The Long Lasting Effects of Warfare on Tax Progressivity: Evidence from World War II

Jose Alvarado, Tomás Wilner

November 2024

Abstract

This paper examines the long-term effects of massive warfare on taxation, using evidence from World War II. We conduct an event study analysis, with participation in the war serving as the event of interest. The main findings reveal that countries that participated in World War II had top income tax rates approximately 20% higher compared to the year before entering the war, relative to non-participating countries. This effect persists at roughly the same level for up to fifty years after the war. Interestingly, even seventy years after World War II, this effect remains at 10

> *"The experience of total war is (...) bound to have an effect on both the principles of social policy and the methods of social administration. But the nature of this effect will depend (...) on whether a country is invaded or not, on whether it is victorious or defeated, and on the amount of physical destruction and social disorganization it suffers."*
>
> Thomas Marshall, 1965, p.82

1 Introduction

Why do taxes on the rich differ among countries? Progressive taxation is typically observed in developed nations; however, the degree of tax progressivity varies significantly across countries. Over time, a persistent disparity in tax progressiveness has been maintained—not only among European nations but also when comparing European countries with those outside the continent. Interestingly, despite the evident and enduring nature of this difference, researchers have offered limited explanations and discussions on the subject. Why does this disparity exist?

The economic literature has primarily focused on normative analysis rather than offering positive insights into this matter. A substantial body of research on optimal taxation and fiscal policy has delved deeply into the welfare and general equilibrium effects of taxes (see, for example, Diamond and Mirrlees 1971, one of the seminal theoretical papers in this area, and Chari and Kehoe 1999, which adopts a quantitative approach). However, few studies have provided positive analysis on this subject. The limited positive research available largely originates from the political economy literature, which tends to rely on theoretical models without presenting compelling empirical evidence to validate their theories (see Persson, Tabellini, et al. 2000 and Yared 2010).

In this paper, we aim to address a gap in the literature by investigating whether the persistent differences in top tax rates[1] observed across countries can be explained by their participation in large-scale wars. Specifically, we provide evidence that World War II acted as a significant shock to tax systems, resulting in highly persistent effects. Even 50 years after the war, the difference in top tax rates between participant and non-participant countries remains around 20%, after controlling for several factors.

1. By "top tax rate," we refer to the highest income bracket subject to taxation.

To this end, we employ an event study analysis, referred to as our main specification, which enables us to quantify the long-term effects of World War II over several decades. While previous studies have explored the relationship between warfare and taxation (e.g., Scheve and Stasavage 2010), to the best of our knowledge, we are the first to provide evidence of such a highly persistent effect over time. Our findings demonstrate not only a significant immediate impact following large-scale warfare episodes but also a lasting influence on tax progressivity. This enduring effect represents the primary contribution of our paper.

The mechanism we propose to explain these long-lasting effects is closely aligned with the ideas presented by Obinger and Petersen (2017), who describe how mass warfare generated significant social needs. The catastrophic outcomes of World War II created a strong demand for income support, which governments addressed, resulting in a substantial increase in social expenditure. Furthermore, experiencing such traumatic events at an early stage of life shifted individual preferences toward greater stability, security, and collective insurance (Dryzek and Goodin (1986)). An immediate response to meet the increased revenue requirements was to raise income taxes on the wealthy—both those who were affluent before the war and those who profited significantly during it. Over time, as voter preferences evolved during and after the war, reducing these taxes became widely unpopular. This shift in public sentiment contributed to the enduring effects on tax progressivity that we observe in the data.

Nonetheless, beyond the context of war, several theories have sought to explain why some nations tax the rich more heavily than others. However, none of these theories have been widely accepted in the political science literature, as empirical evidence has often been inconclusive. First, One prominent theory suggests that greater democratization and the expansion of suffrage lead to increased taxation on the wealthy. Second, another hypothesis posits that high levels of inequality drive heavier taxation on the rich. A third explanation argues that the wealthy are taxed more heavily only when their influence is sufficiently diminished,

rendering them unable to block tax increases. Finally, some contend that politicians avoid taxing the rich due to concerns that such measures may harm economic performance.

The first theory is grounded in a simple and compelling idea: in a democracy, the outcome of elections is determined by numbers, and it is well-known that the poor and middle classes significantly outnumber the rich. This dynamic should, in theory, lead elected politicians to favor higher taxes on the wealthy. A similar logic applies to the effect of expanding suffrage. As poorer populations gain access to voting, the likelihood of taxing the rich should increase (Acemoglu and Robinson (2000)). While the democracy and universal suffrage theory may explain the emergence of income taxation, it falls short in addressing why the wealthy are taxed more heavily in some countries than in others. Empirical evidence does not fully support the basic intuition behind this theory. Throughout the twentieth century, countries adopted universal suffrage at different times. If the theory held true, we would expect nations that adopted universal suffrage earlier to have imposed heavier taxes on the rich earlier as well. However, this pattern is not reflected in the data (see Scheve and Stasavage 2016 for a more comprehensive discussion on this topic).

The second theory suggests that governments implement higher taxes on the rich as a means to reduce inequality, under the premise that voters favor corrective policy actions to address disparities among citizens. While there is a negative correlation between taxation and inequality, evidence indicates that the causal relationship is uni-directional: higher taxes lead to lower inequality, not the other way around. For example, the significant increase in taxes after World War II contributed to a reduction in inequality, whereas the tax cuts of the 1980s coincided with a rise in inequality. These empirical findings have been extensively explored by economist Thomas Piketty (see Piketty (2015), for instance).

