particular, for singles without dependents, it documents tax brackets and tax rates for labor income. We use this information to construct a tax function, which calculates an individual's income tax obligations for a given calendar year. A reform takes place when this function changes from one year to the next and is classified as monotonic when the change of the tax burden is larger for individuals with higher incomes.

Table 1 shows that 78% of the reforms in the sample were monotonic. The remainder include reforms that are monotonic either above or below the median, and reforms with non-monotonicities that seem economically negligible. We provide more specific examples in the supplementary material of Bierbrauer, Boyer, and Peichl (2021).

[5]This result follows from the fact that monotonic tax reforms do not, in theory, affect the "rank" of individual incomes.

[6]Note that our reasoning mimics that found in common discussions of "Laffer Bounds". Laffer Bounds define the range of tax rates over which governments can adjust the income tax schedule without decreasing government revenues (since, as it is often argued, inefficiently high tax rates will reduce the base of taxable income significantly by discouraging economic activity, while inefficiently low tax rates will simply yield low tax revenues). Although the idea of an inverse U-shaped relationship between tax rates and government revenues is often attributed to Arthur Laffer (an economic advisor under the Reagan administration), the French engineer Jules Dupuit already formalized these insights in an academic article from 1844 (Dupuit, 1844).

[7]See: https://stats.oecd.org/index.aspx?DataSetCode=TABLE_I1.

Table 1: Monotonic tax reforms in a panel of 33 OECD countries (2000-2016).

Total number of possible reforms:	528	
Total number of reforms:	394	
Number of monotonic reforms:	309	(78%)
Number of non-monotonic reforms:	85	(22%)

Notes: Table 1 is based on the OECD database (Table I.1. Central government personal income tax rates and thresholds) discussed in Bierbrauer, Boyer, and Peichl (2021) - see footnote 7. "Total number of possible reforms" corresponds to the number of years covered in the data, while "Total number of reforms" is simply the number of reforms enacted.

Tax Reforms in France. We now show that the tendency for monotonic tax reforms within the OECD can be observed when looking at the history of French tax reforms, using the Institut des politiques publiques (IPP) database.[8]

Table 2 reports the monotonicity of all French income tax reforms since the first application of the tax in 1916. Monotonic reforms are the usual type of reform observed in France, making up 85% of those identified in our data. In the whole of French history, we observe just 11 non-monotonic reforms.

Table 2: Monotonic tax reforms in France (1915-2016).

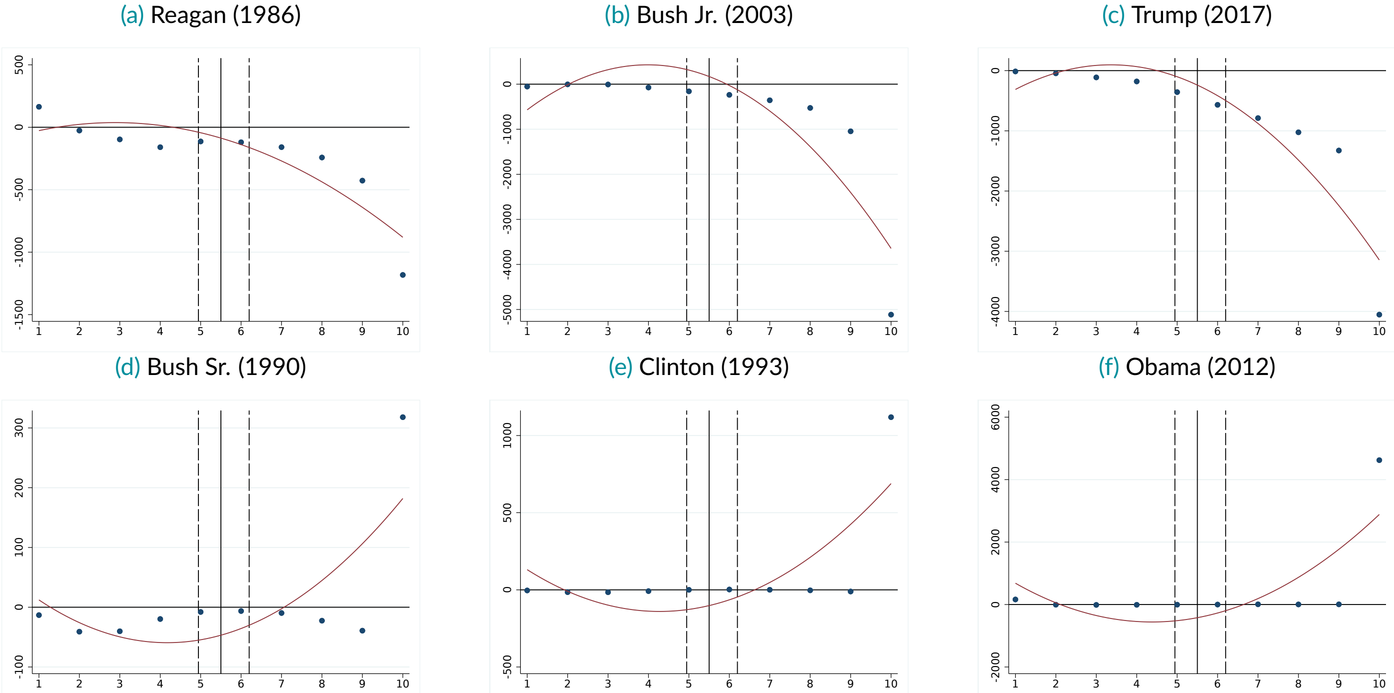
Total number of possible reforms:	100	
Total number of reforms:	76	
Number of monotonic reforms:	65	(85%)
Number of non-monotonic reforms:	11	(15%)

