

# Autocratic Taxation: Examining the adoption of income taxes in Imperial Germany and Prussia\*

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## Abstract

This paper investigates the non-democratic advantage in the early adoption of the income tax, one of the most important instruments of taxation both in terms of its extractive capacity and administrative sophistication. We claim that oligarchic elites gain twofold from the adoption of the income tax: first, politically, provided they are capable of linking its adoption to pre-existing electoral provisions that condition tax payments to political rights. The income tax, we argue, might exacerbate inequality in political representation in favor of existing elites. Second, oligarchic elites might win also economically, as the income tax can work as a mechanism of sectoral redistribution from industry to land. We test both hypotheses exploiting within-country variation in Wilhelmine Germany, 1871-1912, where principalities had virtually full power on tax and electoral provisions. We also include a roll call analysis of the 1891 Prussian income tax bill to address the micro-logic of the argument.

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# 1 Introduction

This paper seeks to contribute to the growing literature examining the origin of extractive institutions, by examining the origin of one of the most important instruments of taxation, the income tax. The income tax occupies a special position in the tool-kit of instruments of revenue generation. In contrast to all previously existing taxes that levied taxes on visible assets, the income tax assessed an abstract concept —that of income— which, in itself, originated from different sources. To capture these various streams of income, governments took a variety of steps to improve the technology of revenue extraction. This included, among others, the investment and the training of tax assessors who could collect the new taxes, the development of punishment mechanisms for individuals that attempted to evade the payment of these taxes, and the formulation of strategies that allowed tax collectors to assess income originating in different sources. The adoption of the income tax spurred thus both the growth of and the sophistication of the administrative infrastructure of the state and the development of the extractive capacity of the latter. The adoption of the income tax is, thus, one of the most decisive turning points in the development of the modern fiscal state (Tilly, 1990).

The political process of adoption of income taxes by different European countries displays two empirical regularities that are unaccounted by traditional models of taxation and redistribution (Mares and Queralt, 2013). The first striking regularity is that countries characterized by restrictive suffrage or significant forms of malapportionment of political rights pioneered the political process of income tax adoption. Britain pioneered the adoption of the income tax as a permanent form of revenue extraction. The permanent income tax was adopted in 1842, at a time when the suffrage was restricted to only 13% of the population. The Habsburg Empire followed and adopted an income tax in 1849. By contrast, the adoption of an income tax was delayed in countries that adopted extensive suffrage rules early, such as France or Switzerland. France was one of the laggards in the adoption of the income tax, introducing the latter only in 1911. Switzerland adopted a national income tax only in

1939.

The examination of the domestic political coalitions leading to the adoption of the income tax presents a second puzzling regularity, which again contradicts standard models of taxation and redistribution. The most significant political actors pushing for the adoption of the income tax were conservative politicians whose interests were closely aligned with the interests of large and wealthy landowners. In Britain, the political pivot of the electoral coalition in favor of the income tax that was orchestrated by Peel included prominent Tory politicians. By contrast, politicians tied with the interests of the rising manufacturing sector sided in opposition to the adoption of the new tax. In Britain, the most prominent opponents of the new tax were Liberal politicians representing the interests of the industrializing elites located in northwestern constituencies. In Prussia, Germany's largest region that pioneered the new tax we find a similar pattern. The new tax found political support among conservative politicians representing the interests of large landowners.

All principalities that were part of the German Empire until World War I adopted an income tax prior to 1914. Within the German Empire, we find the same empirical regularities in the adoption of income taxes that one observes across the continent. Regions characterized by highly malapportionment electoral institutions pioneered the adoption of income taxes. By contrast, regions with more democratic electoral institutions lagged in the adoption of this new tax. Saxony and Prussia, two regions with censitary electoral institutions pioneered income tax adoption, adopting an income tax in 1871 and 1891, respectively. By contrast, Bavaria, a region with democratic electoral institutions adopted an income tax only in 1910.

These empirical regularities run counter to predictions of the canonical model of taxation and redistribution, the Meltzer-Richard model (Meltzer and Richard, 1981). This model predicts a sharp distributional conflict over the adoption of proportional taxes, not to say progressive taxes such as the income tax. Specifically, low income individuals and politicians representing their interests are expected to be the central political actors supporting the adoption of the income tax. By contrast, higher income individuals are expected to oppose

the adoption of this tax, fearing the sharp redistributive potential of the latter. An auxiliary implication of the Meltzer-Richard model is the extension of the scope of suffrage is likely to increase the probability of adoption of the income tax. Such an expansion in the scope of suffrage is likely to enfranchise lower income voters who are likely to favor the income tax because of its redistributive potential. The prediction of the Meltzer-Richard model regarding the adoption of the income tax is straightforward: democracy, characterized by high levels of enfranchisement, is likely to enhance the probability of adoption of this form of taxation, while its absence is likely to slow down the adoption of this tax.

The prediction of the Meltzer-Richard model about the domestic political coalition supporting the adoption of an income tax also differs diametrically from the prediction formulated in this paper. The Meltzer-Richard model regards lower income voters and politicians representing these constituencies as the main political actor pushing for the adoption of income taxes. Such a prediction cannot account for the domestic political coalition supporting the income tax in countries with restrictive electoral rules. In these countries, the key political actors accounting for the adoption of income taxes are politicians representing the interests of large land-owners, that is, the wealthy. The active support of landowners for the adoption of this tax is puzzling from the perspective of theories of redistribution (Acemoglu and Robinson, 2000; Boix, 2003).

Our paper formulates and tests an explanation that accounts for this political pattern. We argue that the adoption of income taxes did not result from a political conflict between rich and poor voters, but from an intra-elite conflict between owners of fixed and mobile assets. The former, with a vested interest in land, were majority in the restrictive Parliaments of mid-nineteenth century Europe. We claim that these landed elites took advantage of the institutional advantage to pass legislation that improved their economic position vis-à-vis the rising industrial elites. The income tax was mainly targeted to tap into revenue from industrial activity, which had survived virtually untaxed under an obsolete system based on fixed capital taxes. The Conservatives-sponsored income tax sought to rebalance the

incidence of taxation in their favor and against the growing industrial elite's. In Britain, thanks to numerous deductions that followed the 1842 income tax, the effective rate was 30% higher for any income originated in the industrial sector than in the rural and real estate sectors (Mares and Queralt, 2013). We argue that in addition to these economic considerations, landowners had political considerations to support an income tax. In countries where existing electoral rules linked political rights to the payment of income taxes, ruling elites regarded the income tax as a policy instrument that could increase their economic and political advantage.

We present two empirical tests to test the above hypotheses. First, we analyze the economic and political determinants of the adoption of income taxes by German principalities. Such a within-country design allows us to take advantage of the large variation in economic and political conditions across German principalities that existed prior to World War I. In particular, we take advantage of interesting variation in the constitutional arrangements that existed in Germany at the time. We find two broad types of differences in electoral rules among German Länder prior to World War I. On the one hand, there are differences among regions with relatively democratic electoral systems with expansive electoral rights and regions characterized by restrictive suffrage laws. Among the latter regions with non-democratic electoral institutions, we find, in turn, important differences in the ways in which the latter defined inequalities in representation. One set of electoral rules involved the allocation of electors to different chambers based on the total amount of direct taxes paid by the individual. By controlling the upper chambers, the wealthy could veto any major political reform coming from the lower chambers. Another set of rules provided different number of votes to individuals based on the total amount of direct taxes they had paid in the last fiscal year. Consequently, a wealthy individual would cast several votes while a shopkeeper would cast one only. A final set of electoral rules would directly condition the right to vote to the actual payment of direct taxes. This system secured that only the wealthy and the high-middle class would be entitled to vote. Only the upper strata would qualify to pay

for direct taxes, as the latter were *de facto* levied on wealth and, eventually, high incomes. Interestingly, German Principalities tended to have some or various of these electoral provisions at once, which offers us leverage to study the effect of tax-based electoral institutions on the likelihood of adopting the income tax.

