

Fiscal Innovation in Non-Democratic Regimes

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Abstract

The income tax is a central pillar of the modern fiscal state due to its revenue-raising capacity and administrative sophistication. This paper examines the origins of this tax, showing that the early income tax is not a democratic achievement, but that it results from a strategic move by incumbent elites in non-democratic settings to enhance their economic position and to reap short-term electoral advantages in political contests under restrictive electoral rules. Using principality- and district-level data from Imperial Germany during the period between 1871-1914, we provide evidence of the fiscal and electoral benefits reaped by non-democratic elites from the adoption of this new form of taxation. The analysis advances our understanding of the origins of fiscal capacity, by demonstrating the strategic use of taxation for reasons other than inter-class redistribution. Moreover, the results imply that the reasons accounting for income tax adoption are different from the factors accounting for major changes in tax progressivity, namely, war and changing norms of social fairness.

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1 Introduction

The study of the development of fiscal capacity is an area of vibrant recent scholar investigation (Besley and Persson, 2011; Dincecco, 2011; Hallerberg, 1996; Scheve and Stasavage, 2010). The dominant explanation stresses the importance of war as the driving force for the development of the extractive capacity of the state. Such explanations have a distinguished intellectual history, going back to the work of Hintze (1975) and Tilly (1990). Recent studies by Scheve and Stasavage (2010, 2012) restate the importance of war in changing societal norms of fairness and preferences for tax progressivity. A second set of explanations that build on work by Bates and Lien (1985) and Levi (1988) explain differences in the design of extractive institutions as a result of domestic political bargain between different political groups (Aidt and Jensen, 2013; Ansell and Samuels, 2015).

Our paper seeks to contribute to this literature by examining the political origins of the most significant existing instrument of revenue extraction, namely, the income tax. This tax occupies a special position in the tool-kit of fiscal policies of the modern state. In contrast to pre-existing instruments of taxation that levied revenues on visible assets, the income tax assesses an abstract category. Revenue from income is much harder to collect than revenue from other sources, both because of its atomized tax base, but also because individuals—who are the basic unit of tax assessment—receive income streams from a variety of different sources (Musgrave, 1969). The adoption of income taxes requires, thus, additional investment in institutions that enhance the technology of revenue extraction. These changes in tax technology include, among others, the appointment of tax assessors and the formulation of strategies that allow them to assess income originating in different sources, and to design punishment mechanisms for individuals that evade the payment of the new tax. As such, the adoption of the income tax spurs both the growth of and the sophistication of the administrative infrastructure of the state and the development of its extractive capacity. Because of these changes in the technology of taxation, the adoption of the income tax represents one of the most decisive turning points in the development of the

modern fiscal state (Tilly, 1990). In the words of Johannes Popitz Popitz (1926), the income tax is the “queen of taxation”.

The political process of adoption of income taxes in the Western World displays several empirical regularities that are puzzling for existing accounts of taxation and redistribution, according to which tax increases on the wealthy should follow, not precede, democratization (Acemoglu and Robinson, 2000; Boix, 2003). Figure 1 presents a graphical presentation of the first empirical regularity. We find that countries characterized by restrictive suffrage pioneer income tax adoption. Britain, the earliest permanent adopter of the income tax, does so in 1842, at a time when the suffrage is restricted to only 13% of the population. The Habsburg Empire follows and adopts an income tax in 1849, at a time when elections are not yet held. By contrast, countries that adopt extensive suffrage rules early in time lag behind in the adoption of an income tax. For instance, France and Switzerland, having introduced full male franchise in 1848, adopt an income tax only in 1911 and 1939, respectively. Table 1 also shows that along restrictive franchise rules, the *early adopters of the income tax* (i.e. countries that adopt this tax around the turn of the nineteenth century) present low levels of electoral competition and limited political accountability.

A second puzzling regularity about the adoption of the income tax in the Western World is that most of the early adopters have in place significant forms of tax-based parliamentary malapportionment, which connect political rights to tax payments. One finds two types of such electoral provisions: the *vote-tax* link, which conditions the right to vote on the prompt payment of direct taxes (i.e. only direct tax payers are enfranchised), and the *censitary tax system*, a form of malapportionment by which votes are weighted by the amount of direct tax payment (i.e. the higher tax payment, the higher the leverage of the vote).

The examination of the domestic political coalitions leading to the adoption of the income tax presents a third puzzling regularity relative to standard models of taxation and redistribution: the most significant political actors pushing for the adoption of the income tax are Conservative politicians whose interests are closely aligned with large landowners,

still the wealthiest group at the time.

All in all, countries characterized by restrictive suffrage, significant forms of tax-based parliamentary malapportionment, Conservative political majorities, and entrenched landed elites pioneer the political process of income tax adoption.¹ Why do undemocratic elites adopt a tax that eventually becomes the cornerstone of the welfare state and income redistribution? We explain the puzzle as follows: First, the early income tax is not a mechanism of inter-class redistribution, à la Acemoglu and Robinson (2000) and Boix (2003), but of intra-class redistribution of the *incidence of taxation*. The initial income tax increases the direct tax ratio to total revenue by 7 percentage points within 15 years after its adoption (Mares and Queralt, 2015) —thus is it not ceremonial or un consequential. However, the progressivity of the new tax does not achieve post-WWI levels precisely because the early income tax is not intended to finance a welfare state. In other words, the early income tax does not tax the rich to redistribute to the poor via social spending, but it reallocates the burden of taxation from the traditional economy, land, to the modern economy, industry. As it will be argued below, the inter-sectoral reallocation of the tax incidence is only possible as long as landed elites maintain disproportional influence in restricted Parliaments.

Second, the early income tax pursues a political goal that is unrelated to its extractive capacity. In the presence of electoral institutions that condition voting rights on direct tax payment, the income tax biases political leverage in favor of large tax payers and, *de facto*, marginalizes the middle and working class from the political process even under conditions of extended franchise.

Our inter-sectoral (or intra-elite) account of income tax adoption advances a novel, alternative theory of the origins of modern fiscal capacity that does not presuppose inter-class redistribution (Acemoglu and Robinson, 2000; Boix, 2003). Our examination of the fiscal and political gains associated with early adoption provide a (hitherto absent) rationale for the adoption of the income tax *decades prior* to its transformation into a highly progressive

¹Mares and Queralt (2015) present a cross-national regression analysis demonstrating similar results.

fiscal machine (Scheve and Stasavage, 2010). The early income tax, we claim, does not seek to redistribute income from the wealthy to the poor. The income tax is early adopted in non-democratic polities because incumbent elites reap fiscal and electoral gains from its introduction, thus postponing economic and political change. Subsequent political events, such as changing societal norms of fairness and total warfare, bring about changes in the progressivity of the income tax (ibid.). In sum, the factors accounting for income tax adoption are different from the factors accounting for major changes in the progressivity of this tax.

We present multiple empirical tests of our explanation. First, we exploit cross-sectional variation in the adoption of income taxes across the different principalities that are part of the German Empire between 1871 and 1914. This sample minimizes unobserved heterogeneity across panels while blocking alternative explanations. Our results show that landed elites pushed for income tax adoption and accelerated the process in the presence of tax-based parliamentary malapportionment.

Our second empirical test addresses the micro-foundations of the theory. Using roll call vote data, we first examine the economic and political determinants of the vote in the Prussian Lower House that lead to the adoption of the income tax in 1891 and its subsequent reform in 1893. These models illustrate the party breakdown around the vote, while controlling for district-level socio-economic factors. The results show that Conservative politicians representing the interest of large landowners were key supporters of the income tax. We provide additional qualitative evidence based on the Parliamentary debates preceding the roll call vote that elucidate the fiscal and political calculations leading to income tax adoption.

Lastly, we test for additional observable empirical implications of our theory, by examining the district-level fiscal and political outcomes that followed the adoption of the income tax in Prussia. Consistent with our theoretical predictions, we show that, ten years from adoption, the incidence of taxation disproportionately falls on industrial districts. Moreover, we show that the electoral provisions connecting voting rights and tax payment increases

the electoral fortunes of parties representing incumbent elites. We conclude, by restating the implication of our analysis for theories of the origin of the fiscal state.

2 The Fiscal and Political Calculus of Early Income Tax Adoption

Tax systems that precede the early income tax levy direct taxes mostly on land, not on the income generated by industrial activity. This situation is characteristic to tax systems in pre-modern Europe and the New World (Webber and Wildavsky, 1986). The *old* tax system is established in times when land is the main economic sector and industry is limited to small-scale manufacturing. That is, the old tax system is never intended to raise revenue through taxation of industrial income. As a direct consequence, the rise of the industrial revolution in the Western World leaves the fastest growing sector —mass-scale manufacturing—, virtually untaxed (Hallerberg, 2002; Schremmer and Stern, 1989). Proposals to adopt the income tax bring about the opportunity to fix this deficit and to modernize the fiscal administration so as to assess sources of income that had been hitherto untapped. The adoption of an income tax has the potential to re-equilibrate the incidence of direct taxation between land and industry. In its extreme version, the new tax acts as an instrument of *sectoral* redistribution of the tax burden.