Notes: Table 2 is based on the IPP database mentioned previously - see footnote 8. "Total number of possible reforms" corresponds to the number of years covered in the data, while "Total number of reforms" is simply the number of reforms enacted.

Tax Reforms in the United States. We also take an in-depth microsimulation analysis of all major federal income tax reforms in the US since 1964 and find that they were, by and large, monotonic. Monotonic tax cuts – i.e., larger tax cuts for richer taxpayers – were the most prevalent reform type. The first row of Figure 1 provides three examples of such reforms under the Reagan, Bush Jr. and Trump administrations. The second row of Figure 1 also displays the findings of three income tax reforms that led to higher taxes on the top decile of American taxpayers under the Bush Sr., Clinton and Obama administrations. Regardless of the type of reform displayed in Figure 1, we see that changes in individual tax burdens are typically larger for higher-income deciles, with the most significant changes observed among the top decile of taxpayers. A step-by-step breakdown of our microsimulation methodology is presented in Box 1.

[8]See: https://www.ipp.eu/baremes-ipp/. Historical accounts of French income tax reforms can be found in Piketty (2001), Delalande (2011), and André and Guillot (2014).

Figure 1: Average reform-induced change in tax liability (y-axis) among income deciles of American taxpayers (x-axis)



Notes: Figure 1 shows the average value of the change in tax liability by decile for six reforms of the US federal personal income tax: the Reagan Tax Reform Act of 1986, the Bush Jobs and Growth Tax Relief Reconciliation Act of 2003, the Trump Tax Cuts and Jobs Act of 2017, the Omnibus Budget Reconciliation Acts of 1990 and 1993 done by the Bush Sr. and Clinton administrations respectively, and the Obama American Taxpayer Relief Act of 2012. The red line represents a quadratic fit. Deciles are computed based on pre-tax income without capital gains while the tax base includes capital gains. All computations are on the individual level. The vertical lines show different locations for the median voter: the dashed line to the left imputes non-filers to the tax return data, while the dashed line to the right accounts for differential turnout by income. The solid line in the middle represents both the original median in the data as well as the one accounting for both modifications simultaneously.
Source: Figure 2 in Bierbrauer, Boyer, and Peichl (2021), see also Box 1 below.

Box 1 : Microsimulation Methodology

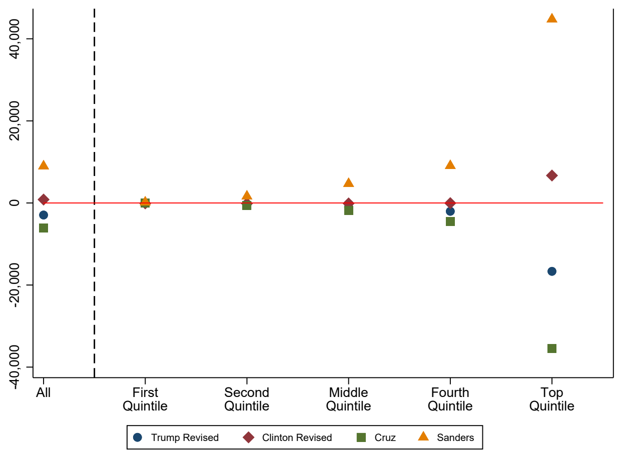
Our analysis of the United States is based on the NBER's microsimulation model TAXSIM and tax return microdata. Specifically, we use the public use files of tax return microdata from the Statistics of Income division of the IRS, which is provided by the NBER (Feenberg, 2012). These data include all information reported on individual tax returns from 1960 to 2012, which are available biannually for the years 1960–1966 and annually for the years 1966–2012. We use TAXSIM to calculate income and payroll taxes, as well as tax credits.