The third theory builds on the first, recognizing that it would be naive to assume that all

individuals in a democracy wield equal influence over policymaking. Wealth, by its nature, likely provides an additional advantage in shaping policy decisions. The United States often serves as an example of this hypothesis. American political campaigns have increasingly depended on contributions, a trend amplified by the U.S. Supreme Court's 2010 decision in Citizens United v. Federal Election Commission. This institutional framework has led the U.S. Congress to legislate in ways that align more closely with the preferences of high-income constituents (see Gilens (2012)). While this theory offers a compelling explanation for the U.S.'s recent history, it struggles to fit into a broader framework explaining why the wealthy are not heavily taxed in other contexts. For instance, why did Canada abolish its inheritance tax in 1971, despite publicly financed political campaigns at the time? Similarly, Scandinavian countries, where money plays a far less significant role in politics compared to the U.S., have also taken actions to reduce taxes on the wealthy. These examples suggest that the influence of wealth in policymaking, though significant in some cases, is not the sole determinant of tax policy outcomes.

The final theory is rooted in an efficiency argument. Governments often avoid taxing the rich to promote economic efficiency, as higher taxes can distort economic incentives, reduce investment, and affect labor supply, ultimately impacting overall welfare. This argument has been a cornerstone of the optimal taxation literature, with Mirrlees 1971 being one of the first to formalize and advance this idea. However, the argument regarding incentives predates Mirrlees' work, having been present since the early discussions of progressive taxation. This raises an important question: why were efficiency concerns insufficient to prevent taxes from being significantly raised after World War II?

We are not suggesting that none of these theories contribute to explaining top tax rates. On the contrary, we recognize democracy as a necessary condition for increasing the likelihood of implementing redistributive policies. However, we argue that democracy alone is insufficient

to fully explain why the rich are taxed more or less in different contexts. Instead, we propose that there are larger driving forces that, despite the influence of the wealthy in politics or concerns about economic efficiency, ultimately lead to heavier taxation on the rich. These "larger driving forces" are closely tied to the economic and social consequences of warfare. As discussed earlier, the induction of social needs and the shifting of individual preferences resulting from massive warfare are, in our view, the primary mechanisms through which war exerts its long-lasting impact on tax systems. This makes war the central driver behind these outcomes.

A vast body of Political Science and Economic History literature has analyzed and validated the connection between war and the rise in taxes. Elucidating how warfare can drive fiscal reforms, Dincecco, Federico, and Vindigni (2011) argue that external and internal threats significantly influenced the demand for military strength in Italy, paving the way for critical changes in fiscal policy and increasing the likelihood of constitutional reform. Along similar lines, Sabaté (2016) demonstrates that the relationship between warfare and fiscal expansion follows an inverted "U-shaped" pattern, where advancements in military tactics and technology historically drove public revenues upward—until the destructive power of nuclear weapons reached a threshold, marking an inflection point when large-scale military conflicts among great powers became politically unacceptable. Additionally, Scheve and Stasavage (2012) provides a more precise perspective, showing that while inheritance tax rates have existed for centuries, their capacity to significantly affect wealth inequality is a much more recent phenomenon—primarily driven by the political conditions created by mass mobilization for war. More recently, Obinger and Schmitt (2020) employed Poisson regressions to demonstrate that both World Wars served as catalysts for welfare legislation, particularly in countries heavily exposed to the devastating effects of war.

The papers most closely related to ours are those by Dincecco and Prado (2012) and Scheve

and Stasavage (2010). The former demonstrates how the persistent changes in progressive taxation brought about by war helped shape modern institutions. However, their analysis assumes the effect of warfare on fiscal policy as given and focuses on how the persistence of these fiscal innovations impacted GDP per worker. They do not attempt to explain or account for the reasons behind this persistence. The latter, by contrast, provides clear evidence of the effect mass warfare mobilization has had on fiscal policy, particularly on progressive taxation. They show that participation (or lack thereof) in World War I was the primary determinant of a boost (or absence) in tax progressiveness, with a notable jump in the taxes paid by the wealthy during and shortly after the war. They argue that the perceived unfairness of a situation where some sacrificed at the front while others profited at home created strong public demand for increased taxation on the wealthy. However, their analysis centers on a "single-period" shock, capturing the average effect immediately following World War I, rather than the persistence and long-term dynamics of taxation over time.

As discussed earlier, this paper seeks to explore the reasons why differences in progressive tax rates persist across countries over time. Figure 1 below illustrates the average difference in top marginal income tax rates between World War II participant and non-participant countries over the years.[2] The red lines indicate the 95% confidence intervals. Although participant countries already had higher top tax rates than non-participants prior to World War II, the figure reveals a sharp increase in the difference around 1940, shortly after the war began. This difference remains significantly elevated until approximately 2010, at which point it converges to levels similar to those observed just before the war. It is important to emphasize that we are not asserting causality; the figure should be interpreted as showing an unconditional correlation. Nevertheless, it provides preliminary evidence of the enduring impact of warfare on top tax rates.

2. The average difference was calculated by regressing, separately for each year, the top marginal income tax rate on a constant and a World War II participation dummy.