The potential redistributive consequences of the early income tax generates clear intra-elite disagreement: politicians representing the landed interest overwhelmingly favor the adoption of the tax, while politicians representing the interest of industry oppose it. For instance, at the time of the adoption of the income tax in the UK, Tory MPs advocate the adoption of the tax on fairness grounds, while Liberals oppose the new tax, alleging double taxation (Mares and Queralt, 2015). One finds a similar sectoral divide in the Prussian Lower Chamber, and other early adopters.

In addition to considerations about the sectoral incidence of the new tax, political con-

siderations also structured the debate of income tax adoption. In the presence of electoral provisions that condition voting rights on the payment of direct taxes, the adoption of the income tax can, potentially, create political gains to voters that make higher tax payments. Two types of *tax-based* forms of parliamentary malapportionment are common in the early modern period. The first of these provisions, the *censitary system*, modulates the weight of each ballot as a function of the tax payment. The second provision, the *vote-tax link*, uses information about the payment of direct taxes to restrict electoral rights. The constitutional rules of most early adopters of the income tax have such tax-based malapportionment barriers in place at the time of the adoption of the new tax.² As will be shown below, parliamentary debates reveal that actors are aware of the political gains derived from these forms of malapportionment. Here, we discuss how these two dimensions of the electoral system affect the considerations of politicians about the desirability of income tax adoption.

First, by weighing different votes based on voters tax payments, the *censitary system* has the potential to create sizable inequalities in representation. To illustrate these provisions, consider the ways in which Prussia's censitary electoral system weights the ballots cast by voters with different levels of income. According to Prussian electoral rules, voters in each commune are divided into three categories or "classes" depending on the total amount of direct tax payments. Voters are assigned to the three classes as follows. The third class includes voters with the lowest levels of tax payments that collectively contributed one third of the total amount of taxes collected in the locality. The remaining voters are again ordered by their tax payments and assigned to the second and first class, respectively. The cutoff between these two lower classes is set in such a way to ensure that the cumulative tax payments by all voters in the second and third class total two thirds of the tax revenue collected in the locality. The high-income voters whose cumulative tax payments total the remaining third of revenues are assigned to the first class. Each class of voters elect the

²By the time of income tax adoption, tax-based electoral barriers were in place in Austria-Hungary (1849), Italy (1864), Japan (1887), the Netherlands (1893), Norway (1892), Sweden (1902). The two early adopters that did not have tax-barriers are Britain (1842) and New Zealand (1891).

same numbers of electors. Electors, in turn, choose the politician(s) who represent the district. This electoral rule generates significant inequalities in representation among voters with different levels of income. Votes of lower-income citizens carry much a lower weight than the votes of high-income voters. One of the most striking example of this inequality in representation that has been noted by historians of the period is that one could find constituencies in Prussia where only one voter could vote in the highest tier of the electoral system (Kühne, 1994)

Second, the *vote-tax link* restricts suffrage rights by excluding citizens who do not pay direct taxes on a regular basis, which de facto limits franchise to asset owners and high-income earners. This tax-based participation barrier is enshrined in the electoral laws of most early adopters in the Western World as well as more than half of the German principalities.³

Based on the inequities in representation derived from both types of tax-based electoral provisions, we expect parties representing the wealthier segment of the enfranchised population to favor the adoption of the income tax. The payment of a new income tax increases the political leverage of wealthier individuals, by either increasing their chances to achieve (or retain) representation in the higher chambers of Parliament (under the censitary system), or by excluding voters that do not qualify for income taxes, namely, those exempted from paying it due to their low labor or capital income (the vote-tax link). Importantly, these political considerations have the potential to create opportunities for collaboration between the landed aristocracy and the industrial elite if both sectors benefit from tax-based malapportionment at the expense of urban middle class, whose income tax payments are low and cannot result in additional political leverage. In the following sections, we examine empirically the sectoral conflict around income tax adoption.

³For a full crossnational account of vote-tax links, refer to Table 1 in Mares and Queralt (2015).

3 A Cross-Sectional Test of the Sectoral Theory of Income Tax Adoption

Compared to a cross-national setting, an analysis that exploits within-country variation has the advantage of minimizing unobserved heterogeneity across units. We exploit this feature of research design, by testing the sectoral (or intra-elite) theory of income tax adoption within the German Empire, a federation of twenty-six principalities. This set up is convenient for substantive reasons too, as it allows us to hold constant three important confounders of income tax adoption, namely, preparation for war, tariff policy and indirect taxation, which are all constitutionally conferred to the central level of government, or the *Reich*.

In its allocation of fiscal responsibilities between the *Reich* and the states, the 1870 German constitution limits significantly the ability of the central government to raise direct taxes and leaves significant fiscal policy authority in the hands of subnational governments (Mauersberg, 1988; Mathiak, 2011). While all German principalities take advantage of the power to adopt direct taxes, the timing of the adoption of income taxes varies considerably across different states, as listed in Table 2.

What explains the variation in the timing of the adoption of the income tax across these principalities? Our first hypothesis argues that landed elites favor an income tax due to its ability to raise higher revenues from the manufacturing sector. Because the new bill disproportionately favors the agricultural elite, we expect the new tax to be adopted when landed elite has high bargaining power relative to other groups. We approximate the bargaining power of landed elites by a measure of landholding inequality. The latter is a good proxy of levels of social control of landowners in the contexts of electoral systems with both restrictive suffrage and high imperfections in voting technology (Ansell and Samuels, 2015; Boix, 2003; Mares, 2015; Ziblatt, 2008). To measure landholding inequality, we compute a Gini index that captures the deviation in inequality from a perfectly equal distribution in

the size of farms.⁴

Our second hypothesis is that electoral provisions that condition political rights on tax payments increase the incentives of incumbent elites to adopt the income tax. These forms of parliamentary malapportionment reinforce the over-representation of incumbent elites and their chances to remain in office. We consider two forms of tax-based parliamentary malapportionment: the censitary system, which modifies the weight of votes as a function of the tax payment, and the vote-tax link, which conditions voting rights on direct tax payment.

To test the second hypothesis, we have created a complete dataset of all electoral laws that governed subnational elections in German principalities during the period between 1871 and 1914. Appendix A lists the primary publications we used in constructing this dataset of German electoral institutions. Eighty percent of German principalities had at least one of the two forms of tax-based electoral malapportionment. In every principality except Elsass-Lothringen, tax-based electoral provisions precede the adoption of the income tax.

To test our two hypotheses, we model the adoption of income taxes in 22 German principalities as a function of bargaining power of landed elites and the pre-existence of tax-based provisions of parliamentary malapportionment.⁵ To this end, we estimate duration models of income tax adoption of the following form:

$$P(y_{it} = 1 | x_{it}, y_{it-1} = 0) = \frac{1}{1 + e^{-(x_{it}\beta + H(t-t_0))}} \quad (1)$$

The dependent variable in Expression 1 is the probability of income tax adoption by principality i at year t , conditional on not having adopted it yet. We make the probability of adoption a function of time-varying and invariant covariates x_{it} , and a baseline hazard, $H(t-t_0)$, which captures the number of years that the principality has been susceptible (technically, *at risk*) of adopting the tax, with $t_0 = 1871$. In such duration models, principality i exits

⁴Refer to Appendix A for this and all other sources.

⁵Four principalities are not included because (a) they did not have an electoral law (Mecklenburg-Strelitz and Mecklenburg-Schwerin), (b) had adopted the income tax prior to German Unification (Hessen), or (c) had adopted tax-based malapportionment provisions only after the income tax (Elsass-Lothringen).

the sample as soon as it adopts the income tax.

Along the main explanatory variables, all models include additional controls that capture cross-sectional and longitudinal heterogeneity across German principalities: First, *Total Population*; Second, the share of population working in the industrial sector, or *Industrial Labor*, a key variable to capture differences in industrial development; Third, the *Percentage of Catholics* in the population, which accounts for latent social divisions that may inhibit investment in fiscal capacity (Besley and Persson, 2011).