We construct a counterfactual measure of the change in a taxpayer's tax burden that is only due to the reform, holding all individual characteristics, including the person's income, constant. Let T_0 be the tax system just prior to a given reform and T_1 be the tax system immediately after it. We observe an individual i's pre-tax income y_0^i, and all further characteristics relevant to compute the individual's tax burden in the base period. We then use TAXSIM to calculate the person's tax payment $T_0(y_0^i)$. To account for the fact that T_1 becomes effective in the future, we compute an inflation-adjusted version of y_0^i that we denote by $\hat{y}_0^i$. Our measure of the reform-induced change of the person's tax burden is then $T_1(\hat{y}_0^i) - T_0(y_0^i)$. To see whether the given reform was a monotonic tax reform, we then rank individuals according to pre-tax income and investigate to what extent tax units with higher incomes experience larger changes of their tax burden than individuals with lower incomes.

For robustness, we invoke alternative ways of determining the median in the income distribution. First, there is the median position in the tax return data we are using. Second, we make a correction for non-filers, i.e., low-income households who do not submit a tax declaration. The new median income is then poorer than the one in the original data. Third, for a political economy analysis, the median income among voters is relevant. Since richer individuals are more likely to turn out, the median voter is richer than the median taxpayer in our data. Taking into account both non-filers and differential turnout brings us coincidentally back to the median position in our data, i.e., these effects neutralize each other.

Reform Proposals and the 2016 US Elections. Does the finding that tax reforms are, by and large, monotonic, extend to tax reform proposals which are publicly debated but not enacted? Providing an answer faces the challenge that such reform proposals often remain vague, so that researchers have to make assumptions about the missing details. To avoid own judgment calls, we invoke the systematic analysis of reform proposals in the United States that is provided by the Tax Policy Center.[9] Their analysis covers 69 reform proposals for the federal personal income tax that were made in the period 2003–2019: some proposals were made during presidential campaigns and primaries, while others were put forth by administrations during the legislative process but did not come into effect. Our findings for all 69 proposals reveal that the large majority of tax reform proposals are monotonic. Figure 2 provides an illustration of the results for key proposals made during the 2016 US presidential campaign and primaries, showing the average change in tax liability (on the y-axis) by income quintile (on the x-axis) for the policies presented by four prominent electoral candidates. The proposals by the two Democratic candidates were of the "tax increase on the rich" type while the Republican proposals were of the "tax cuts for everybody" type. Regardless of the type of reform shown, each proposal in this figure involves larger changes in individual tax burdens for higher-income quintiles.

Figure 2: Changes in tax liability (y-axis) by income quintile (x-axis), 2016 US elections



Notes: Figure 2 shows the average value of the change in tax liability for reform proposals made during the 2016 presidential campaign and primaries for the US federal personal income tax, by income quintile. The first column shows the overall tax change.
Source: Figure 4 in Bierbrauer, Boyer, and Peichl (2021), based on Tax Policy Center data.

[9] The Tax Policy Center is a prominent non-partisan think tank located in Washington, D.C., known for its influential analyses of issues linked to American tax policy. See https://www.taxpolicycenter.org/.

Political Feasibility of Reform Direction

Tax Reforms in the United States. We now turn our attention to marginal income tax rates – i.e., the rate applied to the last unit of income that an individual earns[10] – as the decision to earn additional income depends on how this income is taxed and/or subsidized. Looking at changes in marginal tax rates is therefore necessary to assess the implications of a given tax reform for tax revenues. We study whether US tax reforms in the past led to lower marginal tax rates below the median income, possibly in connection with higher rates above the median, and, in any case, more pronounced progression over a range of middle incomes. We argue that the introduction and subsequent expansions of the Earned Income Tax Credit indeed led to lower marginal tax rates for low incomes and more pronounced progression for slightly higher incomes, with no shift toward higher tax rates for above-median incomes.