We take advantage the large subnational variation in economic, political and institutional conditions across Germany and examine how the latter factors affected on the probability of adoption of income taxes. Our central hypothesis is that existing electoral institutions that restrict suffrage on the basis of income or property qualifications create an unexpected political opportunity for incumbent elites to support the adoption of income taxes. The income tax itself can be used as a tool that restricts access to political suffrage. At the same time, incumbent elites can use the latter to establish political advantage vis-à-vis their rivals (i.e. industrial elites) or to consolidate their electoral position within an electoral system that creates opportunities for unequal representation. If these political gains from taxation are sufficiently large, elites are willing to subject themselves to the payment of higher political taxes in exchange for political participation. Political incumbents are likely to take advantage of these opportunities in conditions of low political fragmentation among right wing parties. We expect low fragmentation to minimize coordination problems among the elites, as it denotes higher preference homogeneity among the elite, it also facilitates the calculus of the political and economic gains of the reform, and minimizes the opportunities of defection. In other words, high levels of electoral fragmentation among right wing parties is likely to fuel inter-elites disagreement about the political advantages of income taxes and is likely to slow down the adoption of income taxation. Likewise, we hypothesize that pre-existing economic advantage of the landed elite will enhance its bargaining power vis-à-vis the industrial elites. High economic inequality should favor the landed elite's capacity to mobilize political resources to pass favorable legislation, such as bribing or intimidation. In order to proxy economic inequality in nineteenth century Europe, we rely on Gini indexes of land concentration.

At the same time, this within-country research design allows us to hold constant two variables that have been regarded as salient determinants of the adoption of an income tax. The first is the importance of war in fiscal capacity building (Scheve and Stasavage, 2010). According to the 1871 German constitution, military expenditures had to be funded by the Empire and not by individual states. As a result, military threats or wars affected all states in the same fashion and could not, in itself explain the variation in the adoption of income taxes. Secondly, the subnational research design allows us to hold the tariff levels constant across states. The *Zollverein* was a core element in the German unification. It dropped internal tariffs while empowered the Reich with the monopoly on external tariff decision-making. Given that individual states did not have the prerogative to fund wars or resort to tariff revenue, two of the most common explanations of major fiscal innovations are kept constant by design. This approach allows us to focus exclusively on the domestic political economy to explain the adoption of the income tax.

Our second empirical test examines the economic and political determinants of a political vote in the German Reichstag that led to the adoption of the income tax in 1891. This allows us to test the micro-level implications of our analysis and examine the relative importance of economic conditions in a district such as the level of inequality in landholding and of political and partisan factors on the support for the adoption of the new tax. The results of this legislator-centered analysis are consistent with the results of the principality-level test.

## **2 Wilhelmine Germany: A Within-Country Design**

We begin by examining the economic and political determinants of the adoption of income taxes by German provinces. In its allocation of fiscal responsibilities between the Reich and the states, the 1870 German constitution limited significantly the ability of the central government to raise direct taxes and left significant fiscal policy authority in the hands of subnational governments (Mauersberg, 1988; Mathiak, 2011). While all German principalities

took advantage of the power to adopt direct taxes, the timing of the adoption of income taxes varied considerably across different states. Bremen and Saxony were some of the principalities that pioneered the adoption of an income tax, introducing the new tax in 1874. Prussia, Imperial Germany's largest province followed adopting an income tax in 1891. By contrast, states such as Bavaria, Sachsen-Meiningen or Sachsen Weimar were laggards in the reforms of fiscal institutions, introducing the income tax only in 1910. In Table 1, we display more systematic information about these patterns, by presenting systematic information about the adoption of the income tax across all German states (Popitz, 1926).

Table 1 here.

Our empirical analysis will examine the relationship between economic and political differences across German principalities on the adoption of an income tax. In addition, we will examine the consequences of differences in electoral and constitutional rules on the adoption of an income tax. Below we will discuss the measurement of our explanatory variables.

## 2.1 Landed Elite's Bargaining Power

We expect that probability of an income tax being adopted to increase with the bargaining power of the landed elite in Parliament. We claim we can rely on their economic power to approximate their political power. The wealthier the old regime elite, the easier is to mobilize resources (e.g. intimidation, vote buying) to pass pieces of legislation that favor their interests. The best proxy for the economic advantage of the landed elite in mid-nineteenth century Europe is landholding inequality, as land was still the main source of wealth. The more concentrated this asset, the wealthier we can assume the landed elites were. We use a standard measure of landholding inequality which is measured as the deviation in inequality from a perfectly equal distribution in the size of farms. We find significant variation in landholding inequality across German provinces as assessed by the 1895 German agricultural census. This Gini of landholding inequality is 0.55 in Baden and 0.56 in Württemberg, 0.74

in Prussia and 0.85 in Anhalt. To put these figures in a comparative context, in 1860, the Gini of landholding inequality across US States varied between 0.34 (Connecticut) and 0.83 (Louisiana), with an average Gini of 0.54. Notice that, contrary to the predictions of the literature on inequality and redistribution (Boix, 2003), we have conjectured that landholding inequality may be positively associated with the adoption of the income tax.

## 2.2 Electoral Provisions

On the eve of World War I, we find remarkable variation in subnational electoral institutions across Imperial Germany. Within the German Empire, we find both states with democratic electoral rules which granted unrestricted right to vote to male voters and states with non-democratic institutions that maintained a variety of restrictions on the right to vote. Baden and Bavaria are examples of the former, especially after the electoral reforms adopted in 1905 and 1906, respectively. However, most German states had restrictive electoral rules that either disenfranchised many of their low-income voters or created significant inequalities in representation, by carving out special electoral privileges for certain groups of voters. The most prominent example of an electoral system that displays both exclusion in the scope of suffrage and inequalities in representation is Prussia's censitary electoral system (*Gesetzsammlung für die Königlich Preussischen Staaten 1848*). Prussia's electoral rules were, however, not unique or exceptional in Germany's broader political landscape.

Our analysis of subnational adoption of income taxes allows us to two interrelated questions that are at the center of an agenda of research that examines the economic and policy consequences of different regimes. The first question is whether we find differences in fiscal outcomes between democracies and non-democracies. The second question examines whether differences in fiscal outcomes among non-democratic regimes and whether some of these differences are affected by the institutional design of different constitutions. In assessing this second proposition, our paper seeks to contribute to a recently growing literature which examines the political consequences of nondemocratic (or "autocratic") political rules

(Acemoglu, Naidu, Restrepo and Robinson, 2013; Cheibub, 1998).

To address these questions, we have created a complete dataset of all electoral laws that governed subnational elections in German principalities during the period between 1870 and 1912. Table A presented in the appendix lists the primary publications used to assemble this dataset of German electoral institutions and the years in which changes in electoral rules were enacted. Using these primary sources, we code three differences in electoral provisions across Germany states. We examine (1) whether electoral laws contained provisions that granted different electoral rights to particular occupations or groups, (2) whether the electoral laws contained provisions that gave higher weights to voters to higher income voters that had made higher tax payments and (3) whether restricted suffrage rights on the basis of payment of taxes. Let us discuss these three dimensions of variation in Germany's electoral institutions of the time.