The structure of the data is Binary Time Series Cross Sectional (BTSCS). Accordingly, we fit Expression 1 with a standard probit model. To account for the baseline hazard, $H(t - t_0)$, we include a third-order flexible polynomial of the time elapsed since 1871 (Carter and Signorino, 2010). Once the baseline hazard is properly accounted for, probit models are equivalent to event history methods for BTSCS data (Beck, Katz and Tucker, 1998). For completeness, Appendix B reports complementary log-log models—the exact discrete duration analogue of the Cox proportional hazard model for BTSCS data (Box-Steffensmeier and Jones, 2004)—, and spline models (Beck, Katz and Tucker, 1998). Results are the same across specifications.⁶

3.1 Duration Models of Income Tax Adoption across German Principalities

We anticipate to find an inter-sectoral conflict over the adoption of the income tax, and that the strength of landed elites should accelerate its introduction. We approximate the strength of rural elites with a measure of landholding inequality. The results of the baseline model reported in Column 1 of Table 3 lend support to our theoretical prediction: the adoption of income tax is more likely in polities where the landed elite is more entrenched. Interestingly, the level of industrialization, as proxied by the share of the population working

⁶It comes without saying that duration models of single events do not allow for unit (principality) fixed effects, as they completely determine the predicted duration for that unit.

in the industrial sector, is also a strong predictor of income tax adoption. We interpret this as indicative of higher opportunities to shift the incidence of taxation on the rising industrial sector (more below).

Column 2 controls for the possibility of policy diffusion. To this end, we control for the *Number of Principalities having Adopted the Income Tax* by year t . The coefficient of this variable is negative. However, this is the result of multicollinearity between the measure of diffusion and the baseline hazard.

Column 3 addresses an alternative theory of fiscal innovation in non-democratic regimes: namely, political mobilization of low-income voters, the so-called *threat from below* (Acemoglu and Robinson, 2000; Boix, 2003; Aidt and Jensen, 2014). One possible implication of these studies is that elites in non-democratic settings may adopt the income tax to finance new public spending to preempt revolts. Empirically, we capture the potential of threat from below using the share of population that is poor for each principality by the mid-1880s. The coefficient for this variable is positive, but falls far from achieving statistical significance at conventional levels. Importantly, our proxy for the bargaining power of the landed interest remains positive and statistically significant.

In column 4 we address alternative interpretations for the *Industrial Labor* coefficient. This coefficient, we claim, captures the incentives that landed elites have to push the incidence of taxation onto the rising economic elite, the industrialist. However, one may argue that this variable captures the bargaining power of labor. To factor out this possibility, we control for the vote share of the *Socialist Parties* in *Reichstag* elections. This additional variable captures the political strength of a party representing low-income voters, and, consequently, the credibility of threats from below. The point estimate for this variable is positive, but does not reach conventional levels of statistical significance.

Wealthy landowners were successful in selecting candidates representing their interests as their political representatives. During the 13 legislative periods between 1870 and 1914, the number of landholders as a share of Conservative deputies in the *Reichstag* averaged 67

percent (Retallack, 1988). Based on the strong alignment between sectoral specialization and political party representation,⁷ in Appendix C we approximate the bargaining power of landed elites *vis-à-vis* industrial interests by the vote share difference between Conservative parties (who represented landed interests) and Liberal parties (representing urban, industrial interests) in each of the 13 elections to the German *Reichstag*. In contrast to the landholding Gini index, this alternative proxy of landed elite bargaining power is *time-varying*, as it changes every four years.⁸ Importantly, results hold.

Along economic gains, we claim that the adoption of the income tax under restrictive electoral systems offer additional electoral payoffs to incumbent elites. Specifically, our second hypothesis conjectures that, in the presence of tax-based electoral restrictions that connect direct tax payments to voting rights, the adoption of the income tax creates potential political gains that may benefit incumbent elites and penalize low-income voters. In other words, the income tax facilitates the ability of pre-democratic elites to preserve power and exacerbate inequalities in representation.

To address the political gains from income taxation, we interact landholding inequality (our key measure of the bargaining power of landed elites) with the two electoral provisions that create barriers to participation to low-income voters: the vote-tax link, and the censitary system. Results for this test, reported in columns 5 and 6, suggest that the probability of income tax adoption increases when powerful landholding elites compete in electoral systems with provisions that exacerbate inequalities in political representation.

Figure 2 plots marginal effects. In particular, this Figure shows that, in the presence of a vote-tax link, a one-percent increase in landholding inequality increases the probability of income tax adoption by over 1.5%. Similarly, in the presence of a censitary electoral system, a one-percent increase in landholding inequality increases the probability of income tax adoption by almost 1%. The magnitude of these effects speak to the relevance of the

⁷Refer to Appendix Appendix D for further evidence of the tight association.

⁸Notice that including simultaneously both variables, landholding inequality and parties' vote share difference, would lead to a bad control problem. Refer to Appendix Table A-9 for details.

political calculus behind the adoption of the income tax.

This section presented empirical evidence consistent with the inter-sectoral (or intra-class) hypothesis of income tax adoption. Next we articulate the micro-foundations of the economic and political gains reaped by incumbent elites from income tax adoption in non-democratic settings. To this end, we turn to a case-specific analysis that provides qualitative and quantitative evidence of the origins and consequences of income tax adoption.

4 The Prussian Income Tax

Prussia is the largest and most influential German principality. Elections for the *Abgeordnetenhaus* (the Prussian Lower House) is held under a tax-based form of parliamentary malapportionment, which is similar to the situation in 80 percent of German principalities prior to WWI. Levels of landholding are very close to the national mean inequality, 0.74 and 0.71, respectively; and proportions of population working in the industrial sector fall within one standard deviation of the national average, 6.1 and 9.5, respectively. Similar to every other principality, Prussia retains only fiscal powers over direct taxes, administrative fees, and stamp duties. Tariff policy and consumption taxes remain in the hands of the federal government. By focusing on this representative case, we use qualitative and quantitative evidence to uncover the political and fiscal gains of income tax adoption in non-democratic settings.

The Prussian income tax, known also as *Miquel's law*, represents an important turning point in the comparative political history of the fiscal state (Hallerberg, 1996, 2002; Thier, 1999; Mathiak, 2011). The Prussian income tax pioneers a novel technology of revenue extraction that requires all tax-payers to cumulate all separate sources of revenue in one schedule (Popitz, 1926). This method of taxation, which is referred to as the *synthetic* income tax, is regarded by political economists and tax experts of the time as a superior method of revenue extraction as compared to the British income tax, which taxed different

sources of income in different schedules (Daunton, 2001).

In Prussia, the income tax is enacted in 1891. Before this date, Prussia had two types of personal taxes: the class tax (*Klassensteuer*), which was levied on the entire population, and the classified tax (*Klassifizierte Einkommensteuer*), levied on the rich only. These taxes are reformed several times prior to 1891. The last reform dates as of 1873, when tax dualism between towns and countryside is abolished, and a mild progressive tax schedule is established. Based on the 1873 reform, poor individuals are exempted from tax payments, and the top marginal rate increases up to 2.7 per cent. More importantly, the assessment of these taxes is left to local authorities, which use external indicators (e.g. the number of cattle, family members, or windows) to establish the tax base of each individual, while being explicitly prohibited to investigate personal incomes and fortunes in depth (Schremmer and Stern, 1989, p.439).

In 1891, the class and classified taxes are consolidated into a universal modern income tax. Along the *synthetic* system of income aggregation, the 1891 bill brings about three great innovations.⁹ First, the legislation introduces general tax liability, implying that *all* citizens and legal corporation are liable to tax. Second, the new bill introduces the duty to disclose business accounts to public authorities, to declare private income and property, and to allow detailed investigation by fiscal officials. Third, the rule of law is strengthened, the scope of discretion of authorities palpably reduced, and untruthful tax declarations leading to tax evasion are punished by fines. These innovations imply a radical change in the logic of taxation: the 1891 reform puts an end to inefficient and unjust assessment practices of the old tax system and establishes the modern *capacity-to-pay principle*.

Specific to the modern sector, the tax liability of corporations represents a major breakthrough, as this principle replaces the old business tax, controlled by professional associations, who allocates the tax quotas among members based on opaque criteria. The inefficiencies and low extractive capacity of the business tax were common knowledge. The main

⁹See Schremmer and Stern (1989, p.444-5) for details.

concern with this tax is that “it was in no way adapted to the rise of large industrial enterprises, of factories and new branches of industry [...] in short, to industrial development and the rise of Prussia to an industrial state” (Schremmer and Stern, 1989, p.428). The 1891 reform puts an end to the control of the professional associations and introduces the duty to disclose business accounts to tax officials. Not surprisingly, politicians representing business’ interest opposed to most of these changes.

Along the technology of extraction, the income tax changes tax rates. Two measures make the tax mildly more progressive. First, the exemption limit is raised to 900 marks, *de facto* exempting two-thirds of the population. Yet paradoxically, in the presence of tax-based electoral malapportionment, this measure also reduces the political rights and leverage of Prussia’s low-income population. Second, the top marginal rate is increased to 3.95% of taxable income, a 25 per cent increase with respect to pre-reform levels.¹⁰ As for the incidence of the new tax, of the aggregate sum of 8,376 million marks of taxable income in 1891, two-thirds comes from towns, and one third from the countryside. The analysis of the distribution of the tax burden across sectors reveals that 22% of the taxable income comes from remunerated employment (doctors, lawyers, engineers), 58% from trade, industry, mining and invested capital, and 20% from landed property. Clearly, the new tax targets revenue generated in the modern economy.