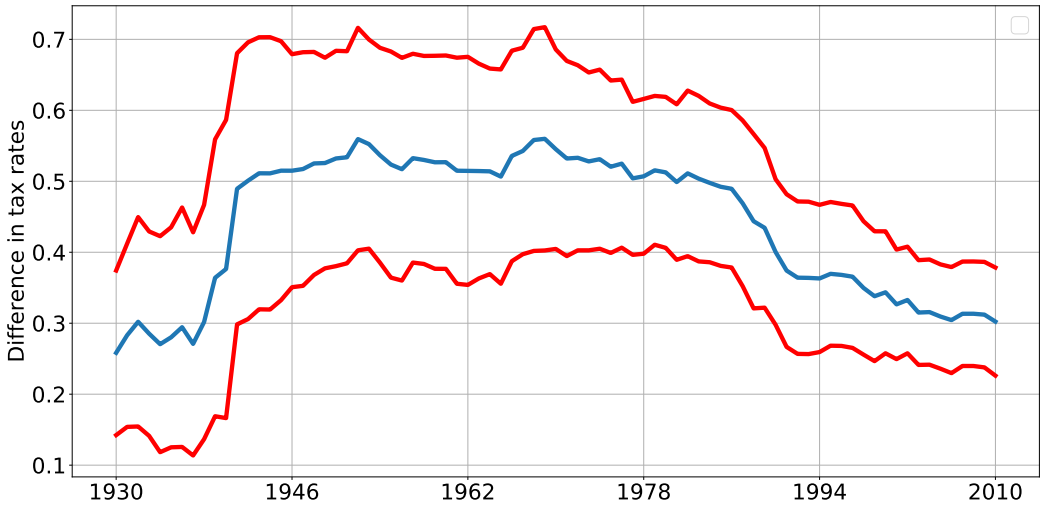

Figure 1: Difference in top tax rates between World War II participants and non-participants
Source: Comparative Income Taxation Database

The paper is organized as follows: Section 2 provides a historical background on how the consequences of World War II prompted governments to increase taxes. Section 3 details the data used in our analysis. In Section 4, we describe the econometric models, present the identification strategies, and analyze the results. Finally, Section 5 concludes.

2 Historical Background

World War II was one of the most costly and devastating conflicts in modern history. Historians estimate that between 70 and 85 million people died as a result of direct and indirect causes of the war. Germany, one of the central participants, lost approximately 8% of its population, while the United Kingdom experienced a loss of around 2%.

In addition to the immense loss of human lives, World War II incurred staggering material costs. According to the Encyclopaedia Britannica, approximately 30% of homes in the United Kingdom were destroyed or damaged. The destruction was even more severe in

Eastern Europe, where 60% of public offices, schools, and scientific facilities were obliterated. Germany also faced exorbitant material losses as the Allies advanced into its territory. The United States Strategic Bombing Survey reports that 39% of dwellings in bombarded German cities were destroyed or damaged. Compounding these challenges, countries occupied by German forces were required to pay occupation costs. For instance, France contributed occupation costs equivalent to approximately 11% of German national income (Boldorf and Scherner (2012)).

The war also resulted in widespread shortages of food, commodities, and labor, leading to inflation and declining output. Toward the end of the conflict, the demobilization of veterans caused a rise in unemployment. Fearing unrest or revolution from those who had risked their lives for the nation, many governments introduced emergency benefits for returning military personnel. In some cases, such as in Britain, these benefits evolved into universal welfare programs.

Once the war ended, governments faced the critical question of how to rebuild their countries. Political scientists suggest that there was a growing demand for compensation. Scheve and Stasavage (2016) argue that war mobilization significantly influenced people's beliefs about tax fairness. In countries that endured the consequences of war, compensatory arguments emerged, increasing public support for higher taxes on the wealthy. The impact of beliefs on tax systems has also been discussed in the economic literature. For instance, Piketty (1995) presents a theoretical model in which voters' beliefs are shaped by their past individual experiences and information.

An example of these compensatory arguments can be found in the Labour Party's manifesto, which helped secure their victory in the general election held just two months after Germany's surrender:

> *"The gallant men and women in the Fighting Services, in the Merchant Navy, Home Guard, and Civil Defence, in the factories and in the bombed areas - they*

deserve and must be assured a happier future than faced so many of them after the last war. Labour regards they welfare as a sacred trust."

Notably, the Labour Party won the election by a significant margin, despite Churchill's considerable personal popularity. Their campaign focused on ensuring fair burden-sharing, a message that resonated strongly with voters.

France experienced a similar phenomenon after the war. The provisional government, the Conseil National de la Résistance (CNR), composed of various political groups including communists and conservatives, launched a program known as "Happy Days" to rebuild the nation. A key element of the CNR's program was the implementation of a progressive tax on war profits.

Germany also faced a significant debate on how to compensate those who suffered the consequences of the war. In 1948, the Equalisation of Burdens Act was introduced, a landmark piece of legislation aimed at ensuring a minimum standard of living for those affected by the war. Among its provisions was a 50% tax on real assets, effectively a form of wealth tax. This policy was designed to redistribute wealth by transferring assets from the rich to the broader society.

Another example of the impact of World War II on attitudes toward taxation can be found in the United States. Survey data from the period provides suggestive evidence of this phenomenon. In 1941, Gallup conducted a survey asking: "In order to help pay for defense, the Government will be forced to increase income taxes. If you were the one to decide, how much income tax, if any, would you ask a typical family of four with an income of $1,000 to pay?" After the attack on Pearl Harbor, the survey was repeated. The results indicate that, on average, for a given income level, Americans became more supportive of higher taxes. For a detailed discussion of these findings, see Scheve and Stasavage (2010).