To provide a more detailed explanation of these observations, we derive upper and lower Pareto bounds. As noted above, these thresholds determine the range over which reforms toward higher marginal tax rates above the median income, and toward lower marginal tax rates up to (and including) the median income, are politically feasible. The amount of "space" that governments have to undertake such adjustments depends on the behavioral response to taxation – i.e., the extent to which individuals reduce their economic activity following an increase in income tax rates. Whether a change of the tax system generates large or small behavioral responses from taxpayers is captured by the elasticity of taxable income (ETI), and this parameter has implications for the efficiency of the reform. For instance, if this elasticity is low and taxpayers face an increase in their tax rates, we can expect the revenue generated by the reform to be significant.

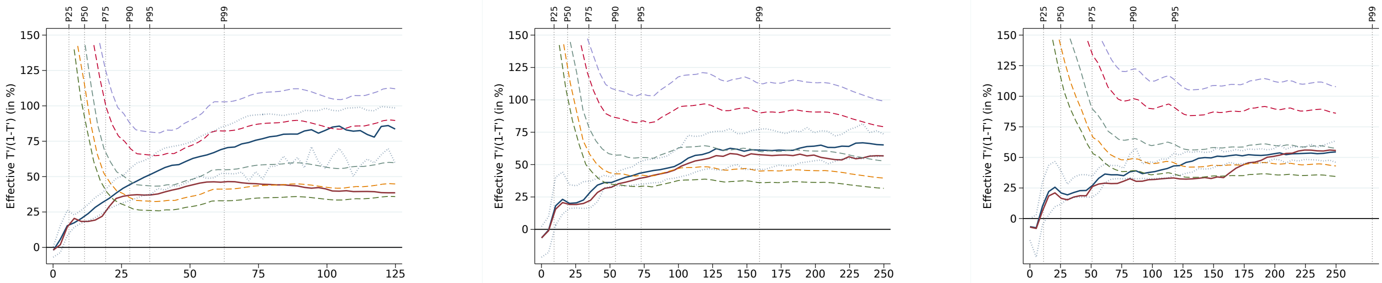
Figure 3 shows the pre- and post-reform values (in blue and red, respectively) of the ratio $T'(y)/(1-T'(y))$, which is a function of the effective marginal tax rate $T'(y)$.[11] It also displays the upper Pareto bound (in colored dashed lines) for different values of the ETI.

The purpose of this analysis is to assess whether, and under which conditions, past reductions in the US federal income tax can be justified on the grounds of political feasibility. This would be the case if the effective marginal tax ratio had initially crossed the upper bound in a given sub-figure (indicating an inefficiently high status quo tax schedule), and was subsequently brought below

[10] In the vast majority of modern tax systems, tax rates are organized by income "bracket" such that individuals pay different levels of taxes over different ranges of their incomes.
[11] We present the effective marginal tax rates in this ratio format as the expression allows for a straightforward determination of the ETI. The effective marginal tax rate accounts for the impact of changes in government benefits, in addition to the effect of income tax, on an individual's earnings as their income increases.

Figure 3: Upper Pareto Bounds

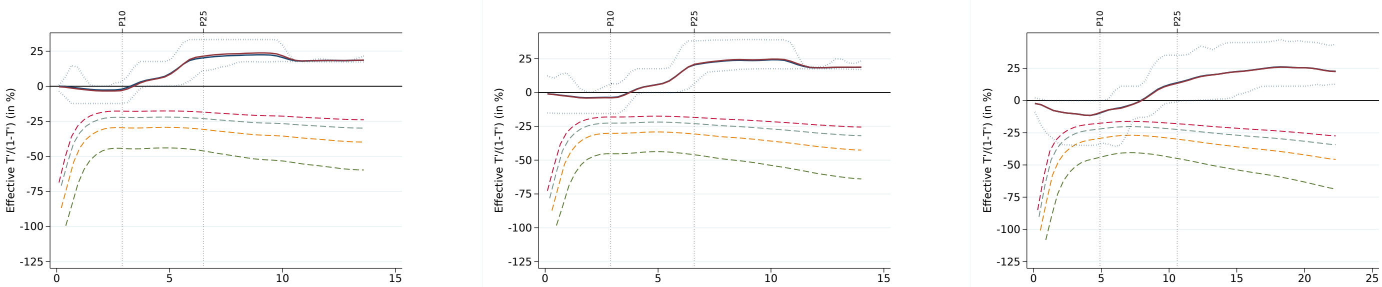
(a) Reagan (1986) (b) Bush Jr. (2003) (c) Trump (2017)



Notes: Figure 3 shows the ratio $T'/(1-T')$ of the effective marginal tax rates before (solid blue line) and after (solid red line) for three major reforms of the US federal personal income tax: the Reagan Tax Reform Act of 1986, the Bush Jobs and Growth Tax Relief Reconciliation Act of 2003, and the Trump Tax Cuts and Jobs Act of 2017. The dashed lines are the upper Pareto bounds for five different values of the elasticity of taxable income: 0.25 (khaki), 0.4 (lavender), 0.5 (cranberry), 0.75 (teal), 1 (orange) and 1.25 (green). Vertical dashed lines show different percentiles of the income distribution.
Source: Figure 8 in Bierbrauer, Boyer, and Peichl (2021), see also Box 1.

