

Fiscal Innovation in Nondemocratic Regimes: Elite Support for the Prussian Income Taxes of the 1890s

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Abstract

The income tax is a central pillar of the modern fiscal state because of its revenue-raising capacity and administrative sophistication. Existing accounts point to interstate war and class conflict as key drivers of modern fiscal breakthroughs. We evaluate a third complementary explanation for the origins of fiscal capacity that highlights the importance of intralite competition for political and economic power in times of rapid industrialization. Modern forms of taxation generated an industrial–agricultural divide over the distribution of tax burden across sectors. Opportunities to overcome the sectoral divide existed in the presence of electoral institutions that used tax-based malapportionment, namely the connection of tax payments and voting rights. Elites’ anticipation of electoral gains under such electoral institutions allowed the formation of political consensus for fiscal innovation. Our findings, which draw from district-level data and parliamentary debates in 1871–1913 Prussia, suggest that the adoption of a highly-sophisticated income tax in 1891 shifted the tax burden from land to industry and diluted the political leverage of the nonelite. The findings advance understanding of the politics of taxation in nondemocratic contexts.

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1 Introduction

The income tax represents a milestone in fiscal capacity building. In contrast to pre-existing instruments of taxation that levied revenues on visible assets, the income tax assesses an abstract category—*income*—and it does so on a highly atomized tax base. The implementation of this tax requires significant institutional transformation, involving legal and bureaucratic improvements in assessment and auditing technologies (Grossfeld and Bryce, 1983). In light of its revenue-generating power and administrative sophistication, the income tax represents a decisive turning point in the development of the modern fiscal state (Besley and Persson, 2011; Seligman, 1911). To reflect this administrative sophistication, reformers contemplating the adoption of an income tax in the nineteenth century referred to the new tax as the “queen of taxation” (Popitz, 1926).

Aidt and Jensen (2009) and Mares and Queralt (2015) show that the political conditions leading to early adoption of the income tax in the Western World (Europe, Japan, and British offshoots) do not necessarily adjust to the standard view of the income tax as a progressive achievement by the labor movement following democratic reform (Peters, 1991). In fact, many Western Economies adopted the income tax under conditions of limited franchise or without any electoral competition. Britain, the earliest adopter of a permanent income tax, did so in 1842 at a time when suffrage was restricted to only 13% of the population. The Habsburg Empire followed suit and adopted an income tax in 1849, at a time when elections were not yet held. The examination of the domestic political coalitions leading to the early adoption of the income tax presents a second puzzling regularity for the notion of income tax being a democratic triumph. The most significant political actors pushing for the adoption of the income tax were neither liberal nor socialist but conservative politicians (Mares and Queralt, 2015). In sum, the modern income tax was first introduced in countries characterized by restrictive suffrage, conservative political majorities, and entrenched landed elites.

Why would nondemocratic incumbent elites implement a tax on the wealthy? One set of explanations for fiscal breakthrough points to revenue needs derived from military expenditure

and interstate conflict (Besley and Persson, 2011; Hintze, 1906; Tilly, 1990). A second set of models conceive fiscal innovations as a potential (although noncredible) response to demands for redistribution from below in times of rapid inequality growth (Acemoglu and Robinson, 2000; Boix, 2003). A third set of hypotheses emphasize intersectoral competition in times of rapid industrialization as well as political gains for incumbent elites derived from tax-based electoral malapportionment, namely the use of tax payments for franchise qualification (Mares and Queralt, 2015).

Building on existing theoretical accounts, we investigate the adoption of the income tax in Prussia in 1891. For decades, this was the most sophisticated expression of income taxation among advanced economies: It introduced a synthetic system of income aggregation, general tax liability, and enhanced bureaucratic oversight, among others. It represented a fundamental breakthrough in modern taxation (Popitz, 1926). Counterintuitively, this tax was sponsored by a conservative coalition under a three-class franchise (Becker and Hornung, 2019) that systematically diluted political say of the working class.

Our analysis of the 1891 tax reform in Prussia combines statistical analysis and qualitative examination of parliamentary debates and official reports surrounding income tax adoption. Our findings are consistent with the three existing explanations of major fiscal change: First, debt service derived from the Franco-Prussian war required new fiscal resources. Second, the law reflected a response to the “social question”, as the *ability-to-pay* principle was incorporated in the calculation of the tax burden (Schremmer, 1989; Thier, 1999). Although this principle did not immediately translate into high progressive rates, it motivated the intention of law-makers to tap into all sources of income *and* wealth. Third, the tax burden imposed on the industrial sector accelerated within ten years of adoption of the new tax. By contrast, the burden on agriculture-intensive districts remained virtually unchanged. Most importantly, the tax-based three-class franchise system offered incumbent elites opportunities to fine-tune the tax code for their political advantage—hence prolonging, rather than tackling political and economic privilege.