One first type of provisions by which German constitutions maintained inequalities in representation was by granting special electoral rights to privileged groups, such as nobles or members of the clergy. These types of inequalities in representation (which were also known among constitutional experts of the time as *Klassenwahlrecht*) were pervasive among German states. Consider a number of examples. According to its 1909 electoral law, the unicameral parliament in Sachsen Weimar consisted of 48 representatives. 15 of these representatives were elected by landowners and other high income individuals, while the remaining 23 deputies were elected by the remaining part of the population (Regierungsblatt für das Grossherzogtum Sachsen Weimar Eisenach 1909: 53-68). In neighboring Sachsen-Altenburg, which also had a unicameral parliament, 9 of the 30 deputies were elected by the higher-income persons (Gesetzsammlung für das Herzogtum Sachsen Altenburg 1870: 85-93). According to the provisions of the electoral law in Reuss Jüngere Linie, one of the deputies was the owner of a feudal domain of the principalities (Gesetzsammlung für die Fürstlich Reussischen Lande Jüngerer Linie 1913: 14- 23).

A second type of electoral provisions created sizeable inequalities in representation by

attaching different weights for the votes of higher income voters in the selection of deputies as compared to low income voters. Consider this ways in which Prussia's censitary electoral system weighted the votes of higher and lower income voters. The Prussian electoral system divided voters in each commune into three categories or classes' depending on the total amount of taxes. Voters were assigned to the three classes as follows. The first class included voters with the lowest levels of tax payments) that had collectively made one third of the total amount of taxes collected in the district. The remaining voters were again ordered by their tax payments and assigned to the second and third class, respectively. The cutoff between these two higher classes was set in such a way to ensure that the cumulative tax payments by all voters in the first and second class totaled two thirds of the tax revenue collected in the locality. The high income voters whose cumulative tax payments totaled the remaining third of revenues were assigned to the third class. Each class of voters elected the same numbers of electors and the latter were, then, electing the politician in the district. This electoral rule generated significant inequalities in representation across voters with different types of outcomes. Historians of the period have noted that the in several of Prussia's constituencies, the third class of voters was made up by only one voter (Kühne, 1994)

A third type of electoral rules that restricted suffrage right excluded voters whose total tax payment was below a certain threshold from voting. Such tax barriers were enshrined in the electoral laws of many German principalities. Thus, for example, according to Sachsen Altenburg's electoral laws, only voters that paid a direct tax such as the landtax (Grundsteuer), business tax (Gewerbesteuer) or the capital tax (Kapitalrentensteuer) had the right to vote (Gesetzsammlung für das Herzogtum Sachsen Altenburg 1870: 72). According to article 5 of Bavaria's 1881 electoral law, only citizens that had paid direct taxes for at least six months had the right to vote (Gesetz und Verordnungsblatt für das Königreich Bayern 1881: 19). Saxony's 1861 electoral laws excluded from voting those citizens that had delayed the payments of their taxes by one year (Gesetz und Verordnungsblatt für das Kaiserreich Sachsen 1861: 45).

The small oligarchic groups that designed these electoral institutions chose combinations among these three different institutional mechanisms to restrict suffrage and establish inequalities in representation. We expect that *any* type or combination of these electoral provisions is enough to offer the elite room for political gain in the adoption of the income tax, as any of them does establish a barrier to political participation based on taxation. To test this claim, we have created the variable, *N Barriers*, which sums these institutions for each principality at any point of time. The minimum value for this variable is zero, and the maximum is three. This variable does not only vary across units, but also within principalities. We then estimate the probability of adopting the income tax having one, two or three of these institutions vis-à-vis none of them. Figure 1 plots the distribution of this variable. Additionally, we have created a dummy variable, *Any Barrier*, indicating whether a given principality at any given time had any of the three electoral provisions.

Figure 1 here.

## 2.3 Elite divisions

The partisan landscape differed significantly across different German regions. One crucial variables of political variation is the political fragmentation among right wing parties. A number of factors account for the regional variation in electoral competition among parties on the right. The first is the level of political strength of the Zentrum, the Catholic Party which beginning with the *Kulturkampf* of the 1870s mobilized the catholic sub-population. A second variable that affects the political heterogeneity among right wing parties is the relative strength and fragmentation among Germany's various liberal parties. We hypothesize that the economic and political heterogeneity among parties on the right hinders the ability of the incumbent elites to take advantage of the political opportunities created by electoral rules that limit suffrage and agree on a policy proposal that adopts the income tax. As such, we expect that higher levels of electoral fragmentation among right wing parties are likely to delay the probability of adoption of the income tax.

A final political variable that differs significantly across German principalities is the political strength of the Social Democratic Party. While data on the political strength of the Social Democratic Party in subnational elections is currently unavailable, we proxy this variable with the average political strength of Social Democracy in the Reichstag election. The inclusion of this variable allows us to test predictions coming from the literature on the determinants of redistribution which hypothesizes that the partisan strength of Social Democracy, the major opposition party, intensifies incentives of elites to invest in this new technology of taxation. All things equal, this literature implies that the strength of Social Democracy should be positively associated with the adoption of an income tax.

**Additional Controls.** We assess the consequences of four additional variables for the probability of adoption of income inequality. Two of them approximate the economic characteristics of the principality: the percentage of agricultural labor, and the log of total population (Inter-university Consortium for Political and Social Research, 1984), a proxy for income levels. Both variables should control for the effect of economic development on the probability of adopting the income tax. We consider one further measure to capture the demand for (threat of) redistribution (Acemoglu and Robinson, 2000): the existing poor relief per capita. This variable adds to the Social Democrat Vote share, which also captures how responsive elites are to a growing demand for redistribution from the rich to the poor. Finally, we also control for the share of Catholics for each district (Inter-university Consortium for Political and Social Research, 1984). This source of social (ethnic) division might prevent higher taxation if it transforms taxation into a zero-sum game (Besley and Persson, 2011).

### 3 Within-Country Design: Analysis

The structure of the data is Binary Time Series Cross Sectional (BTSCS). Beck, Katz and Tucker have proved the virtual equivalence between BTSCS and event history data Beck,

Katz and Tucker 1998. As such, the adoption of income tax can be fitted with a standard logistic model. We only need to add a time trend to account for the conditional hazard rate. For that purpose, we follow Carter and Signorino 2010 and fit a cubic polynomial approximation to account for duration dependence. The exact model specification is as follows:<sup>1</sup>

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

Expression (1) models the adoption of income tax  $y$  by principality  $i$  at time  $t$  (provided it has not been adopted yet) as a function of time-variant covariates  $x_{it}$  and a smooth function of the number of years a principality has been at risk of adopting the income tax:  $H(t - t_i) = t + t^2 + t^3$ , where  $t$  denotes the time elapsed since the observation enters the sample. By expression (1), once a given unit adopts the income tax, it drops the sample. Altogether, the within-country sample is made of 646 principality-year observations.

Table 2 here

The results reported in Table 2 present four different specifications to account for the political and economic hypotheses of the authoritarian advantage in the income tax adoption. Model 1 reports the benchmark specification, where we test for the effect of the electoral fragmentation of the right and landholding inequality, our proxy for the landed elite bargaining power. Consistent with our economic hypothesis we find a positive relationship between landholding inequality and the probability of adoption of the income tax. Second, we also find that an increase in political fragmentation among right wing parties is likely to delay the probability of adoption of the new income tax. In regions with high levels of right wing fragmentation, the higher number of salient cleavages among politicians on the right slows down the probability of adoption of income taxes. Our interpretation of this negative relationship is as follows: the number of politicized political cleavages increases the uncertainty of parties of the right about their economic and political advantages resulting from the adoption of the

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<sup>1</sup>We borrow notation from Aidt and Jensen 2009.

new tax.