Figure 4: Lower Pareto Bounds

(a) Bush Sr. (1990) (b) Clinton (1993) (c) Obama (2012)



Notes: Figure 4 shows the ratio $T'/(1-T')$ of the effective marginal tax rates before (solid blue line) and after (solid red line) for three major reforms of the US federal personal income tax involving earning subsides (Earned Income Tax Credit): the Omnibus Budget Reconciliation Acts of 1990 and 1993 done by the Bush Sr. and Clinton administrations respectively, and the Obama American Taxpayer Relief Act of 2012. The dashed lines are the lower Pareto bounds for four different values of the elasticity of taxable income: 5 (cranberry), 4 (teal), 3 (orange) and 2 (green). Vertical dashed lines show different percentiles of the income distribution.
Source: Figure 9 in Bierbrauer, Boyer, and Peichl (2021), see also Box 1.

this threshold by the reform in question. The first reform in Figure 3, undertaken by the Reagan administration, involved larger tax cuts for richer taxpayers and can be rationalized as being politically feasible for an ETI above 0.5, but not for lower values. The 2003 tax cuts from the Bush Jr. administration and the 2017 Trump tax plan are only politically feasible for an ETI above 0.75. In other words, whether these policies left the majority of the population better off depends on the extent of the behavioral response to taxation.

Figure 4 shows the pre- and post-reform values (in blue and red, respectively) of the ratio $T'(y)/(1-T'(y))$ for three additional reforms of the US federal income tax, along with the lower Pareto bound (in colored dashed lines) for different values of the ETI. Similar to before, we are interested in determining whether these policies moved the effective marginal tax rate ratio away from an inefficiently low tax schedule. Each reform in Figure 4 gives rise to the same conclusion: the lower bound came nowhere close to the pre- or post-reform systems. Hence, lower tax rates for "the poor" were politically feasible. The introduction and subsequent expansion of the Earned Income Tax Credit from the mid-1970s onward went in this direction, but did not take advantage of the full scope for politically feasible earnings subsidy expansions.

Tax Reforms in France. Our in-depth analysis of the US case raises the question of whether comparable insights can be drawn for France at the dawn of the 2022 French presidential election. Additional research extending this framework to past reforms of the French tax schedule indeed points to similar conclusions (Bierbrauer and Boyer, 2018). In particular, whether or not the upper Pareto bound is crossed by the initial tax schedule depends on the estimated value of the ETI. Over the last decade, the French tax schedule has been situated closer to its corresponding upper bound than that of the United States for any chosen ETI estimate,[12] though this does not change

[12] In other words, the French tax schedule presented less room for politically feasible tax increases (or, conversely, provided stronger justification for tax cuts on above-median incomes).

the nature of our underlying interpretation. Moreover, as in the US case, looking at the lower Pareto bound reveals a sizeable gap between this threshold and both the pre- and post-reform tax schedules for reforms previously undertaken in France. These findings illustrate the promising applicability of our framework for politically feasible tax reform analysis beyond the US context.

Conclusion

The current coronavirus crisis will put an unprecedented pressure on public finances. Raising revenues will be a priority once the virus recedes, and political feasibility and fairness issues will be crucial to avoid fiscal revolts as in the French Yellow Vests protests (Boyer et al., 2019; Boyer et al., 2020). Tax systems have often been redesigned after major historical events and our ability to take these requirements into account moving forward will be severely tested. The research outlined in this policy note has identified an unambiguous capacity for politically feasible expansions of earnings subsidy programs in the United States and France, with a less clear-cut scope for changes to top marginal tax rates in these countries. Given the prevalence of monotonic reforms across the OECD, future research can help extend this framework to a range of cross-national contexts. While conducting these analyses, recent literature contributed to our understanding of what people know and learn about tax policies, and how their support for different policies is determined (Stantcheva, 2020). Our approach can help further contribute to this agenda and inform the development of tax policies both during this critical period and into the foreseeable future.

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