Mass warfare was a key driver behind the emergence of the welfare state. It served as a catalyst for universal suffrage in many countries, expanding male suffrage and introducing women's suffrage, which contributed to the rise of democracy. Additionally, war-related trauma shifted individual preferences toward stability, security, and collective insurance (Dryzek and Goodin (1986)), making people more inclined to seek protection against future uncertainties. Most importantly for this paper, war-induced increases in tax rates and public expenditure did not revert to pre-war levels for several years, as demonstrated in Section 4. This persistence can be attributed to habituation effects, institutional rigidities (Acemoglu, Johnson, and Robinson (2005)), and new war-related spending obligations.[3]

3 Data

In order to evaluate the models briefly described in Section 1 and thoroughly described below, we merge three different sources of information: (i) Comparative Income Taxation Database[4]; (ii) Cross-National Time-Series Data Archive (CNTSDA)[5], and (iii) the Manifesto Project Dataset[6].

The Comparative Income Taxation Database provides annual data on the top marginal income tax rate for legal individuals across 20 countries[7] from either 1800 or their independence up to 2010. Among these countries, some actively participated in World War II (e.g., France, Germany, Italy, the U.K., and the U.S.), while others remained neutral or less involved in

3. Obinger and Petersen (2017)

4. Genovese, Federica, Kenneth Scheve, and David Stasavage. 2016

5. Banks, Arthur S., Wilson, Kenneth A. 2020. Cross-National Time-Series Data Archive. Databanks International. Jerusalem, Israel; see https://www.cntsdata.com/

6. Volkens, Andrea / Krause, Werner / Lehmann, Pola / Matthieß, Theres / Merz, Nicolas / Regel, Sven / Weßels, Bernhard (2019): The Manifesto Data Collection. Manifesto Project (MRG / CMP / MARPOR). Version 2019b. Berlin: Wissenschaftszentrum Berlin fur Sozialforschung (WZB). https://doi.org/10.25522/manifesto.mpds.2019b

7. Table 1 presents the complete list of the 20 countries studied.

the conflict (e.g., Ireland, Spain, Sweden, and Switzerland). This variation is crucial for our analysis. To credibly demonstrate that the persistent effect on taxes is attributable to mass warfare, it is essential to control for other factors that could influence tax levels. The Cross-National Time-Series Data Archive (CNTSDA) enables us to account for several of these factors, including post-war defense expenditure (to account for the possibility that tax increases were influenced by the Cold War) and GDP per capita (to control for the impact of economic activity on taxation).

The Manifesto Project Database was developed by political and social scientists to analyze political parties' policy preferences through text analysis of their manifestos.[8] The dataset includes information on more than 1,000 political parties from 1945 to the present, covering over 50 countries. For each country, the database provides various indicators measuring the extent to which a party supports specific types of policies. For instance, the "welfare" indicator reflects a party's support for welfare state policies, such as public healthcare provisions, while the "marketeco" indicator assesses a party's advocacy for a free-market economy with minimal government intervention. Additionally, the dataset includes election results from 1945 onwards, detailing the percentage of votes received and the number of parliamentary seats secured by each party.

To quantify how left- or right-wing the policy preferences of a government were in each country-year, we construct a new index using two variables from the Manifesto Project Database: the share of seats held by political party j in country i at time t, denoted as $S_{j,t,i}$, and the left- or right-wing orientation of the party, denoted as $LR_{j,t,i}$. We define $P_{i,t}$ as the

8. A political party manifesto is a written declaration outlining the policy preferences and objectives that political parties present during elections.

policy preference of the government in country i at time t:

$$P_{i,t} = \sum_{j=1}^{N_i} S_{j,t,i} LR_{j,t,i} \tag{1}$$

Where N_j represents the number of political parties in country i that have at least one seat in parliament. The purpose of this variable is to capture a weighted policy preference for the entire parliament. One might argue that the policy preferences of the largest party or the party controlling the executive branch are most important. However, several issues arise with this approach.

First, in democratic countries, it is generally the parliament that approves changes to tax codes and introduces new policies. In our sample, many countries have experienced "minority governments," where, unlike "majority governments," the votes of opposition parties play a critical role. Therefore, the policy preferences of parties outside the executive branch are also significant.

Second, in many parliamentary systems, governments are often formed through coalitions of parties, as it is rare for a single party to achieve a majority of seats. The composition of these coalitions can change dynamically, even between election cycles.

Third, even if a single party controls both the executive branch and parliament (a majority government), they may consider the policy preferences of opposition parties when deciding policies. For example, proposing extreme left- or right-wing policies could lead to a loss of seats in the next election.

We normalize $P_{i,t}$ to range from 0 to 1, where 0 represents the most left-wing preference, and 1 represents the most right-wing preference. This variable will be used to control for the tendency of left-wing governments to support higher taxes.

Table 1 below presents a summary with some informative statistics of the merged dataset that was constructed for this paper.

Table 1: Summary Statistics

Country	**Years (from-**	**to)**	**Joined WWII in**	**Mean Political Preference**	**Political Parties**
Australia	1916	2010	1939	.583	7
Austria	1897	2010	1939	.505	7
Belgium	1920	2010	1940	.431	25
Canada	1918	2010	1939	.451	9
Denmark	1903	2010	Did not join	.527	18
Finland	1917	2010	1939	.365	13
France	1915	2010	1939	.448	16
Germany	1920	2010	1939	.496	17
Ireland	1923	2010	Did not join	.528	10
Italy	1865	2010	1940	.490	38
Japan	1887	2010	1940	.312	19
Netherlands	1893	2010	Did not join	.436	25
New Zealand	1892	2010	1939	.424	10
Norway	1892	2010	Did not join	.301	9
South Korea	1949	2010	1940	.351	12
Spain	1933	2010	Did not join	.401	18
Sweden	1862	2010	Did not join	.415	9
Switzerland	1916	2010	Did not join	.560	15
United Kingdom	1799	2010	1939	.469	10
United States	1863	2010	1941	.504	5

Mean Political Trend refers to the average political trend across all years available, with a standarization where 0 indicates extreme left and 1 extreme right.
Political Parties refers to the number of political parties that appear at least once in the Manifesto Project during the years studied for each country.