The 1891 state-wide income tax was closely followed by a reorganization of municipal finance in 1893. Local councils were allowed to add a local surtax to the state income tax. In some urban localities, the surtax would end up doubling the effective tax rate (Soperer, 2004, p.186). The municipal financial reform of 1893 is relevant because it could have exacerbated (or corrected for) the economic and political effects of the state income tax. Hence, we assess sectoral redistribution and political inequalities in the three-tier franchise resulting from local surtaxes in the largest 100 municipalities in Prussia. The statistical analysis confirms the shift of the tax burden from the old to the new economy and sheds light on the tactics used by incumbent elites to weaken the political leverage of their political rivals. Together, our findings suggest that landed elites in Prussia utilized tax reform in order to consolidate their economic and political power in an rapidly changing society. Their disproportional influence in politics would only be curtailed by World War I.

Our empirical results are consistent with the intraelite competition hypotheses in Mares and Queralt (2015). These scholars tested the theory exploiting crossnational variation and the roll call vote of the 1842 income tax bill in Great Britain. Although illuminating, crossnational evidence is not ideal to empirically validate every aspect of their argument. Also, Britain is the only early adopter of the income tax that had no tax-based electoral malapportionment in place, leaving a key part of the electoral argument for income tax adoption untested. This article steps in at this point in the debate and attempts to illuminate the electoral and economic gains in a country with a marked malapportioned electoral system, Prussia.

Our findings resonate with Ansell and Samuels (2015) and Congleton (2010) for whom industrialization gave rise to new economic groups and liberal ideas that challenged the status quo of the *ancient régime*. Intraelite competition for power unfolded and new institutional equilibria emerged with varying degrees of liberal influence depending on preexisting institutions. The tax reform in Prussia suggests that conservative elites were able to counterbalance the liberal impulse by strategically exploiting the three-tier franchise to their advantage.

In recent years, Beramendi et al. (2019) and Llavador and Oxoby (2005) have also demon-

strated that intersectoral competition was a key driver of fiscal and political reform. In nineteenth century Europe, they show, landed (conservative) and industrial (liberal) interest routinely attempted to outmanoeuvre each other to advance their own sectoral interests. Hallerberg (1996) offers an example of this in Wilhelmine Germany: Exploiting state-level variation, he shows that German states with limited franchise, hence dominated by landed elites, were able to levy higher rates on capital and labor while rates on land stayed the same or decreased. Our empirical strategy, which seeks to minimize unobserved heterogeneity by exploiting within-state variation, reveals a similar pattern in Prussia: namely conservative incumbent elites were able to shift the tax burden from agricultural to industry through an expansion of the tax base in urban districts and the manipulation of the tax assessment in the countryside. Interestingly, the Prussian case suggests that this was possible by capturing key segments of the liberal coalition, particularly those who could benefit most from limited political liberalization—industrial elites. This result resonates with the so-called retrenchment hypothesis formulated by Aidt, Daunton, and Dutta (2010). This study documents how affluent urban strata in late-nineteenth century Britain would oppose a rise in taxation to avoid the reallocation of resources to benefit the working class.

Lastly, there is a growing interest in the politics of taxation in autocratic regimes; however, most of the empirical evidence so far is cross-national (Acemoglu, Naidu, Robinson, and Restrepo, 2015; Cheibub, 1998; Genschel, Lierse, and Seelkopf, 2016). We contribute to this literature by documenting how a ruling autocratic coalition adopted a modern, sophisticated tax to entrench its political power in times of rapid industrialization and inequality growth. Methodologically, our in-depth study of this crucial case shows the importance of a deep understanding of the interests of the actors involved in fiscal reform to explain unanticipated (and often couterintuitive) coalitions over fiscal choices.

The rest of the manuscript is organized as follows: Section 2 briefly reviews existing theories of fiscal innovation putting special emphasis on the relatively novel hypotheses in Mares and Queralt (2015). Section 3 introduces institutional details of the Prussian fiscal reform in the

last decade of the nineteenth century. Section 4 offers a qualitative review of Parliamentary debates and draws specific predictions about the support coalition of the income tax bill. A statistical analysis follows in Section 5. In sections 6 and 7, we examine the economic and political consequences of income tax adoption. We document the shift of the tax burden from land to urban districts and the electoral gains extracted by incumbent elites from tax-based electoral malapportionment. Section 8 revisits the analysis in light of the fiscal decentralization adopted as part of the 1893 reforms. We show that local surtaxes to the state income tax exacerbated the shift of the tax burden from land to industrial districts, helping conservative politicians to retain disproportional power in the highest tiers of the Prussian Lower House. In the conclusion we speculate about the implications of our findings for tax reform today.