The 1891 tax is supplemented in 1893 by a *complementary property tax*. The reform exacerbates the uneven burden of the income tax across sectors: it transfers the business and land taxes to the localities. Since nobles are exempted from local taxes, this reform represents a large tax break for large landowners (Hallerberg, 2002, p.18). Predictably, politicians representing urban interests also oppose the 1893 reform frontally.

We organize our analysis of the adoption of the income tax in Prussia in three sections. First, we test the micro-foundations of our theory by examining the Parliamentary debate and partisan support for the adoption of the income tax bills during the final votes taken

¹⁰The initial rate increases over time, reaching 15% by 1914.

in 1891 and 1893. Second, we show the shift of the incidence of taxation from districts specializing in agriculture to districts specializing in the modern sector. Third, we provide district-level evidence of the political gains following income tax adoption by studying changes in electoral returns of parties representing different income groups.

4.1 Support and Opposition for Income Tax adoption during the Parliamentary Debates

The 1891 income tax is adopted after a long political process, characterized by intense political conflict. One finds such disagreement both in the Prussian *Staatsministerium* —where the bill of the new income tax is drafted— and during the deliberations in the Prussian Lower House. Our theoretical discussion has identified the issues that are salient and contested and the political cleavages over these questions. One type of issue that creates significant political controversy concerns the incidence of the new tax on different sectors, and also the design of the institutions that monitor and assess the new tax. The other issues that are politically divisive concern the relationship between the new income tax and Prussia’s censitary electoral law, adopted back in 1849. As it has been mentioned before, this electoral system establishes a tight link between the payment of taxes and the political rights of individuals. In light of the connection between tax payments and voting rights, the income tax bill raises considerable political disagreement about its electoral implications. Before presenting an analysis of the roll call vote, we briefly discuss the political disagreement over these two issues on the floor of Prussia’s *Abgeordnetenhaus*.

4.1.1 The Uneven Tax Burden of the Income Tax

The income tax bill that is discussed in the Prussian Lower House subjects all Prussian citizens to the duty to pay the new income tax, but establishes exemptions for lower income individuals. In contrast to previous forms of direct taxation, the new law subjected not just individuals, but also corporations to the payment of taxes (Kennan, 1910, p.89). Predictably,

politicians with links to the modern economy did not welcome this provision.¹¹

The proposal to impose the new income tax on corporations originates in the Prussian *Staatsministerium* (Mathiak, 2011, p.116). In a decisive meeting that takes place on October 17, 1890. Herrfurth—a Conservative politician and Prussia’s Finance Minister at the time—placed this issue on the new legislation against considerable opposition. In fact, the proposal to tax corporations survives in the final legislation that is adopted by Prussia’s lower chamber only with a very narrow margin of two votes. Miquel himself opposes the idea, and demands the exemption of juridical persons from the incidence of taxation, while raising concerns about the double taxation of capital (Mathiak, 2011, p.115). On the floor of Prussia’s Abgeordnetenhaus, this proposal is the object of significant political controversy. Conservative parties representing the interests of large landowners support the extension of the scope of taxation to corporations.¹² Rauchhaupt (Conservative) argued that the taxation of industrial capital is an improvement over earlier tax bills that had been considered in previous decades. Other Conservatives (such as Zedlitz Neukirch) concur, suggesting, even only tentatively, their willingness to consider even an increase in the marginal tax rate. On the question of taxation of the corporations, representatives of the Catholic *Zentrum* side with Conservatives arguing in favor of the taxation of corporations and rebutting arguments about the double taxation of capital income.

Free Liberals, a party that represents the interests of Germany’s modern industrial sector, are the strongest political opponents of the provision to include corporations as part of the income tax. Rickert, the party leader, attacks the new income tax arguing that the latter is a policy that helps “flat land and East Prussia to the detriment of the West”. Rickert argues that “in East Prussia, the law privileges estates (*Gutsbezirke*) to the detriment of localities with peasant owned-land. The incidence of the new tax begins where agrarian interests

¹¹The type of corporations that were required to pay income taxes included joint stock companies, mining companies registered societies or associations whose commercial activity extended beyond the circle of their members and limited liability companies except public corporations or companies that devoted their activity exclusively to charitable, scientific or artistic purposes.

¹²Our Conservative category, includes representatives of both the Conservative Party and the Free Conservative Party.

ends”. For Rickert the most visible sign of this bias in favor of the agrarian interests is the double taxation of the income of capital owners.

The National Liberals, a party representing the big industrialists, is more divided over the new bill. While some National Liberal politicians object to the inclusion of taxation of companies, most National Liberals are, however, supportive of the legislation. The explanation of this support, we will show below, can be attributed to the political gains created by the new law for high-income voters. Even though big industrialists will bear the burden of the new tax, they expect to gain politically, as a result of the higher weighting of the votes of high-income voters.

The shift of the incidence of income taxation to the modern sector is not followed by equivalent increases in taxation of land. First, there is an attempt to introduce an inheritance tax. This bill, which would disproportionately target landed elites, is presented by Miquel in 1890 along the income tax. Conservatives oppose an inheritance tax on two grounds: it is interpreted as a form of double-taxation, and it is argued to “destroy the family”. Given the balance of Parliamentary forces, the inheritance tax proposal does not even make it out of committee (Hallerberg, 2002). Second, the income tax is not compensated by increases in the land tax. If any, the latter decreases after the 1893 income tax reform, in which the land tax is transferred to localities while exempting nobility from local taxes (*ibid.*).¹³ All in all, the adoption of the income tax is not compensated by new taxes levied on agrarian elites. The new tax is intended to bring about a permanent shift in the relative incidence of taxation from the traditional to the modern economy.

One may conjecture that industrial elites could still derive indirect economic gains from the adoption of the income tax adoption if the new revenue is invested in productivity-enhancing policies such as communications or education. In Appendix E, we draw on evidence based on parliamentary debates, constitutional provisions and spending data to address this alternative hypothesis. We find no evidence of such additional economic gains

¹³Hallerberg (1996) also shows that land taxes decrease over this period in German principalities with strong landed elites and pre-democratic political institutions, such as Prussia.

from income tax adoption reaped by the industrial elites.

A second question over which we find significant division in the Prussian Lower House concerns the creation of the new tax bureaucracy that assesses the new tax. Its collection, which is premised on the self-declaration of income, requires, at the same time, a skilled bureaucracy that can reduce opportunities for tax evasion. Prussian politicians consider two possible models of appointment to the new tax bureaucracy. One such model, the Weberian model, is already in place in Saxony, a state that adopted the income tax in 1869. In Saxony, tax collectors were independent bureaucrats. The alternative proposal advanced by officials of the Prussian *Staatsministerium* is to leave responsibilities to verify income in the hands of the *Landräte*. The latter are closely affiliated with Conservatives and occupy a unique position in Prussia's administration. Their responsibilities include conscription to the military and the mobilization of voters at times of elections (Kühne, 1994).

In the initial deliberations of the income tax bill in the Prussian tax ministry, Michels recommends to appoint "bureaucrats that are trained in an ad-hoc fashion" as presidents of the commissions verifying income commissions that are to be established in every Prussian commune (Mathiak, 2011, p.116). In the deliberations in the Prussian Lower House, both National Liberal and *Zentrum* deputies support the creation of impartial tax administrators responsible with the collection of taxes. This position is also endorsed by political economy experts, such as Gustav Cohn, a prominent expert on taxation. Invoking Saxony's example, Cohn recommends to rely on Saxony's model to design the new institutions of tax collection (Cohn, 1891, p.20-52).

Conservative politicians disagree and remain adamant in their recommendation to appoint *Landräte* as presidents of the commission that verified income. In the initial deliberations of this issue in the *Staatsministerium*, Herfurth insist on maintaining this crucial administrative position in the hands of the *Landräte*. As Herrfurth argue, the political influence and "reputation" of the *Landräte* could be diminished if the latter does not chair this commission. This argument triumphs in the deliberations of the ministry. In the second

chamber, Conservative politicians such as Rauchhaupt also argue in support of maintaining the crucial position of the *Landräte*. People from outside the community, Rauchhaupt argues, “do not have the ability to assess the income of individuals”. The appointment of the Landräte as the presidents of the commission verifying income is a significant political decision that entrenches the political power of Conservatives in the new tax administration.