4 Econometric Framework and Results

Before going into our main specification, we first extend the analysis showed in the introduction. We start by estimating a series of cross-country regressions of the following form:

$$\tau_{it} = \alpha_0 + \beta_t war_i + \gamma \cdot X + \varepsilon_i \tag{2}$$

Where τ_{it} is the top tax rate of country i in year t, war_i is a dummy that takes the value 1 if country i was a WWII participant, and X is a set of controls (which will be specified below). We run a regression for every $t = 0, 1, 2, \ldots, T$ where $t = 0$ is the year the war begun. The estimated values of β_t in this regression should be interpreted as a conditional correlation.

Figure 2 displays the estimates of β_t when we control for the political preference of the government in country i at period t:

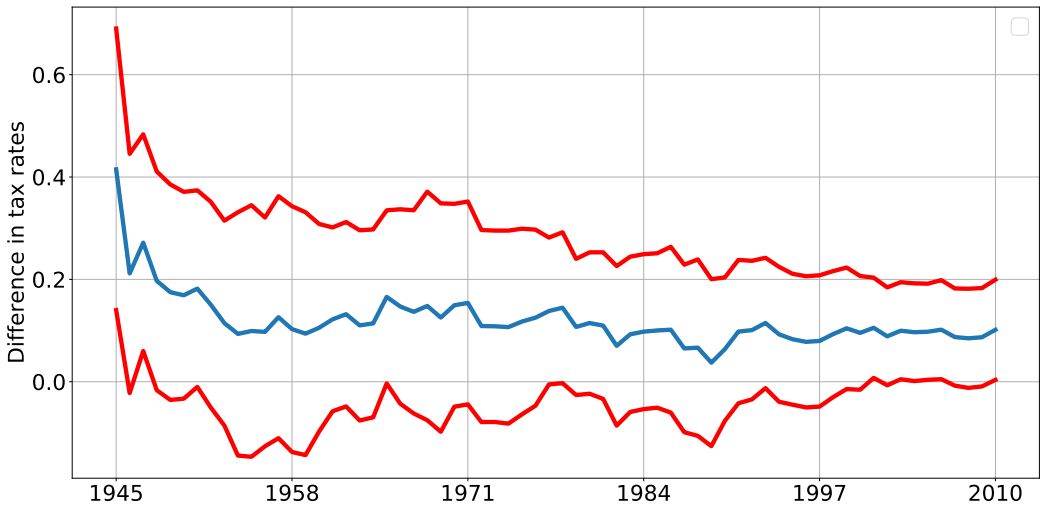

Figure 2: Difference in top tax rates between World War II participants and non-participants, controlling for political preferences.

After controlling for political preferences, the point estimates remain positive and relatively stable over time, suggesting that even when comparing governments with similar political inclinations, World War II participants exhibit higher taxes over time—approximately 15% higher than non-participants on average. However, as shown in Figure 2[9], the 95% confidence intervals include zero in many years, indicating a weaker correlation once political controls are introduced. It is also important to note that the number of observations is limited to 20 (the number of countries for which we have data) for each regression. This small sample size naturally results in less precise inference and broader confidence intervals.

As a second exploratory exercise, we create a new variable called "intensity" which is the interaction between the participation dummy and the share of population which died from direct or indirect war causes. Not only it does matter whether a country participated in WWII or not, but it is also important how costly, in terms of human life, the war was. The model is defined as follows:

$$\tau_{it} = \alpha_0 + \beta_t \cdot intensity_i + \gamma \cdot X + \varepsilon_i \tag{3}$$

If the compensatory argument theory we described in the previous sections is likely to be true, then we should expect the more costs in terms of human lives the war brought, the stronger the compensatory arguments will be; which translates into higher taxes. Figure 3 shows the results of this regressions, where we still control for political preferences.

In this new analysis, the point estimates remain positive and relatively constant over time. Two key interpretations can be drawn from the results shown in the last figure. First,

9. The Manifesto Project provides data only from 1945 onward; therefore, all specifications using this data start in 1945, the year of Germany's surrender.

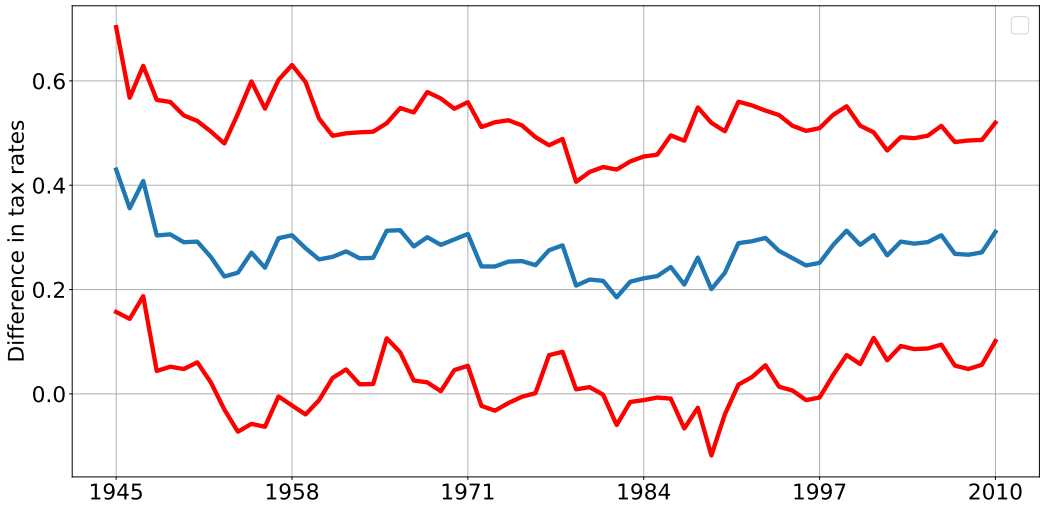

Figure 3: Difference in top tax rates by intensity of participation in World War II, controlling for political preferences.