Model 1 already included a control for the demand or threat of redistribution, the federal share of social democrat vote (positive but not significant). Model 2 includes one further control, the per capita poor relief expending, which is also positive and reaches conventional levels of statistical significance. Despite not being robust to different specifications, both coefficient suggest that the threat of revolution might have played a role in the decision to adopt the income tax, but only secondary.

Model 3 includes the first measure of tax-based electoral provisions. We estimate the likelihood of adopting the income tax when a principality has one, two or three tax barriers vs. none of them. The coefficients for the three categories are all positive and statistically significant. They are also close in their magnitude, suggesting that one of these institutions already does the job, while having more than one does not harm either. This result is consistent with our expectation: elites might levy new taxes on themselves as long as they gain politically, which in turn helps them to preserve their economic advantage.

Model 4 presents a different version of the political gain hypothesis. This time, we replace the number of tax-based electoral provisions for a simple dummy variable indicating whether in a given year, the principality had at least one of the three electoral provisions in place. Once again, the coefficient for this variable is positive and statistically significant.

## 4 Prussian Roll Call

The previous section has presented empirical evidence supporting both the economic and political logic of income tax adoption in non-democratic settings. This section submits our explanation to an additional empirical test, by examining the economic and political determinants of support for the adoption of an income tax by the Prussian Lower House of in 1891 (Preussen Haus der Abgeordneten and Preussen Landtag, 1891). The Prussian income tax, known also as Miquel's law, represented an important turning point in the

comparative political history of the fiscal state (Hallerberg, 1996; Thier, 1999; Mathiak, 2011). The Prussian income tax pioneered a new fiscal technology of revenue extraction that required all tax-payers to cumulate all separate sources of revenue in one schedule (Popitz, 1926). This latter method of taxation, which was referred to as the “synthetic” income tax was 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 income in different schedules (Daunton, 2001).

The adoption of the new income tax in Prussia was met after a long political process, characterized by intense political disagreement both in the Prussian Staatsministerium —where the bill of the new income tax was drafted — and in the Prussian Chamber of Deputies. The theoretical analysis developed above allows us to identify the issue dimensions that were salient and the political cleavages over these dimensions. The first set of issues that created significant political controversy concerned the incidence of the new tax across different sectors but also the design of the institutions that monitored and assessed the new tax burden. The second set of issues that were politically divisive concerned the relationship between the new income tax and Prussia’s censitary electoral law. Given that Prussia’s censitary electoral system established a very tight linkage between the payment of taxes and the political rights of individuals, considerable political disagreement existed between politicians that were concerned about the future loss in political power as a result of the adoption of the new tax and those that wanted to use the new tax as a tool that could remove the inequities of the existing electoral system. We will discuss briefly the political cleavages over these two issues on the floor of Prussia’s Abgeordnetenhaus.

The income tax bill that was under political deliberation in the Reichstag subjected all Prussian citizens to the duty to pay the new income tax (paragraph one). Some exemptions applied, such as individuals who were living in another German state (paragraph 1a), individuals who had been living abroad for over two years (1c) and also members of the royal family and other German nobles. The new law subjected, however, not just individuals,

but also corporations to the payment of taxes (Kennan, 1910, p.89). A variety of corporations were required to pay income. This included joint stock companies, mining companies registered societies or associations whose commercial activity extends 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 (*ibid.*).

The proposal to tax corporations with the new income tax was originated in the Prussian *Staatsministerium* (Mathiak, 2011, p.116). In a decisive meeting that took place on October 17, 1890, Herrfurth a conservative politician and Prussia's finance minister at the time pushed this issue in the bill against considerable opposition. The proposal to tax corporations made it, in fact, on the bill with a very narrow margin of only two votes. Miquel himself opposed the idea, and demanded the exemption of juridical persons from the incidence of taxation, raising concerns about the double taxation of capital (Mathiak, 2011, p.115). On the floor of the Prussian Chamber of Deputies, this proposal was the object of significant political controversy. Parties representing the interests of large landowners, such as Conservatives and Free Conservatives supported the extension of the scope of taxation to corporations. Rauchhaupt, a Free Conservative politician argued that the taxation of industrial capital was an improvement over earlier tax bills that had been considered in previous decades. Other conservatives (such as Zedlitz Neukirch) concurred, 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 concurred with sided with conservatives arguing in favor of the taxation of corporations and rebutting arguments about the double taxation of capital income (position of Huene, Zentrum).

Free Liberals, a party that represented the interests of Germany's modern industrial sectors were the strongest political opponents of the provision to include corporations as part of the income tax. Rickert, the leader of the Free Liberal faction in the Prussian chamber of deputies attacked the new income tax, arguing that the latter was a policy that helped flat land and East Prussia to the detriment of the West. Within the East, Rickert

argued, the law privileged estates (*Gustsbezirke*) to the detriment of localities with peasant owned-land. The incidence of the new tax begins where agrarian interests, ended. For Rickert the most visible sign of this bias in favor of the agrarian interests was the double taxation of the income of capital owners. Other parties representing the owners of mobile assets, such as National Liberals, were more divided over this issues. Some National Liberal deputies such as Ennecessus objected to the inclusion of taxation of companies. Other National Liberals were more supportive of the legislation. The explanation of this support, we will show below, can be attributed to the political advantages created by the new law for high income voters. Thus, while National Liberals were losing economically from the new legislation, they were likely to gain politically.

A second question that created sustained political controversy in the Prussian Chamber of Deputies concerned the design of the new tax bureaucracy that was likely to assess the new taxes. The new income tax which was premised on the self-declaration of income required, at the same time, a skilled bureaucracy that was likely to minimize evasion. Prussian politicians considered two possible models about the design of the new tax bureaucracy. One such model was given by the example of Saxony, a state that had adopted the income tax in 1869. In Saxony, independent bureaucrats were tax collectors. The alternative proposal that had been advanced by officials of the Prussian Staatsministerium was to leave responsibilities about the verification of income in the hands of the *Landräte*. The latter were closely affiliated with conservatives and occupied a unique position in Prussia's administration, such as 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 recommended to appoint "bureaucrats that were trained in an ad-hoc fashion" as presidents of the commissions verifying income that were to be established in every Prussian commune (Mathiak, 2011, p.116). In the Prussian second house, both National Liberal Deputies and Deputies of the Zentrum supported the creation of impartial tax administrators responsible

with the collection of taxes.<sup>2</sup> This position was also endorsed by political economy experts, such as Gusta Cohn, a prominent expert on taxation. Invoking Saxony's example, Cohn recommended to rely on Saxony's model to design the new institutions of tax collection (Cohn, 1891, p.20-52).

Conservative politicians disagreed. The adamant in their recommendation to appoint the Landrat as the president of the commission that verified incomes. In the initial deliberations of this issue in the Staatsministerium, Herfurth insisted on maintaining this crucial administrative position in the hands of the Landräte. As Herrfurth argued, the political influence and "reputation" of the Landräte would be diminished if the latter did not chair this commission. This argument triumphed in the deliberations of the ministry. In the second chamber, Free conservatives such as Rauchhaupt also argued in support of maintaining the crucial position of the Landrat. People from outside the community, Rauchhaupt argued, "did not have the ability to assess the income of individuals". The appointment of the Landräte as the presidents of the commission verifying income was a significant political decision that entrenched the political power of conservatives in the new tax administrations.