4.1.2 Exacerbating Political Inequities

A distinct political issue that is the object of significant controversy in the Prussian parliament concerns the relationship between the new tax and voting rights. This is a particularly salient issue, as the payment of direct taxes (and their amount) stand in a direct relationship to the political rights of wealthy individuals in the Prussian electoral system (Mauz, 1935). As a publication of the Prussian *Staatsministerium* of 1889 reaffirms the political repercussions of the new tax “one cannot avoid the fact that any changes in taxes will bring about changes in the boundaries of the new *Urwahlabteilungen*”, the electoral tiers in each locality (Thier, 1999, p.886).

The question facing Prussian lawmakers is whether taxation should be designed to offset the inequalities in representation that existed under the censitary electoral system or whether the new tax should, in fact, amplify these inequalities in representation. The partisan divide is most clear. Conservatives and National Liberals represent individuals that vote in the first class of Prussia’s electoral system. By the mid-1880’s, over 10 percent of Prussia’s first district (*Urwahlbezirke*) consist of only one single voter and 7.8 percent of these districts have only two voters (Thier, 1999, p.887). National Liberals and Conservatives share the concern to use the new income tax to further consolidate their electoral advantage and prevent the entry of middle class voters in the first tier of the electoral system. These political considerations account for the counterintuitive recommendation made by politicians from these parties to impose a *higher* marginal tax rate on top income earners. These politicians are willing to tax themselves at a higher rate in exchange for higher political rights and a

higher inequality in political representation.

By contrast, parties representing voters who have the opportunity to move into higher classes of the electoral system make recommendations for changes to the tax bill that increase the electoral rights of these groups. One such proposal that is discussed both in the parliamentary commission and on the floor of the Prussian Lower House recommends to assign a “fictitious” tax payment to voters to allow the latter to move into different tax categories. According to the proposal made by deputies of *Zentrum*, the voting law should assign tax-payers additional 30 marks as tax payments. This change is expected to lead in the increase of voters with medium income in the higher electoral brackets and to reduce the political power of higher income voters. Both Conservative and National Liberal politicians reject, however, these proposals, considering them as an “unjustifiable injustice”.

As a result of the 1893 reform, Conservatives change their mind on creating fictitious tax payment. That reform transfers land taxes to the municipalities. Since nobles are exempted from paying local taxes, they fear to drop down one or even two classes in the Prussian Lower House. To prevent this possibility, the Prussian Parliament passes an electoral reform which gives a fictitious tax payment to land tax payers (i.e. agrarian elites) as if they had paid the taxes at the state level (Hallerberg, 2002, p.24). The new electoral provision implies that incumbent elites do not lose politically from the adoption of the income tax. It also explains why conservative parties were able to monopolize Parliament all the way to WWI despite the significant increase in the tax burden assumed by industrial elites.

4.2 Modeling the 1891 and 1893 Roll Call Votes

Our theoretical argument generates a number of predictions about the partisan support for the income tax bill. We expect Conservative politicians representing landowners to support the income tax bill. They expect both economic and political gains from the adoption of the new legislation. Our predictions about National Liberal deputies are ambiguous: the latter are disfavored economically by the provisions of the new legislation to tax capital

income, but gain politically as a result of increased inequality in representation. In the case of National Liberal candidates, support or opposition to the new income tax depends on the ways deputies assess the relative importance of economic losses versus the political gains from the adoption of the new tax. Free Liberals anticipate both economic and political losses from the introduction of the new tax. As compared to National Liberal deputies, Free Liberals represent voters who are less wealthy and less likely to reap any political gains from the adoption of the new law. To test these predictions, our empirical analysis includes an indicator variable for the partisanship of the legislator. This can be *Conservative*, *National Liberal*, *Free Liberal*, *Minority*, or *Zentrum*.¹⁴

In addition to our partisan variables, our empirical models include economic and political controls that are aggregated at the Prussian electoral district, using the correspondence table between localities and districts developed by Kühne (1994). To the extent that data are available, we include the same controls than in the cross-sectional test: first, we include a measure of *Landholding Inequality* to capture the structural power of landed elites at the district level. We draw this Gini index from Ziblatt (2008). We also control for district-level *Population*. In the absence of district-level data of industrial labor, we include a measure of the share of population in urban areas, *Urban Population*, which nicely captures levels of industrial development (i.e. big cities are organized around industrial activity). Finally, we include a measure of *Linguistic Fractionalization*, which captures social divisions that may preempt fiscal innovation (Besley and Persson, 2011). We prefer this measure over the share of Catholics in the population as, in Prussia, the latter is collinear with having a *Zentrum* representative, which is another variable in the analysis.

4.2.1 Roll Call Vote Results

We begin our examination of the economic and political determinants of support for the adoption of the income tax by investigating the decisive vote over the entire income

¹⁴The SPD did not compete in Prussian elections prior to 1903.

tax bill taken in Prussia in 1891 and the complementary property tax of 1893. We code the dependent variables as follows: for opponents of the new income tax, it equals 0; for politicians that abstain, it equals 1; and for politicians supporting the adoption of the income tax, it equals 2. Excused and Unexcused deputies can be treated differently. In Tale 4, we set the votes of Excused deputies' vote, and those of Unexcused deputies as equaling abstention.¹⁵ Accordingly, 305 (220) deputies voted in favor, 31 (137) abstained, and 48 (24) voted against the 1891 (1893) bill.¹⁶ We predict adoption using ordinal probit models.

Column 1 in Table 4 shows the existence of a strong relationship between district-level economic conditions and support for the Prussian income tax of 1891. We find that representatives from districts with high levels of landholding inequality are more likely to support income tax adoption, holding population size and language fractionalization constant. By contrast, deputies representing more urban districts are more likely to oppose the new tax.

The partisanship of elected politicians stand in strong correlation with the economic conditions in their home district (see Appendix D for details). While Conservative parties represent landed interests, industrial interests are upheld by Liberal parties. Among these, National Liberals, represent the interests of large employers, while Free Liberals represent urban, professional classes and the *petit bourgeoisie*. Along Conservatives and Liberals, we find a variety of candidates that represent religious or ethnic identities. These include the *Zentrum*, the Polish party, and the party representing Danish voters.

Based on strong alignment between sectoral interest and political party representation, in columns 2-4 we replace the economic characteristics of the district for the party affiliation of the elected deputy. This allows us to examine the correlation between partisanship and support for income tax adoption and to identify any divide among the Liberal parties. In these models, we establish *Zentrum* as the excluded category.

¹⁵Appendix F shows that this assumption is inconsequential. We may code excused and non-excused as abstainers or set them to missing, that results hold.

¹⁶Appendix F presents the unfiltered breakdown of each roll call vote. The increase in abstention in the 1893 bill comes from *Zentrum* representatives. Unlike Conservatives, *Zentrum* prefers the inheritance tax to the property tax, yet they do not want to side by the Free Liberals either.

We begin by analyzing the position of Conservative deputies. These deputies represent landed elites, who are expected to gain both politically and economically from income tax adoption. The results reported in column 2 of Table 4 support our hypotheses. Conservative deputies unanimously vote in favor of the 1891 and 1893 income tax bill.

National Liberal deputies, representing the interests of large industrial firms are cross-pressured when considering the advantages of the new income tax. On the one hand, they represent high-income voters who are likely to benefit from tax-based electoral malapportionment. However, the new tax contained a number of unfavorable provisions for the industrial sector. It pushed the incidence of taxation to the modern sector by tapping previously undetected sources of income and by maintaining income assessment in the countryside in hands of the Landräte. The political position of National Liberal deputies reflect this divisions. Still, a majority of National Liberals deputies (71 out of 79) considered that the political gains of the income tax outweigh its potential economic costs.

Finally, the Free Liberals, representing the new urban professions associated with industrialization (e.g. lawyers, traders) have a lot to lose from income tax adoption. Some of their supporters may not earn enough income to take advantage of the inequities in representation. Moreover, the new income tax targets the main sources of income of this group (wages, profits, and interests), thus departing from the status quo under which they are virtually untaxed. Anticipating the economic and political costs associated with a modern income tax, Free Liberals deputies oppose its adoption almost unanimously.

So far, results are consistent with the political and economic gains accrued by each group from the adoption of an income tax. Next, we address an alternative mechanism which may have accounted for support for this reform. Highly unequal districts represented by Conservatives and National Liberals might have favored the income tax in order to preempt political turmoil, much in line with standard models of inter-class redistribution (Acemoglu and Robinson, 2000; Boix, 2003). To address this possibility, columns 3 and 4 control for two proxies of the *threat from below*. The first one is the share of population receiving poor relief

at the district level in 1882. This variable captures pre-existing income inequities as well as (some) willingness of local elites to minimize social strife. The second proxy of the *threat from below* is the share of SPD vote in the 1890 Reichstag election (the SPD did not run for the Prussian Lower House). Given the more permissive electoral rules that were in place for elections to the Reichstag—which granted universal manhood suffrage—the SPD vote genuinely reflects the mobilization capacity of the left. Results suggest that none of these two controls are statistically different from zero. More importantly, the deputy’s partisan affiliation coefficient remains unchanged once we account for alternative hypotheses of tax increase.