participation in World War II is positively correlated with higher tax levels. Second, this correlation strengthens as the intensity of participation increases, measured by the number of human casualties. This latter finding aligns with the theory of compensatory arguments, suggesting that countries facing greater human costs tended to implement higher taxes. Although the number of observations remains limited to 20 per regression, it is noteworthy that most years exhibit a significant correlation. This indicates that the intensity of wartime participation enhances the strength of the correlation beyond what is captured by a simple participation dummy.

Following this introductory analysis, we now turn to our main specification, which employs an event study approach. This econometric method offers two key advantages. First, it capitalizes on sharp changes around the year a country entered the war. Second, it enables us to capture the full dynamic effect of wartime participation on tax rates over time. The primary identification assumption is that the tax-related consequences of entering the war

are orthogonal to unobserved factors that also influence tax rates. This assumption ensures that the observed effects can be attributed to the war itself rather than confounding variables.

For each country i, we define the year that country entered the war as $t = 0$, and index all the succeeding years relative to it. Our main specification goes from five years before ($t = -5$) to seventy two years after the entrance to the war. The model is specified as follows:

$$\tau_{it} = \sum_{\substack{j \neq -1 \\ j=-5}}^{T} \beta_j \cdot \mathbf{I}[j = t] + \eta_i + \gamma \cdot X + \theta \cdot f(t) + \varepsilon_{it} \tag{4}$$

Where β_j represents the coefficient of the set of event time dummies, η_i denotes country fixed effects, X is a set of control variables (described below), and $f(t)$ is a function of time that accounts for global time trends affecting tax rates. Note that the event time dummy for the year $t = -1$ is omitted, implying that all event study dummies measure the impact of going to war on taxes relative to the year preceding a country's entry into the war.
The main differences between this specification and those previously presented are: (i) this approach incorporates both cross-country and time-series variations, and (ii) under the identification assumptions, we can infer a causal effect.

Country fixed effects, η_i, are included to control for all unobserved determinants of tax rates that are specific to each country, such as institutional settings that remain constant over time. The term $f(t)$ enters the model as a common quadratic time trend[10], which accounts for global forces varying over time that influence tax rates, such as globalization and the phenomenon known as the Race to the Bottom (see Saez and Zucman (2019) for a broader discussion on this topic).

The coefficient β_j is interpreted as the effect of the event "going to war" on taxes—j years

10. We also tested a linear trend, and the results were not significantly affected.

after entering the war—relative to the year immediately preceding the event and in comparison to countries that did not participate in the war.

Figure 4 presents the estimated event dummy coefficients when only country fixed effects and the quadratic time trend are included as controls. Notably, all event dummies corresponding to the years prior to World War II are statistically insignificant, providing further support for the notion that the war induced sharp changes in tax rates.

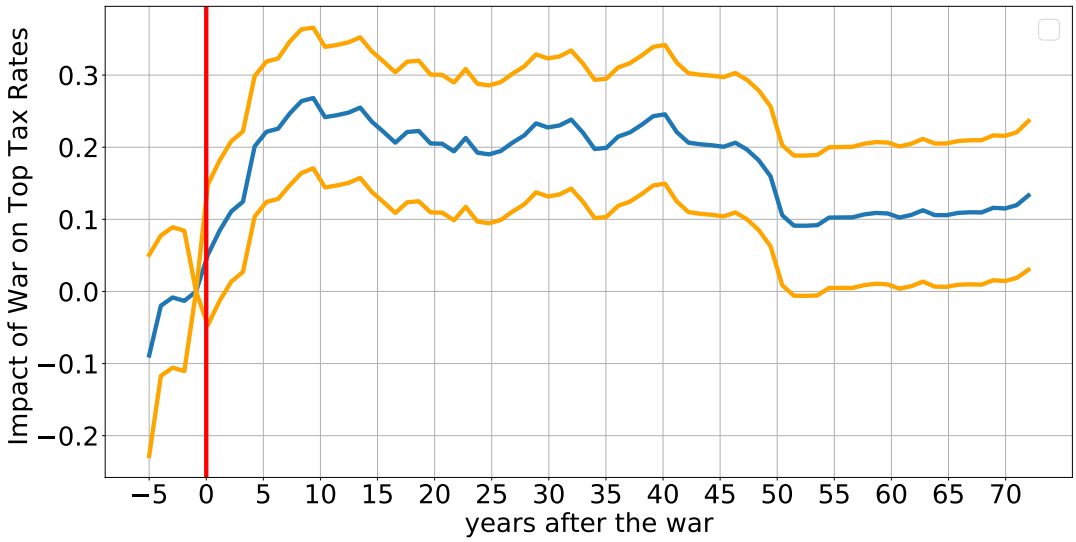

Figure 4: Effect of war on taxes. Controls: (i) country fixed effect, and (ii) quadratic time trend.

As a second exploratory exercise, we perform an event study analysis, controlling for the political preferences of parliament, real GDP per capita, and military expenditure. As noted earlier, the Manifesto Project dataset only provides information for countries in our sample from 1945 onward. Consequently, when we account for political inclination, we cannot estimate the effect of going to war before 1945.