2 The Political Economy of Early Income Tax Adoption

Why would politicians representing the wealthiest strata of society impose a higher burden on high-income earners, leave many low-income earners untaxed, and create the political and administrative foundations for the future expansion of the fiscal state? Existing explanations of fiscal reform emphasize the importance of war, interclass redistribution, and inraelite competition. Interstate war may exert a shock in the value of public goods (Besley and Persson, 2011) or change standards of social fairness (Scheve and Stasavage, 2016), facilitating the adoption of new forms of taxation. Fiscal reform may also be implemented to preempt social turmoil in the presence of rising levels of income inequality. In fact, the lack of credibility of redistribution through taxation is argued to be at the heart of democratization in Western Europe (see Acemoglu and Robinson (2000) and Boix (2003) for theoretical foundations and Aidt and Franck (2015) for empirical evidence).

Other studies have emphasized the importance of intra-elite rivalry for tax reform in times of major economic change (Beramendi et al., 2019). The process of industrialization in the nineteenth century altered the balance of power between landed and urban elites and gave rise to political demands by the rapidly growing urban population that was still disenfranchised

(Llavador and Oxoby, 2005). Specific to income tax adoption, Mares and Queralt (2015) argue that this tax helped incumbent landed elites to slow down the rise of industrial elites by burdening them with a disproportionately share of the new tax while diluting the political leverage of nonelite thanks to preexisting tax-based electoral malapportionment. In this section we revisit the argument advanced in Mares and Queralt (2015) and draw empirical implications that can be tested with more fine-grain historical data than theirs.

2.1 The Premodern Tax System Meets Industrialiation

Premodern tax systems were limited to trade taxes, excises, and direct taxes on land and real estate. Such systems were established during periods when land was the main productive asset and industry was limited to small-scale manufacturing. Premodern tax systems never intended to raise revenue by taxing industrial income. As a result, the fastest growing sector during the Industrial Revolution—large-scale manufacturing—remained virtually untaxed by European premodern tax systems (Hallerberg, 2002; Schremmer, 1989).

The early income tax was aimed at correcting the strong intersectoral imbalance in the tax burden between land and capital (Mares and Queralt, 2015). It sought to modernize the tax administration and improve its capacity to tap into sources of income that had hitherto been untaxed (i.e., industrial income and liberal professions). Due to the immense redistributive potential, the new tax generated marked sectoral disagreements between owners of land and capital, represented by Conservative and Liberal parties. Unsurprisingly, intersectoral conflict over income tax adoption was prominent in all major economies, including Britain (Daunton, 2001), France (Morgan and Prasad, 2009), Germany (Hallerberg, 1996), Italy (Federico, 2010), and the United States (Seligman, 1911). In all these cases, Conservative parties favored the adoption of the income tax alleging intersectoral tax fairness whereas Liberals opposed the new bill lamenting about double taxation.

2.2 Tax-based Electoral Malapportionment

In many electoral systems in the nineteenth century, political rights were contingent on tax payments.¹ That connection could take one of two forms. First, ballots could be weighed by the amount of individual tax payments; that is, the more direct taxes a voter paid, the higher the voter’s leverage in electing the district representative. A second form of *tax-based* electoral malapportionment conditioned the right to vote on prompt payment of direct taxes.

The existence of tax-based electoral malapportionment added a new dimension to the political calculus over early income tax adoption—and, more generally, opened a novel venue of fiscal reform considerations (Mares and Queralt, 2015). In anticipation of the electoral gains from the new income tax, candidates and parties representing the wealthier segment of the enfranchised population were likely to see clear political advantages in levying a new tax on their wealth. In exchange for higher tax burden, wealthier voters could secure higher leverage in the selection of candidates in electoral systems that weighed votes based on individual tax payments. By contrast, lower-income voters, usually exempted from the payment of income taxes, would remain virtually disenfranchised in the presence of tax-based malapportionment. In light of exacerbated political inequalities, rather counterintuitively, candidates representing lower-income groups would oppose the adoption of an income tax on the rich.