A distinct political issue that was the object of significant controversy in the Prussian parliament concerned the relationship between the new tax and voting rights. This was a particularly salient issue in Prussia, as the payment of direct taxes (and their amount) stood 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 reaffirmed 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" (Thier, 1999, p.886).

The question facing German lawmakers was whether taxation should be designed in such a way as to offset the inequalities in representation that existed under the censitary electoral system or whether the new tax should in fact amplify and exacerbate these inequalities in

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<sup>2</sup>National Liberals who supported this policy in the deliberations were Von Eynern and Ennecerus, Huene on behalf of Zentrum

representation. The strongest predictor of political divide on this question was the wealth of the politicians —or the average concentration of wealthy politicians in each party. Conservatives, Free conservatives and National Liberals all represented voters that voted in the first class of Prussia’s electoral system. By the mid-1880’s, over 10 percent of Prussia’s first district (*Urwahlbezirke*) consisted of only one single voter and 7.8 percent of these districts had only two voters (Thier, 1999, p.887). National Liberals and Conservatives shared 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. This political motivation accounts for the paradoxical recommendation made by Prussian politicians to impose a higher marginal tax rate on top income earners: the latter were willing to tax themselves at a higher rate in exchange for higher political rights.

By contrast, parties representing voters who had the opportunity to move into classes of the electoral system —such as the Zentrum— made recommendations for changes to the tax bill that increased the electoral rights of these groups. One such proposal that was discussed both in the parliamentary commission and on the floor of the Prussian chamber of deputies recommended to assign a number of fictive’ tax payment to voters that could allow the latter to move into different tax categories (paragraphs 77 and 78 of the law). According to the proposal made by the deputies of the Zentrum, the voting rights of each voters would assign each payer additional 30 marks as tax payments. This change was expected to lead in the increase of voters with medium income in the higher electoral brackets and a reduction in the political power of higher income voters. Such proposals were rejected, however, by Conservative and National Liberals as an “unjustifiable injustice”.

All in all, we expect conservative elites to support unanimously the income tax bill, backed by the wealthiest liberals, represented by National Liberals, who lose economically but gained politically from the strong connection between the new bill and the existing electoral system. The medium-class, represented by the Free Liberals, would lose in both dimensions. Thus, we expect them to vote against the income tax bill. To test these

predictions, the empirical analysis in Section 4 includes an indicator variable for the political party to which the district representative is affiliated. We have coded the Conservatives, National Liberals, Free Conservatives, Free Liberals, minorities, and Zentrum, the omitted category.

**Control variables.** To fully characterize the district representatives’ roll call, the empirical models include that a variables that measure both economic and political conditions at the district level as well as measures for the partisanship of the politicians. Unless otherwise noted, all economic control variables used in the analysis are aggregated at the Prussian electoral district, using the correspondence table between localities and districts proposed in (Kühne, 1994). To control for the level of economic development of a district, we include a measure of the percentage of the population employed in Industry and Services (Reibel, 2007). We use two additional variables to measure the linguistic and religious heterogeneity of a district. A first variable —Catholics — measures the catholic population of a district. A second variable measures the linguistic fragmentation (Linguistic Fractionalization). To compute this measure, we take advantage of information collected by the Prussian statistical agency in 1900. At the time, Prussian statistical officials collected information on the mother tongue spoken in each locality (*Gemeinde*) within Prussia (Königliches Preussisches Statistisches Landesamt, 1900). The list of language communities within Prussia is rather large and includes twenty possible mother “tongues”. In addition to Polish, Danish and Lithuanian which were the largest non-German speaking minorities, other language communities in Prussia include speakers of west-slavic dialects, such as *Masurian* and *Kasubian*. Using this information, we compute a measure of linguistic fractionalization as 1 minus the Herfindahl index of ethnolinguistic group shares. We find significant variation in linguistic heterogeneity across Prussian districts. The measure of linguistic fragmentation takes values between a minimum of 0.01 and a maximum of 0.68 with a mean of 0.12.

We measure the inequality of a district using a Gini measure of the inequality the distribution of agricultural employment across farms of different sizes. The source for this variable is the Prussian Agricultural Census of 1895 (Königliches Preussisches Statistisches Landesamt, 1985). This census collects disaggregated information both on the number of different farms and of the distribution of employment across farms of different sizes. Based on the data reported in this census, the number of farms are distributed across bins of the following sizes: less than 0.5 hectares, 0.5-2 hectares, 2-5 hectares, 5-20 hectares, 20-100 hectares, above 200 hectares. As suggested in (Ramcharan, 2010), we use the mid-point of each bin to construct the Gini coefficient using the INEQDECO module. The Gini of employment concentration took an average value of .76 with a standard deviation of .10.

We seek to assess whether the number of poor voters in a district affects political support for the adoption of the income tax. To this end, we use available historical information on the number of recipients of poor relief collected by German statistical authorities (Kaiserliches Statistisches, 1887). This historical information is available at the level of each locality, which we then aggregate to the level of the Prussian electoral district.

Finally, all models control for the district magnitude. Since some of the Prussian electoral districts were multimember districts, we compute a measure of political fragmentation of the district. The variable *Divided* takes the value 1 if the districts is represented by politicians from different parties and 0 otherwise.

## 4.1 Prussia: The Analysis

We will now test the main theoretical propositions advanced in this paper, by examining the economic and political determinants of political support for the adoption of the income tax. To this end, we examine the decisive political vote over the entire income tax bill in 1891 Prussia. Following Ziblatt (2008), we code the dependent variable as follows: for opponents of the new income tax, it equals 0; for politicians that abstain, it equals 1 (except if they are excused); and for politicians supporting the adoption of the income tax, it equals 2. We

estimate the model using an ordinal probit.

Table 3 here.

Table 3 presents the results of four different specifications. Model 1 is a baseline model that examines the relationship some economic covariates at the district, political partisanship and support for the adoption of the income tax. We find that politicians representing districts with lower levels of economic development were more likely to support the adoption of the income tax. The relationship between the percentage of the population in a district employed in agriculture and political support for the adoption of the income tax is positive. Secondly, consistent with the bargaining power hypothesis, we also find that politicians from districts characterized by higher levels of landholding inequality were more likely to support the adoption of the income tax. By contrast, the percentage of poor individuals in a district stands in no relationship with the level of political support for the adoption of the new income tax. Poorer strata do not seem to constitute a threat in Prussia. The results for the partisan variables lend additional support for our hypotheses. Conservatives, Free Conservatives and National Liberal politicians were more likely to support the adoption of the income tax. By contrast, Free Liberals politicians opposed the new tax.

The specifications in model 2 exploit the consequences of an exogenous shock, which represents the Napoleonic invasion on different regions of Prussia on the political support for the adoption of the income tax. Our hypotheses build on and expand the recent work by Acemoglu, Cantoni, Johnson and Robinson (2011), but expand the implications of the latter for the evolution of fiscal capacity in Germany. Acemoglu et al. (2011) have argued that the Napoleonic invasion strengthened was associated with a number of far-reaching economic reforms that removed the legacy of feudalism and strengthened the power of the industrial sector in Germany. This implies that politicians in regions that experienced a “Napoleonic” treatment, the strength of landowning elites was significantly lower. As such, we predict to find a negative relationship between Napoleonic treatment political support for the adoption of an income tax. To test this hypothesis, we code variation in the Napoleonic

treatment across different administrative regions in Prussia, by using the same coding of Acemoglu et al. (2011), which we supplement with additional historical sources. Appendix lists variation in the Napoleonic treatment across Prussian Regierungsbezirke.