In this specification, all event dummies are indexed relative to the year a country entered the war. However, the event dummy for the year 1945 is omitted, which alters the interpretation of the coefficients. Here, β_j represents the average effect of going to war on taxes—j years after entering the war—relative to the year World War II ended, and in comparison to countries that did not participate in the war. The results are presented in Figure 5.

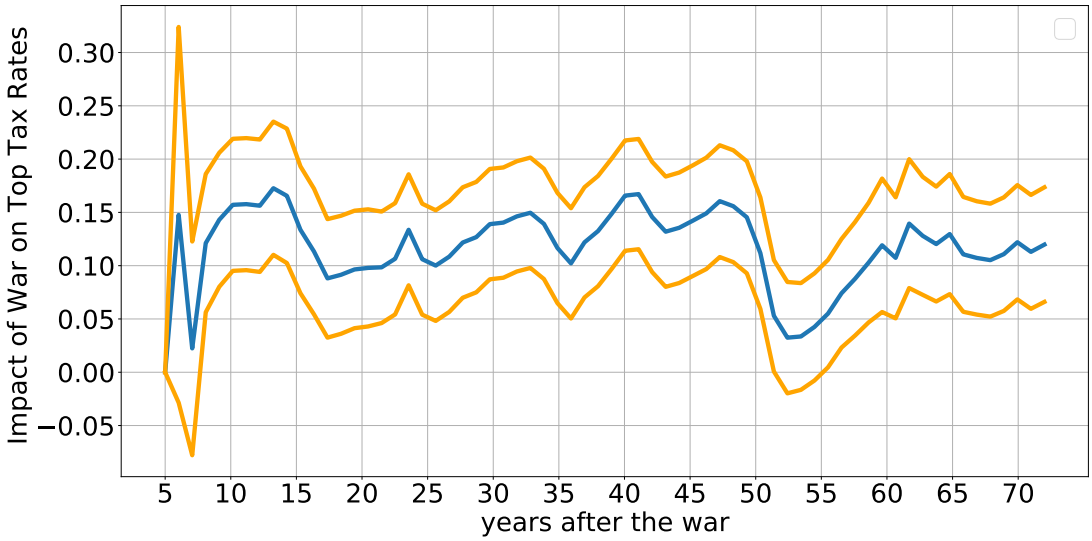

Figure 5: Effect of war on taxes. Controls: (i) country fixed effect, (ii) political preferences, (iii) GDP per capita, (iv) defense expenditure, and (v) common quadratic time trend.

As shown in the results, the years immediately following the end of World War II are not statistically significant, indicating that the event did not increase taxes relative to the year the war ended. This aligns with the observation that taxes began to rise during the war, as discussed in Section 2, and continued to increase afterward. Notably, a significant effect emerges approximately 10 years after the war began (around 1949). This effect remains significant and is approximately 10

It is important to note that adding the political control reduces the magnitude of the coefficients. The coefficient associated with the political control is negative and statistically significant, suggesting a negative correlation between the right-wing orientation of a government and the level of tax rates. This finding supports the hypothesis that political preferences influence tax rates but are insufficient to fully explain the differences between World War II participants and non-participants.

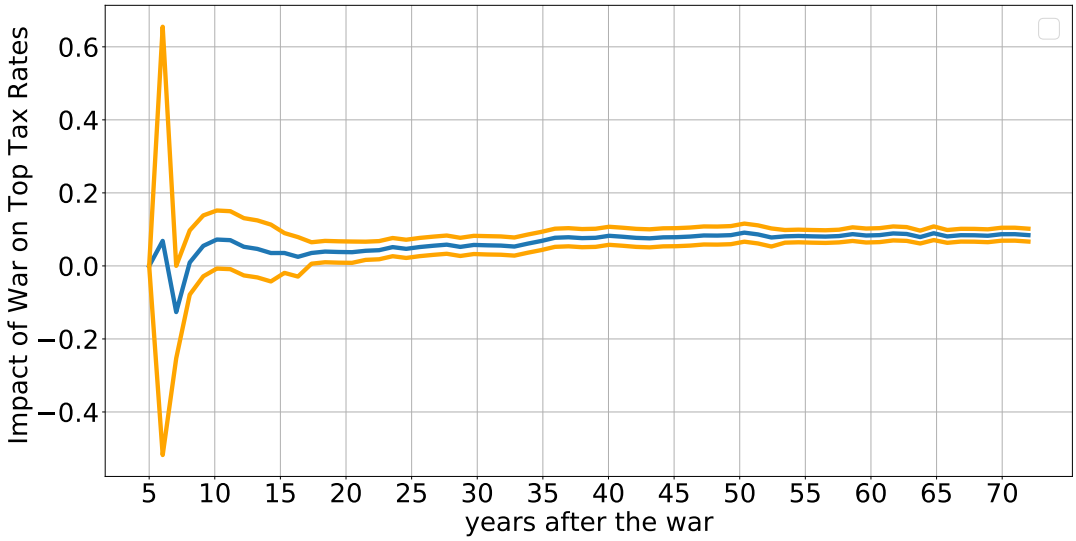

Figure 6: Effect of war on taxes. Controls: (i) country fixed effect, (ii) political preferences, (iii) GDP per capita, (iv) defense expenditure, (v) common quadratic time trend, and (vi) time fixed effects.

The third exploratory analysis utilizes war intensity, as described earlier, instead of simple participation. This approach treats the event as a continuous variable rather than binary. By employing this variable, we exploit an additional source of variation: the heterogeneous consequences of the war across countries. In this specification, we include year fixed effects alongside the controls used in the previous regression.