Appendix G includes additional robustness checks: First, we account for the *Margin of Victory* of each politician, which may add strategic considerations to support the income tax. Second, we exploit an exogenous source of the variation in the bargaining power of landed elites, namely, the *Napoleonic Treatment*. Third, we use an alternative proxy of the bargaining power of labor, namely, *Labor Scarcity*. Results hold across specifications.

Columns 5 and 6 model the 1893 roll call vote, which seeks to modify the 1891 income tax by introducing a supplementary property tax. The fiscal effects of this tax (purposively) results small compared to the 1891 tax. As of 1900, it only raises 20% of all income taxes. The reason is that nobility is *de facto* exempted from paying the supplementary tax. The party breakdown in 1893 replicates the 1891 roll call vote: Conservatives and National Liberals support the bill almost unanimously, and the Free Liberals oppose it.

To sum up, the roll call vote analysis yields three results. First, we find that politicians representing rural districts are more likely to support the adoption of the income tax. Secondly, we find strong and robust partisan effects. Conservative and National Liberal deputies, that is, those representing voters that could benefit from amplified tax-based parliamentary malapportionment, are the strongest supporters of the new tax. Third, threats from below, approximated by shares of poor population and support of the Socialist Party, do not predict a positive vote on the bill, nor do these variables affect the partisan divide

around the income tax.

4.3 Fiscal Gains Following Income Tax Adoption

We conjecture that politicians representing the interests of landowners support the new income tax because they anticipate fiscal gains from its adoption. Fiscal gains result from the rebalancing of the incidence of taxation between agricultural sectors and industry, and from a heavier taxation of manufacturing interests. Do subsequent patterns of taxation confirm these expectations?

To test whether landowners reaped fiscal benefits from the adoption of the new tax, we examine whether the incidence of direct personal taxation on industry relative to land accelerates after the adoption of the 1891 reform. The two direct taxes that are in place in Prussia prior to 1873 are the graduated income tax and the class tax. As argued above, these are pre-modern personal taxes that do not fully tax private income. Under that system, industrial income goes virtually untaxed (Hallerberg, 2002; Schremmer and Stern, 1989). The 1891 and 1893 reforms introduce a modern income tax and a supplementary wealth tax, respectively. To investigate whether the tax reforms imposed a higher fiscal burden on industry and shifted the relative tax incidence from land to industry, we examine empirically the relationship between district-level characteristics and the *percentage increase* of personal direct taxation following the 1891/93 reforms.

We expect to find a rise in the incidence of taxation in regions with higher levels of urbanization, due to the taxation of the income of enterprises mandated in the legislation. By contrast, we expect to find no significant increases in tax revenues in regions with higher levels of landholding inequality. We expect little, if any, increase in the tax pressure on the income of the landed elites, as the income of this group is exempted after the 1893 reform (for nobility only) and is assessed by the *Landräte*, who were appointed by the very same landlords they were to tax.

To compute the overtime increase in the tax burden, we work with the two closest fiscal

records to adoption year, one before, 1878, another after, 1900, for which per capita income tax is made available at the locality level. Importantly, tax regulation did not change between 1873 and 1891/3, nor between 1891/3 and 1900. Thus, the 1878 and 1900 data points establish proper pre-/post-reform benchmarks to assess the tax reform outcomes. To facilitate comparison, locality-level tax yield data are aggregated at the electoral district, hereafter the unit of analysis. Our sample includes 90.3% of all Prussian electoral districts by 1878.

On average, per capita income tax increases by 95% between 1878 and 1900. That is, per-capita income tax yields doubles after the tax reform. However, the burden falls disproportionately across districts. Figure 3 plots the percentage increase of income tax yields between 1878 and 1900 as a function of initial urban population (a proxy for the relative importance of industry in the economic output of the locality), and landholding inequality. Consistent with our hypothesis, we observe an increase in income tax yields in highly urbanized electoral districts one decade after the adoption of the new tax. This result is consistent with our prediction that the new income tax targets sources of revenues that had been hitherto untaxed. In stark contrast, income tax yields do not increase in principalities with high levels of landholding inequality, despite the fact that Prussia's largest fortunes are concentrated in these districts. If any, we find that the tax pressure levied on landed elites decreases over time. The explanation of this finding lies in the 1893 reform plus the rigged system of assessment in the countryside that the new law had established.

Table 5 reexamines this evidence in a regression framework. Column 1 accounts for the initial conditions, as units might differ in pre-reform *levels* of taxation and urbanization, as well as the percentage increase of urban population, the proxy of industrial *growth*. Holding these characteristics constant, we find that districts with higher levels of landholding inequality experience, on average, a *decrease* in the burden of taxation. To the contrary, districts in which industry grows most (corresponding to higher urbanization growth), experience an *increase* in the tax burden.

The results presented in column 1 further illustrate the capacity of landowners to resist taxation. Another possible interpretation of these findings is that the profitability of land was low and, as such, it remained exempted from income tax payments. To address this possibility, we control for the *Productivity of Land* from 1893 to 1897 (Grant, 2005). If tax yields correlate with prosperity, districts with highly productive land should pay higher income taxes than those with depressed agriculture. However, the results reported column 2 suggests that there is no relationship between land productivity and the tax burden.

The negative coefficient for landholding inequality might not reflect the capacity to escape taxation, but the absence of conditions associated with high inequality and a militant labor movement. The results reported in column 3 use two additional variables to control for this relationship. Here, we examine the relationship between the *Share of Population Receiving Poor Relief* in 1887 as well as the *SPD Vote Share* in the 1890 Reichstag election. Additionally, we control for the level of *Linguistic Fractionalization*, as a potential factor impeding investment in fiscal capacity, using the index of Prussian linguistic diversity constructed in Ardanaz and Mares (2014). The two *threat from below* proxies hold the sign that one would expect based on median-voter models of redistribution. Likewise, linguistic fractionalization seems to slow down the extractive capacity of the new tax. Importantly, keeping these factors constant, we still observe that districts with high landholding inequality are capable to resist hikes in taxation.

Appendix H reports additional evidence of the fiscal gains. First, it shows that districts represented by Conservative politicians in 1891 (1893) experience a reduction of the tax burden within ten years of income tax adoption. Second, it shows that a positive vote in the 1891 (1893) does not predict a decrease in the tax pressure, as National Liberals also voted in favor of the bill. These legislators advanced their political leverage even at the cost of higher tax pressure. Third, the analysis shows that districts represented by Liberal politicians in 1891 experience an increase in taxation within ten years of income tax adoption.

4.4 Political Gains Following Income Tax Adoption

As discussed above, electoral rules that condition voting rights on tax payments are likely to facilitate the formation of a political coalition supporting income tax introduction. The Prussian electoral system, introduced in 1849, weighs votes by the amount of direct taxes paid by voters. The new income tax, we claim, exacerbates the connection between political representation and tax payments, as wealthier voters (i.e. landed and industrial elites) pay disproportionately higher income taxes and, as a direct consequence, secure representation in the upper tiers (*Urwahlbezirk*) of each district. In light of the amplified inequities in representation, we expect the adoption of the income tax to operate, *de facto*, as a barrier to political participation of the middle-class and low-income voters. Specifically, we conjecture to find a decline in the turnout of middle-class and low-income voters following the adoption of the new tax, as they realize that the value of their vote has diminished.

Certainly, the value of the votes of middle- and low-income voters is low under a censitary system even *before* the tax reform. However, following the introduction of the income tax, the vote of a high-income voter may value as much as thousands of votes of lower-income voters (Kühne, 1994). In light of these inequities, we expect turnout incentives to weaken even further among middle- and low-income voters.¹⁷ By contrast, an exacerbated link between direct tax payment and voting rights is likely to benefit big landowners as well as wealthy industrialists.

To examine the negative effect of the new tax on the political mobilization of non-elite voters, we examine changes in the vote share of the Free Liberal party before and after the adoption of the income tax. We focus on this party as it represents the interest of urban, middle-class voters, who are likely to lose both economically and politically from the adoption of the income tax. We expect that the adoption of the income tax had consequential dissuasive effects on turnout rates of supporters of the Free Liberal party. To test this hypothesis, we first investigate whether Free Liberal voters abstain at higher rates after

¹⁷Turnout in the state elections was historically half the levels of Reich's elections.

income tax adoption, and then examine which political parties benefit from Free Liberal supporters' abstention.