Model 2 presents the results that include this variable to our baseline model. The Napoleonic treatment has the sign that is consistent with the predictions of our hypothesis. However, the variable fails to reach statistical significance at conventional levels. The inclusion of this variable does not modify in significant ways the results reported in model 1.<sup>3</sup>

Models 3 and 4 examine the robustness of these findings to the inclusion of additional variables. In models 4 and 5, we examine the implications of Besley and Persson’s (2011) hypothesis, which postulated that an increase in ethnic heterogeneity is likely to slow down the development of fiscal capacity. We test this hypothesis using two different measures for ethnic fragmentation. In model 3, we include a control for the share of Catholics in the district. The correlation between the variable and the probability of support for the adoption of income tax is negative—and thus, consistent with the theoretical predictions—but the variable fails to reach statistical significance at conventional levels. In model 4, we measure the log of ethnic heterogeneity with the measure of linguistic fragmentation of the district. This variable is positively correlated with political support for the adoption of the income tax, but is not statistically significant. More importantly, it does not affect the estimates of the benchmark model.

Table 4 here.

We provide two additional tests in Table 4. In Model 1 we examine the bargaining power of the landed elite hypothesis, which we initially approximated by the level of land inequality. We claimed that the old elite’s capacity to pass legislation in Parliament is correlated with their economic status, while the latter is tightly connected to land. As a corollary, we expect

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<sup>3</sup>An indicator variable for those districts that received the treatment does not reach standard significance levels either.

that the capacity to mobilize political resources (e.g. bribing, intimidating) to increase when land productivity increases (i.e. in good times). To test this possibility, we interact landhold inequality with recent land productivity. The latter variable is drawn from Grant (2005). It reflects for each district the first difference of land production from 1880 to 1884, the closest available data point preceding the income tax bill of 1891. The coefficient of the interaction suggests that, MPs representing districts where high land inequality has been recently favored by high levels of productivity have a greater likelihood of voting in favor of the law.

Figure 2 here.

Figure 2 plots the linear prediction of the marginal effect of this interaction. When productivity is poor, MPs representing districts with high inequality vote against the new tax, whereas high productivity increases their likelihood of voting in favor of the bill. This result is consistent with the MPs' bargaining power being a function of the economic advantage of those he represents.

The discussion above suggests that the National Liberals were cross-pressured. They gained politically from the new bill, but lose economically. We expect this cross-pressure to be most evident for National Liberal representatives who gained a seat in Parliament by a narrow margin. We are interested, but also agnostic, about what strategy they would pursue when their margin of victory in this circumstances. We might expect them to take advantage of this situation to favor the bill, so that they can be included in the upper tier of the chamber. But they might prefer to behave *conservatively*, and oppose the bill if they fear a harsh electoral punishment if things do not work as planned. We test for both possibilities by interacting the indicator variable for National Liberal MP with *Closeness*, a variable that approaches 100 when a race is even and 0 when it is uncontested. We code this variable based on the historical information reported in Kühne (1994), who reports information on the vote-share received by each politician elected to the Prussian Lower House and their

runner up.<sup>4</sup>

The interaction, reported in Model 2, suggests that National Liberals with large margins prefer to amplify their political advantage, whereas National Liberals with small margins act conservatively and vote against the bill. In other words, cross-pressured National Liberals seemed to be risk-averse. They aligned with the old regime forces when they were politically safe —and thus vote in favor of the income tax—, and with the liberal/reformist coalition when their political position was weak.

To sum up, this section yields three interesting results. First, we find that politicians representing rural districts were more likely to support the adoption of the income tax. Secondly, we find strong and robust partisan effects. Politicians representing conservative economic interests were the strongest supporters for the adoption of the income tax. By contrast, politicians affiliated with the rising manufacturing sector —Free Liberals —were opposed to the new tax. Finally, while we find that politicians from districts characterized by higher levels of inequality were more likely to support the adoption of the new income tax. All in all, the findings lend support to the sectoral explanation for the adoption of the income tax presented in section 1.

## 5 Conclusion

This paper seeks to contribute to the growing literature examining the origin of extractive institutions, by pointing out unnoticed advantages of income taxation for the oligarchic elite that dominated Europe until the Great War. We claim that the income tax offers the old regime elites two mechanisms, one political, the other economic, to delay major reforms that would put an end to their privileges. The income tax, combined with pre-existing electoral provisions that associate tax payments with political rights, exacerbated inequality in political representation. Additionally, the income tax, by tapping into and collecting

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<sup>4</sup>Close is computed as the difference between 100 and the Margin of Victory. One finds wide variability in the political vulnerability of different Prussian politicians. The variable Margin takes values between 1 and 100, with an average of 60.1 and a standard deviation of 34.5.

previously undetected revenue, targeted industry-based income, mainly, thus rebalancing the incidence of taxation across sectors back in favor of land. Both unnoticed advantages of the income tax allow us to explain why non-democracies were the early adopters of this tax in Western Europe, and illustrate how landed elites used all institutional levers at their disposal to protect themselves against a rising industrial elite and expanding middle classes which resulted from the industrial revolution.

We have tested the political and economic hypotheses using concrete, fine-grained historical data that allows us to hold constant *by design* observed and unobserved cross-unit heterogeneity by minimizing differences across units. This approach allows us to focus exclusively on the domestic political economy of income taxation in autocracies, as it keeps constant other paths and substitutes to major fiscal innovations: war (Tilly, 1990; Scheve and Stasavage, 2010), as it was funded by the Reich only, and revenue tariffs (Baunsgaard and Keen, 2010), which was in hands of the Empire too.

The within-country research design confirms the *autocratic advantage* in income taxation, thus mirroring the cross-national results in Mares and Queralt (2013). German principalities endowed with undemocratic political institutions and characterized by uneven wealth distribution, were early adopters of what eventually became the highest tool of income redistribution: the income tax. To account for alternative mechanisms, we also control for the demand of redistribution (Acemoglu and Robinson, 2000), and ethnic and religious fractionalization (Besley and Persson, 2011). The results are robust to the consideration of these alternative paths and obstacles to major fiscal innovations.

The Prussian roll call analysis offered us the opportunity to investigate, at first-hand, the content of the Parliamentary discussions, the trade offs associated to the adoption of the income tax, and the tactics pursued by all players involved in this negotiation. We found a clear partisan divide, with conservative parties representing the old regime interest supporting the income tax bill, while liberal parties, representing the new middle classes, opposing to its adoption. Only the National Liberals, representing the wealthiest industrialist, deviated

from the liberal coalition, as they lost economically (due to cross-sectoral redistribution) but gained politically (due to the exacerbation of political inequality that would follow the bill). The partisan divide is robust to additional controls that account, one again, for the threat of revolt and ethnic division hypotheses. Also, consistent with our expectations, landholding inequality, our proxy for the landed elite's bargaining power, resulted a strong predictor of MPs' support of the income tax in Prussia.

The evidence presented in this analysis offers a fresh and novel interpretation of the origin of the modern fiscal state. It brings the focus back to the actual *politics* of tax policy, usually underscored in favor of external shocks (e.g. wars, financial crisis). It also provides counter-intuitive explanations for the adoption of a tax, the income tax, which is commonly associated to advanced welfare democracies. The evidence in this paper suggests otherwise: the income tax was not a democratic achievement (as one would expect from the Meltzer-Richard model), but yet another trick by the old regime elites to delay political and economic reforms and perpetuate in power. The next stage in this research agenda necessarily involves the analysis of the actual tax rates associated to the early income tax, and their connection to the distribution of political power between old and new elites.