We did not include time fixed effects in prior regressions due to near-multicollinearity issues arising from the high correlation between the event dummies and year dummies.[11] The results are presented in Figure 6. A similar pattern emerges compared to the previous specification. Immediately after World War II, the estimates are not statistically significant. However, in the decades following the war, the effect of war intensity on taxes remains positive and significant, averaging around 8

5 Conclusions

We aimed to explain the long-lasting differences in top marginal tax rates among developed countries. Previous literature has identified massive warfare as a catalyst for the rise in top tax rates. We argue that warfare is not only the primary driver of these differences but also the principal force behind their persistence.

Previous literature has focused on democracy and universal suffrage, inequality as a determinant of taxes, the influence of the wealthy, and the decline in investments as potential explanations for tax rate differences. While we do not dismiss these theories as plausible, we argue they are not the leading explanation for the persistent differences in top tax rates observed in the data. Instead, our findings suggest that mass warfare is a strong explanatory factor for this persistence. Mechanisms such as compensatory arguments, habituation effects, institutional rigidities, and new war-related spending obligations underpin its effectiveness.

We analyzed the impact of World War II across five different specifications. A simple cross-country analysis, when controlling for the political tendencies of each government, shows a positive but statistically insignificant difference in top tax rates between war participants

11. Since the event is now continuous, this issue no longer arises.

and non-participants. However, significance is achieved (for most years) when participation is interacted with total war-related deaths (used as a proxy for participation intensity). This indicates that the effect of World War II on top tax rates is more pronounced in nations that were more deeply engaged in the conflict.

More importantly, our event study approach, which accounts for country-specific, time-invariant unobservables and quadratic time trends, estimates an average effect of 20% on top tax rates, with a persistent effect of around 10% even 70 years after the war began. A robustness check, incorporating controls for economic activity (proxied by GDP per capita) and post-war defense expenditure (to account for potential Cold War tax increases), confirms an average effect of approximately 8–10% when participation intensity is also considered.

This paper reveals that the long-lasting differences in top tax rate levels among countries can be attributed to the effects of mass warfare. It not only sheds light on historical behaviors but also offers a framework to forecast future trends. Our analysis highlights the persistent impact such shocks can have on nations' fiscal policies, particularly when considering the intensity with which countries are affected.

References

Acemoglu, Daron, Simon Johnson, and James A Robinson. 2005. "Institutions as a fundamental cause of long-run growth." *Handbook of economic growth* 1:385–472.

Acemoglu, Daron, and James A Robinson. 2000. "Why did the West extend the franchise? Democracy, inequality, and growth in historical perspective." *The quarterly journal of economics* 115 (4): 1167–1199.

Boldorf, Marcel, and Jonas Scherner. 2012. "France's Occupation Costs and the War in the East: The Contribution to the German War Economy, 1940–4." *Journal of Contemporary History* 47 (2): 291–316.

Chari, Varadarajan V, and Patrick J Kehoe. 1999. "Optimal fiscal and monetary policy." *Handbook of macroeconomics* 1:1671–1745.

Diamond, Peter A, and James A Mirrlees. 1971. "Optimal taxation and public production I: Production efficiency." *The American economic review* 61 (1): 8–27.

Dincecco, Mark, Giovanni Federico, and Andrea Vindigni. 2011. "Warfare, taxation, and political change: Evidence from the Italian Risorgimento." *The Journal of Economic History,* 887–914.

Dincecco, Mark, and Mauricio Prado. 2012. "Warfare, fiscal capacity, and performance." *Journal of Economic Growth* 17 (3): 171–203.

Dryzek, John, and Robert E Goodin. 1986. "Risk-sharing and social justice: The motivational foundations of the post-war welfare state." *British Journal of Political Science,* 1–34.

Gilens, Martin. 2012. *Affluence and influence: Economic inequality and political power in America.* Princeton University Press.

Mirrlees, James A. 1971. "An exploration in the theory of optimum income taxation." *The review of economic studies* 38 (2): 175–208.

Obinger, Herbert, and Klaus Petersen. 2017. "Mass warfare and the welfare State–Causal mechanisms and effects." *British Journal of Political Science* 47 (1): 203–227.

Obinger, Herbert, and Carina Schmitt. 2020. "World war and welfare legislation in western countries." *Journal of European Social Policy* 30 (3): 261–274.

Persson, Torsten, Guido Tabellini, et al. 2000. *Political economics.*

Piketty, Thomas. 1995. "Social mobility and redistributive politics." *The Quarterly journal of economics* 110 (3): 551–584.

———. 2015. "About capital in the twenty-first century." *American Economic Review* 105 (5): 48–53.

Sabaté, Oriol. 2016. "Does military pressure boost fiscal capacity? Evidence from late-modern military revolutions in Europe and North America." *European Review of Economic History* 20 (3): 275–298.

Saez, Emmanuel, and Gabriel Zucman. 2019. *The triumph of injustice: How the rich dodge taxes and how to make them pay.* WW Norton & Company.

Scheve, Kenneth, and David Stasavage. 2010. "The conscription of wealth: mass warfare and the demand for progressive taxation." *International organization,* 529–561.

———. 2012. "Democracy, war, and wealth: lessons from two centuries of inheritance taxation." *American Political Science Review,* 81–102.

———. 2016. *Taxing the rich: A history of fiscal fairness in the United States and Europe.* Princeton University Press.

Yared, Pierre. 2010. "Politicians, taxes and debt." *The Review of Economic Studies* 77 (2): 806–840.