We begin by examining *changes* in turnout between the 1888 and 1893 elections, which are the elections immediately before and after income tax adoption.¹⁸ To carry out this analysis, for each seat we compute the percentage of votes that every party (i.e. winner and losers) receives in both elections.

If tax-based electoral provisions discourage electoral participation of Free Liberal supporters, we should observe reductions in political participation in districts that strongly supported Free Liberal candidates prior to the adoption of the income tax. To test this prediction, column 1 in Table 6 regresses changes in turnout between 1888 and 1893 on pre-reform levels of Free Liberal vote share. Column 2 includes a battery of district-level controls that might confound 1888 Free Liberal support and the change in turnout between 1888 and 1893 elections. In both columns, the coefficient for the *Free Liberal Vote Share in 1888* is negative and statistically significant, suggesting that high levels of Free Liberal support before the adoption of the income tax are correlated with a decrease in turnout between 1888 and 1893. We find this evidence to be consistent with the theoretical mechanism we advance: namely, the new income tax dissuades electoral participation of the urban, middle-class, who naturally lean toward the Free Liberals.

Next, we examine who benefits from the abstention of Free Liberal voters after the adoption of the income tax. Our explanation posits that parties representing the interests of landed and industrial elites, namely Conservatives and National Liberals, should benefit from the adoption of any policy that provides a tighter connection between tax payments and representation. The results reported in columns 3 to 8 in Table 6 are consistent with this conjecture. We find that electoral support for Conservative and National Liberal parties in the 1893 election increases in districts that had strongly supported the Free Liberals in 1888. For each percentage point lost by the Free Liberals, Conservatives and National Liberals gain

¹⁸The 1893 complementary property tax was adopted prior to the general election held later that year.

almost 0.25 points each. By contrast, *Zentrum* and minority parties, which do not represent voters in the high-end of the income distribution, do not benefit from the Free Liberal loss.¹⁹

While on their own, the results reported in columns 3-8 do not tease out whether the increase in Conservative and National Liberal vote share is the result of vote change or changes in mobilization, the results in columns 1 and 2 suggest that the latter mechanism is in place. That is, the change in political support in Free Liberal districts between 1888 and 1893 can be safely attributed to the higher abstention of Free Liberal supporters. The abstention of Free Liberals, in turn, benefited representatives of the parties that had favored the adoption of the income tax in the expectation of future political gains.

5 Conclusion

This paper contributes to the growing literature examining the development of the modern state. We explore the political origins of the income tax, one of the most efficient instruments of revenue extraction ever. We demonstrate that the politics of income tax adoption presents a number of empirical regularities that are puzzling for canonical models of taxation and redistribution. First, non-democratic countries with restrictive electoral rules pioneer the adoption of this new form of taxation, while democratic countries lag behind in the introduction of the new policy. Furthermore, demands for the early adoption of the new income tax originates with politicians representing the interests of wealthy landowners.

Our paper presents an explanation for these counterintuitive empirical regularities. We identify two sets of considerations that explain the decision of conservative politicians in principalities with restrictive suffrage to support the adoption of an income tax. First, the early income tax shifts the incidence of taxation from the traditional agrarian sector to the modern economy. As such, the income tax results from an inter-sectoral (or intra-elite) conflict around the burden of taxation. Second, in addition to fiscal considerations,

¹⁹The effect for *Zentrum* is very small, and it is not statistically significant once we control for district-level characteristics.

politicians in non-democratic settings with restrictive electoral institutions reap political payoffs upon the adoption of the new tax. In the presence of electoral rules that condition voting rights on direct tax payments, the adoption of an income tax generates electoral benefits that secure the political advantages of high-income tax payers.

The two motivations of early income tax —inter-sectoral redistribution of the incidence of taxation and participation barriers to lower and middle-income voters—elucidate alternative functions played by taxation to those advanced by Acemoglu and Robinson (2000) and Boix (2003), and enrich our understanding of the origins of fiscal capacity in the Western World. Similarly, the political and fiscal motivations of early income tax adoption in non-democratic settings help us to explain why this tax is adopted 80 years before its transformation into a highly progressive fiscal machine (Scheve and Stasavage, 2010). The original income tax does not seek to redistribute income from the wealthy to the poor. This is the reason that it survives for a long time with relative low levels of progressivity and marginal rates. The factors accounting for the *origin* of the income tax, fiscal and political advantages to incumbent elites, are different from the factors accounting for changes in its progressivity, war and social fairness.

Altogether, the evidence in this paper suggests that the early income tax is not a democratic achievement, but a strategic move by incumbent elites in non-democratic states to enhance their economic position and to reap short-term electoral advantages in political contests under restrictive electoral rules.

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Figure 1: Year of Income Tax Adoption as a function of Franchise Level

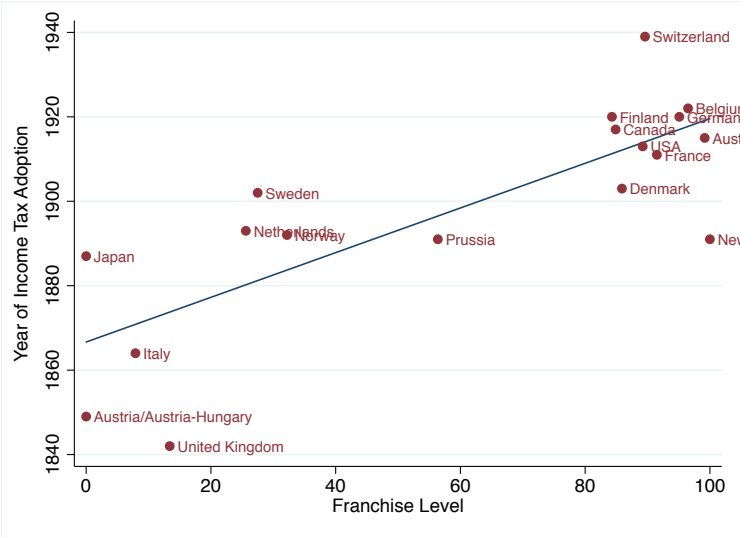
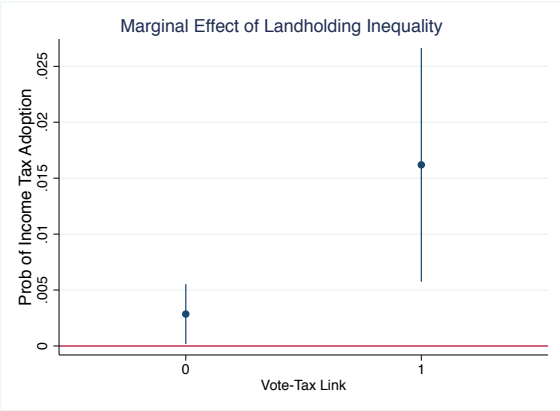
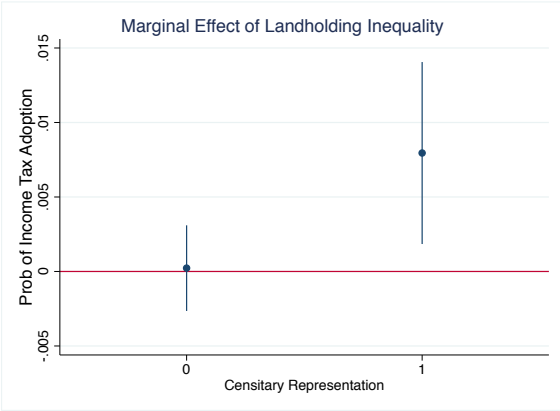


Figure 2: Marginal Effect of Landholding Inequality on Income Tax Adoption as a Function of Electoral Provisions

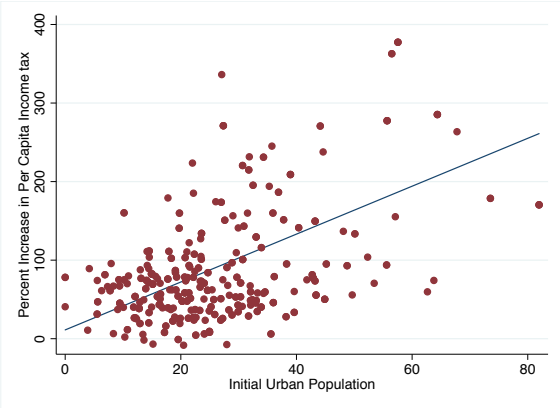


(a) Vote-Tax Link

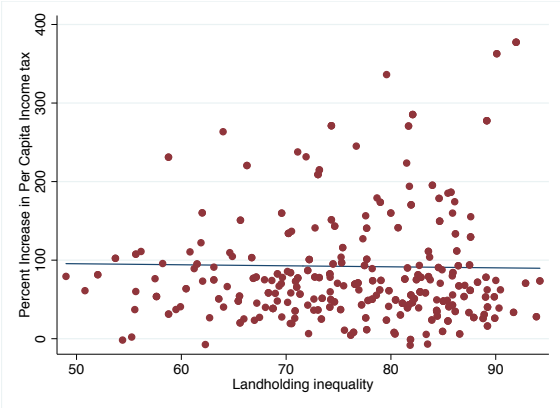


(b) Censitary Electoral System

Figure 3: Percent Change in Per Capita Income Tax Yields between 1878 and 1900, a Decade before and after Income Tax Adoption. Unit of Analysis: the Electoral District.