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Figure 1: Frequency of Tax-based Electoral Provisions

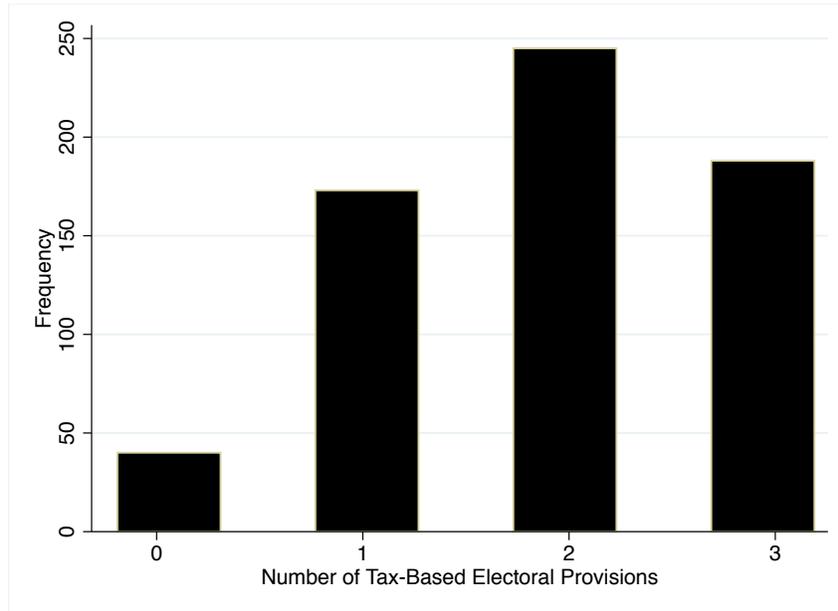


Figure 2: Linear Prediction of Favorable Roll Call Vote by level of Land Inequality and Land Productivity Growth (first-difference between 1884 and 1880.)

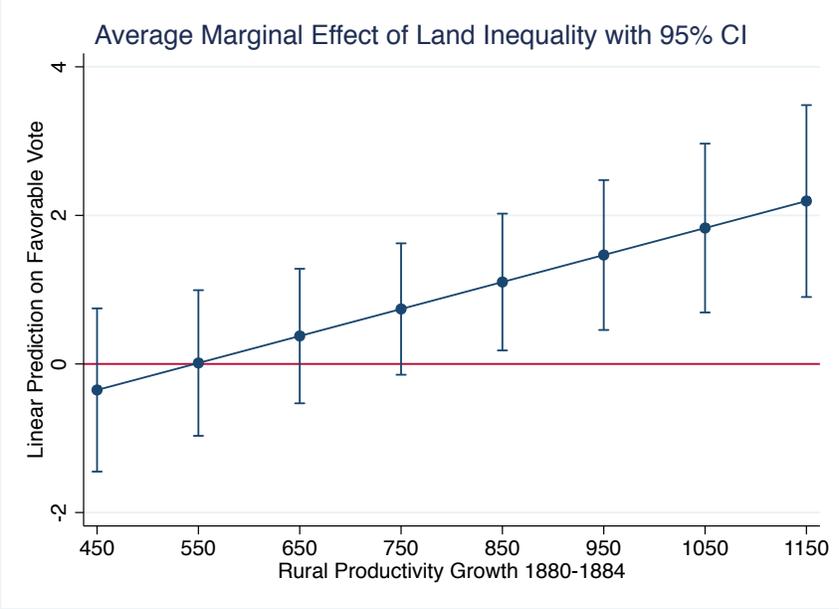


Table 1: Adoption Date of the Income Tax in German Principalities.

| Year | Principality              | Year | Principality             |
|------|---------------------------|------|--------------------------|
| 1871 | Hessen <sup>a</sup>       | 1903 | Wurttemberg <sup>b</sup> |
| 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 <sup>b</sup> | 1912 | Schwarzburg-Sonderhausen |
| 1902 | Schwarzburg-Rudolstadt    | 1912 | Lippe                    |

<sup>a</sup> Hessen adopted the tax before 1871 and it is not included in the analysis. <sup>b</sup> Württemberg and Elsass Lothringen adopted the electoral laws only after the income tax had been passed and are not included in the analysis. Mecklenburg-Strelitz and Mecklenburg-Schwerin are excluded from the analysis because they lacked an electoral institutions. Source: Popitz (1926), supplemented by publications of laws of the individual principalities. In total, the sample includes 20 out of the 25 German Principalities.

Table 2: Income Tax Adoption across German Principalities.

|                                  | (1)                   | (2)                   | (3)                   | (4)                   |
|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| ENP on the Right                 | -0.148**<br>(0.070)   | -0.152**<br>(0.066)   | -0.187*<br>(0.110)    | -0.134**<br>(0.063)   |
| Land Gini                        | 0.089**<br>(0.041)    | 0.081**<br>(0.040)    | 0.132***<br>(0.048)   | 0.101**<br>(0.042)    |
| SPD Vote Share                   | 1.362<br>(1.017)      | 1.082<br>(1.079)      | 1.186<br>(1.156)      | 1.160<br>(1.096)      |
| Catholics (%)                    | 0.016<br>(0.026)      | 0.007<br>(0.029)      | 0.083**<br>(0.033)    | 0.067*<br>(0.035)     |
| Agriculture (%)                  | -4.295<br>(3.506)     | -3.351<br>(4.009)     | -0.897<br>(6.884)     | -5.473<br>(4.013)     |
| ln(Population)                   | 0.266<br>(0.223)      | 0.221<br>(0.228)      | -0.019<br>(0.201)     | 0.023<br>(0.225)      |
| Poor Relief/Capita               |                       | 0.041*<br>(0.023)     | 0.054<br>(0.039)      | 0.030<br>(0.025)      |
| Tax-based electoral barriers = 1 |                       |                       | 4.144***<br>(1.299)   |                       |
| Tax-based electoral barriers = 2 |                       |                       | 5.577**<br>(2.755)    |                       |
| Tax-based electoral barriers = 3 |                       |                       | 4.740*<br>(2.545)     |                       |
| Any tax-based electoral barrier  |                       |                       |                       | 3.541***<br>(1.091)   |
| time                             | -0.030<br>(0.209)     | 0.018<br>(0.224)      | 0.019<br>(0.217)      | 0.008<br>(0.223)      |
| time2                            | -0.001<br>(0.011)     | -0.003<br>(0.012)     | -0.002<br>(0.013)     | -0.002<br>(0.012)     |
| time3                            | 0.000<br>(0.000)      | 0.000<br>(0.000)      | 0.000<br>(0.000)      | 0.000<br>(0.000)      |
| Constant                         | -13.168***<br>(3.635) | -14.095***<br>(4.281) | -21.468***<br>(7.600) | -16.525***<br>(3.241) |
| Observations                     | 646                   | 646                   | 646                   | 646                   |

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 3: 1891 Income Tax Roll Call in Prussia. Ordinal Probit.

|                                 | (1)                  | (2)                  | (3)                  | (4)                  |
|---------------------------------|----------------------|----------------------|----------------------|----------------------|
| Agriculture (%)                 | 0.064**<br>(0.031)   | 0.064**<br>(0.031)   | 0.067**<br>(0.032)   | 0.057*<br>(0.032)    |
| Land Gini                       | 2.273*<br>(1.301)    | 2.325*<br>(1.312)    | 2.337*<br>(1.311)    | 1.957<br>(1.328)     |
| Conservative MP                 | 1.389***<br>(0.421)  | 1.427***<br>(0.429)  | 1.259**<br>(0.518)   | 1.567***<br>(0.444)  |
| National Liberal MP             | 0.747**<br>(0.312)   | 0.761**<br>(0.31)    | 0.620<br>(0.402)     | 0.853***<br>(0.329)  |
| Free Liberal MP                 | -2.796***<br>(0.819) | -2.761***<br>(0.851) | -2.898***<br>(0.752) | -2.716***<br>(0.886) |
| Free Conservative MP            | 0.451*<br>(0.245)    | 0.475*<br>(0.255)    | 0.325<br>(0.378)     | 0.545**<br>(0.269)   |
| Minority MP                     | -0.602*<br>(0.349)   | -0.571<br>(0.378)    | -0.649*<br>(0.391)   | -0.662*<br>(0.380)   |
| ln(Population)                  | -0.191<br>(0.18)     | -0.205<br>(0.183)    | -0.182<br>(0.206)    | -0.266<br>(0.173)    |
| Population in Poor relief (%)   | -0.034<br>(0.096)    | -0.041<br>(0.095)    | -0.046<br>(0.099)    | -0.046<br>(0.092)    |
| Divided district                | 0.847**<br>(0.367)   | 0.872**<br>(0.364)   | 0.929***<br>(0.320)  | 0.79**<br>(0.363)    |
| Napoleon Treatment              |                      | 0.006<br>(0.013)     | 0.006<br>(0.014)     | 0.014<br>(0.016)     |
| Catholic (%)                    |                      |                      | -0.002<br>(0.005)    |                      |
| Log(Language Fractionalization) |                      |                      |                      | 0.109<br>(0.121)     |
| Observations                    | 316                  | 316                  | 316                  | 316                  |

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4: Prussian 1891 Income Tax Roll Call: Additional Tests

|  | (1)                 | (2)                |
|--|---------------------|--------------------|
| Land Gini                                | -6.127<br>(4.216)   | 2.191<br>(1.38)    |
| Rural Productivity 1884-1880             | -0.009**<br>(0.004) |                    |
| Land Gini × Rural Productivity 1884-1880 | 0.012**<br>(0.006)  |                    |
| National Liberal MP                      | 0.74**<br>0.307     | 3.334*<br>1.864    |
| Close Election                           |                     | 0.004<br>0.004     |
| National Liberal × Close Election        |                     | -0.04*<br>0.024    |
| Conservative MP                          | 1.426***<br>0.416   | 1.389***<br>0.434  |
| Free Liberal MP                          | -3.089***<br>0.643  | -2.963***<br>0.892 |
| Free Conservative MP                     | 0.351<br>0.236      | 0.422<br>0.28      |
| Minority MP                              | -0.513<br>0.368     | -0.593<br>0.435    |
| Divided District                         | 1.02***<br>0.294    | 0.855**<br>0.401   |
| Agriculture (%)                          | 0.073**<br>(0.031)  | 0.068*<br>(0.035)  |
| ln(Population)                           | -0.178<br>0.2       | -0.254<br>0.187    |
| Population in Poor relief (%)            | 0.016<br>0.112      | 0.005<br>0.101     |
| Observations                             | 314                 | 301                |

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table Appendix-1: Publications used to collect information on electoral laws across all states of the German Empire during the period 1870 to 1912.

| STATE                     | PUBLICATION   | YEARS OF ELECTORAL REFORM    |
|---------------------------|---|------------------------------|
| Anhalt                    | Gesetzsammlung für das Herzogtum Anhalt                                   | 1859, 1872, 1913             |
| Baden                     | Gesetz und Verordnungsblatt für das Grossherzogtum Baden                  | 1896, 1905                   |
| Bayern                    | Gesetz und Verordnungsblatt für das Königreich Bayern                     | 1848, 1881, 1906, 1910       |
| Braunschweig              | Gesetz betreffend die Zusammensetzung der Landesversammlung               | 1851, 1899                   |
| Bremen                    | Gesetzblatt der freien Hansestadt Bremen                                  | 1875, 1894, 1898, 1912       |
| Hamburg                   | Gesetzsammlung der freien und Hansestadt Hamburg                          | 1860, 1879, 1913             |
| Hessen                    | Grossherzoglich Hessisches Regierungsblatt                                | 1872, 1911                   |
| Lippe                     | Gesetzsammlung für das Fürstentum Lippe                                   | 1876, 1912                   |
| Lübeck                    | Sammlung der Lübeckschen Gesetze und Verordnungen                         | 1875, 1878, 1905             |
| Oldenburg                 | Gesetzblatt für das Herzogtum Oldenburg                                   | 1868, 1909                   |
| Preussen                  | Gesetzsammlung für die Königlich Preussischen Staaten                     | 1854, 1893                   |
| Reuss Ältere Linie        | Gesetzsammlung für das Fürstentum Reuss ältere Linie                      | 1867, 1913                   |
| Reuss Jüngere Linie       | Gesetzsammlung für die Fürstlich Reussischen Lande Jüngerer Linie         | 1871, 1913                   |
| Sachsen                   | Gesetz und Verordnungsblatt für das Königreich Sachsen                    | 1868, 1896, 1909             |
| Sachsen-Altenburg         | Gesetzsammlung für das Herzogtum Sachsen-Altenburg                        | 1870, 1873, 1898, 1904, 1909 |
| Sachsen-Coburg und Gotha  | Gesetzsammlung für das Herzogtum Coburg                                   | 1904                         |
| Sachsen-Meiningen         | Sammlung der landesherrlichen Verordnungen im Herzogtum Sachsen-Meiningen | 1848, 1852, 1873             |
| Sachsen-Weimar-Eisenach   | Regierungsblatt für das Grossherzogtum Sachsen-Weimar-Eisenach            | 1852, 1884, 1896, 1906       |
| Schaumburg-Lippe          | Schaumburg Lippsche Landesverordnungen                                    | 1868, 1906                   |
| Schwarzburg-Rudolstadt    | Gesetzsammlung für das Fürstentum Schwarzburg-Rudolstadt                  | 1870                         |
| Schwarzburg-Sondershausen | Gesetzsammlung für das Fürstentum Schwarzburg-Sondershausen               | 1856, 1912                   |
| Waldeck- und Pyrmont      | Fürstlich Waldeckische Regierungsblätter                                  | 1852, 1856, 1879             |
| Württemberg               | Regierungsblatt für das Königreich Württemberg                            | 1874, 1906                   |

Table Appendix-2: Years of French Occupation in Prussian Administrative Districts.

| District           | N Years | Discticts   | N Years |
|--------------------|---------|-------------|---------|
| Berlin             | 0       | Frankfurt   | 6       |
| Brandenburg        | 0       | Kassel      | 6       |
| Breslau            | 0       | Magdeburg   | 6       |
| Bromberg           | 0       | Merseburg   | 6       |
| Danzig             | 0       | Minden      | 6       |
| Gumbinnen          | 0       | Munster     | 6       |
| Konigsberg         | 0       | Nordhausen  | 6       |
| Koslin             | 0       | Osnabruck 1 | 6       |
| Liegnitz           | 0       | Osnabruck 2 | 6       |
| Marienwerder       | 0       | Osnabruck 3 | 6       |
| Oppeln             | 0       | Osnabruck 4 | 6       |
| Pommern            | 0       | Wiesbaden   | 6       |
| Posen              | 0       | Aachen      | 19      |
| Schleswig Holstein | 0       | Aurich      | 19      |
| Sigmaringen        | 0       | Dusseldorf  | 19      |
| Hannover           | 3       | Koblenz     | 19      |
| Hildesheim         | 3       | Koln        | 19      |
| Stade              | 3       | Luneburg    | 19      |
| Arnsberg           | 6       | Trier       | 19      |

Data source: Acemoglu et al. (2011) augmented.