(a) Modern Sector Districts



(b) Traditional Sector Districts

Table 1: **Political Characteristics of Early and Late Income Tax Adopters**

	<i>Early Adopters</i>	<i>Late Adopters</i>	<i>Difference</i>	<i>p-value</i>
Polity Score	-0.444	7.667	8.111	0.001
Tax-Barriers	0.677	0	-0.667	0.001
Conservative Seat Share	42.25	29.98	-13.27	0.132
Land Inequality	71.12	51.77	- 19.34	0.067

Early adopters are: Austria-Hungary, Italy, Japan, Netherlands, New Zealand, Norway, Prussia, Sweden and United Kingdom. Late adopters are: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Switzerland, and United States. For the Polity, Tax-Based electoral Provisions, and Conservative Seat Share T-tests, Germany and Prussia are considered independent units. Conservative Seat Share data is missing for Austria-Hungary and Japan, as they had no seating parliament by the year of income tax adoption. That T-test should be interpreted as a conservative estimate. For Land Inequality, Prussia is not considered given the lack of specific data.

Table 2: **Year of Adoption of the Income Tax in German Principalities**

<i>Year</i>	<i>Principality</i>	<i>Year</i>	<i>Principality</i>
1869	Hessen	1903	Wurttemberg
1874	Sachsen	1903	Hamburg
1874	Bremen	1904	Anhalt
1884	Baden	1906	Oldenburg
1886	Braunschweig	1908	Sachsen-Coburg und Gotha
1889	Lubeck	1908	Waldeck
1891	Prussia	1909	Reuss Jungere Linie
1893	Reuss Altere Linie	1910	Bavaria
1896	Sachsen-Altenburg	1910	Sachsen-Weimar
1901	Schaumburg-Lippe	1910	Sachsen-Meiningen
1901	Elsass-Lothr	1912	Schwarzburg-Sonderhausen
1902	Schwarzburg-Rudolstadt	1912	Lippe

Source: Popitz (1926), supplemented by publications of laws of the individual principalities.

Table 3: Duration Models of Income Tax Adoption in German States

	(1)	(2)	(3)	(4)	(5)	(6)
Landholding Inequality [†]	0.050** (0.020)	0.058*** (0.022)	0.049** (0.023)	0.057** (0.027)	0.060** (0.026)	0.004 (0.027)
Landholding Inequality × Vote-Tax Link					0.158** (0.068)	
Landholding Inequality × Censitary						0.146*** (0.047)
Catholics (%)	0.009 (0.011)	0.010 (0.012)	0.008 (0.011)	0.015 (0.013)	0.040* (0.020)	-0.013 (0.016)
ln(Population)	0.136 (0.134)	0.182 (0.130)	0.185 (0.130)	0.140 (0.142)	0.122 (0.179)	0.328* (0.176)
Industrial Labor (%)	0.076*** (0.028)	0.103*** (0.027)	0.105*** (0.028)	0.079** (0.033)	0.135*** (0.039)	0.119*** (0.032)
# Principalities having Income Tax by Year t		-0.137*** (0.040)	-0.137*** (0.041)	-0.143*** (0.041)	-0.130*** (0.041)	-0.135*** (0.042)
Population Poor (%)			0.096 (0.098)	0.017 (0.125)	-0.078 (0.178)	0.011 (0.133)
SPD Vote Share for Reichstag (%)				0.015 (0.012)		
Vote-Tax Link					-11.033** (4.731)	
Censitary						-10.908*** (3.550)
Constant	-9.152*** (2.323)	-11.003*** (2.327)	-10.738*** (2.461)	-10.345*** (2.602)	-12.372*** (2.898)	-9.648*** (3.135)
Duration Dependence	Yes	Yes	Yes	Yes	Yes	Yes
German Principalities	22	22	22	22	22	22
German Principalities-Year	645	645	645	645	645	645
Pseudo-R2	0.241	0.303	0.307	0.314	0.375	0.357

[†]Landholding Inequality is rescaled from 0-1 to 0-100 to facilitate comparison with other continuous variables. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4: **Ordinal Probit Models of the 1891 and 1893 Income Tax Roll Call Votes at the Prussian Lower House.** 0 - against, 1 - abstention, 2 - in favor. Excused deputies are coded as missing and Non-Excused as Abstainers. For alternative assumptions, refer to Appendix F. In Models 2-4 and 6, Zentrum is the excluded category.

	1891 Bill				1893 Bill	
	(1)	(2)	(3)	(4)	(5)	(6)
Landholding Inequality [†]	0.019** (0.009)				0.031*** (0.009)	
Urban Population (%)	-0.015*** (0.004)				-0.009** (0.004)	
Conservative Deputy		0.708*** (0.195)	0.683*** (0.201)	0.708*** (0.209)		2.401*** (0.220)
National Liberal Deputy		0.696*** (0.256)	0.642** (0.259)	0.705*** (0.273)		2.159*** (0.340)
Free Liberal Deputy		-2.553*** (0.596)	-2.568*** (0.638)	-2.521*** (0.627)		-0.939** (0.475)
Minority Deputy		-0.235 (0.306)	-0.249 (0.308)	-0.236 (0.307)		0.079 (0.270)
ln(Population)	-0.023 (0.160)	-0.182 (0.165)	-0.215 (0.179)	-0.188 (0.176)	-0.291* (0.160)	-0.416** (0.169)
Linguistic Fractionalization	-0.003 (0.005)	0.012** (0.006)	0.012* (0.006)	0.011* (0.006)	-0.013*** (0.004)	-0.006 (0.004)
Population Poor (%)			0.008 (0.061)	0.015 (0.063)		0.006 (0.060)
SPD Vote Share in Reichstag 1890 (%)				-0.004 (0.008)		-0.015* (0.009)
Observations	364	363	356	356	362	355
Pseudo-R2	0.036	0.191	0.184	0.184	0.047	0.414

[†]Landholding Inequality is rescaled from 0-1 to 0-100 to facilitate comparison with other continuous variables. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: **Fiscal Outcomes of Income Tax Adoption: Percentage Growth of Per Capita Income Tax as a function of Landholding Inequality and Initial Conditions. Unit of Analysis: the Electoral District.**

	(1)	(2)	(3)
Pre-reform Urbanization (1878, in %)	4.662*** (0.868)	4.670*** (0.876)	3.965*** (0.965)
Landholding Inequality [†]	-2.189*** (0.829)	-2.130*** (0.792)	-2.415*** (0.872)
Urbanization Growth (1878-1900)	1.036* (0.549)	1.049* (0.558)	0.896 (0.615)
Pre-Reform Personal Taxation (1878)	-23.724** (10.025)	-23.749** (11.680)	-39.271*** (13.968)
Rural Productivity (1893-1897)		-0.001 (0.033)	-0.011 (0.034)
Pre-Reform Population Poor (%)			11.169** (4.727)
Pre-Reform SPD Vote Share for Reichstag (%)			1.051 (0.711)
Linguistic Fractionalization			-0.673*** (0.233)
Constant	165.699*** (50.543)	161.871*** (55.003)	210.650*** (65.630)
Observations	228	227	214
R-squared	0.312	0.313	0.344

[†]Landholding Inequality is rescaled from 0-1 to 0-100 to facilitate comparison with other continuous variables. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Where and Why Incumbent Elites Benefit Politically from the Income Tax?

	Δ Turnout 1888-1893		Δ Electoral Support 1888-1893							
	(1)	(2)	Conservatives		National Liberals		Zentrum		Independents	
	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
Free Liberal Vote Share in 1888	-0.097*** (0.023)	-0.078*** (0.028)	0.127** (0.064)	0.255*** (0.079)	0.134** (0.057)	0.234*** (0.077)	0.033* (0.019)	0.028 (0.029)	-0.015 (0.025)	-0.026 (0.038)
District-Level Controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
# of Electoral Districts	418	389	418	389	418	389	418	389	418	389
R-squared	0.034	0.035	0.011	0.037	0.014	0.037	0.004	0.017	0.001	0.010

Constant not reported. District-level controls are: Landholding inequality, Urban Population as of 1890, Linguistic Fractionalization, Population as of 1890 (logged), Population Poor (%) and SPD Vote Share in the Reichstag 1890 election. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1