The forgoing discussion implies that the political calculations about the desirability of the new income tax could be explained by a combination of sectoral and income-based factors. For the sake of concreteness, Figure 1 maps preferences for income taxation as a function of sector specialization and the position on the income ladder. The landed aristocracy (upper-left cell) was the group that had the most to win from the adoption of an income tax: the latter could push the tax burden to the industrial sector; in addition, big landowners could rely on their high income to solidify their political leverage in the presence of tax-based electoral malapportionment. New industrial elites (upper-right cell) were cross-pressured. On one hand, the new income tax was likely to increase their tax burden compared to existing tax

¹Austria-Hungary, Italy, Japan, the Netherlands, Norway, and Sweden, and all but one German principality had tax-based electoral malapportionment in place by the time of income tax adoption.

		Sector	
		Land	Industry
Income	High	<i>Support</i>	<i>Cross-pressured</i>
	Low	<i>Cross-pressured</i>	<i>Oppose</i>

Table 1: **Sectoral and Income Divides in Support of Income Tax Adoption**

arrangements. However, in the presence of tax-based malapportionment, large tax payment could buy wealthy industrialists some political leverage. Small landowners (lower-left cell) were also cross-pressured but for opposite reasons. In economic terms, this group was likely to benefit from a new tax that shifted the tax burden away from the agricultural sector; however, because of the modest income of small landowners, this group was unlikely to benefit from tax-based electoral malapportionment. Finally, the urban middle-class (lower-right cell) was the group that had most to lose from income tax adoption. The new tax would levy a higher burden on this group, whose income had gone virtually untaxed under existing tax arrangements. In addition, the low income of these groups made it unlikely that they would benefit from tax-based electoral malapportionment.

3 The Prussian Income Tax

Prussia adopted a modern income tax in 1891. Three explanations have been offered to account for the origins of this fiscal innovation at this moment. First, the imperial tariff reform of 1890 reduced the amount of revenue that the German states received from the Empire as transfers, creating a fiscal deficit of 42 million marks during the budget year 1891/92 (Hallerberg, 2002, p.18). Second, public debt had remained high since the Franco-Prussian war and new sources of revenues were necessary to balance the budget (Schremmer, 1989, p.461-2). In fact, after investment in state monopolies, debt service remained the second largest public expense in Prussia between 1875 and 1913 (See Appendix F for the budget breakdown). These findings are consistent with the bellicist hypothesis. Third, the rise in importance of the “social question,” particularly after 1848, called for some sacrifice from the wealthier strata in

society (Schremmer 1989:452, Thier 2009:81). This explanation resonates with recent studies of democratization, which emphasize the redistributive fears of elites (Acemoglu and Robinson, 2000; Boix, 2003). In this paper, we investigate a fourth hypothesis that highlights divisions between industry and agriculture around the distribution of tax burden across groups and the implications of the new tax for the electoral representation of these sectors.

3.1 Context: Miquel's Law

The 1891 income tax, known also as *Miquel's law*, represented an important turning point in the comparative political history of the fiscal state (Hallerberg, 1996, 2002; Mathiak, 2011; Thier, 1999). The Prussian income tax pioneered a novel technology of revenue extraction that required all taxpayers to cumulate all separate sources of revenue in one schedule (Popitz, 1926). This method of taxation, 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 different sources of income in different schedules (Daunton, 2001).

Before 1891, Prussia had two types of personal taxes: the class tax (*Klassensteuer*), which was levied on annual income below 1,000 Taler in the countryside; and the classified tax (*Klassifizierte Einkommensteuer*), levied on people with incomes over 1,000 Taler in both rural and urban settings. These taxes were last reformed in 1873. At the time, the tax dualism between towns and countryside was abolished, and a mild progressive tax schedule was established. Based on the 1873 reform, poor individuals were exempted from tax payments; and the top marginal rate was increased up to 2.7%. Importantly, the assessment of these taxes was left to local authorities, which used external indicators (such as the number of cattle, family members, or windows) to establish the tax base of each individual. The in-depth investigation of personal incomes or fortunes was explicitly prohibited (Schremmer, 1989, p.439).

In 1891, the class and classified taxes were consolidated into a universal modern income

tax. Along with the *synthetic* method of income aggregation, the 1891 bill brought about three great innovations. First, the legislation introduced general tax liability, implying that *all* citizens and legal corporations were liable to income taxation. Second, the new bill introduced 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 was strengthened, the scope of discretion of authorities palpably reduced, and untruthful tax declarations leading to tax evasion were punished by fines. These innovations implied a radical change in the logic of taxation: The 1891 reform put an end to inefficient and unjust assessment practices of the old tax system and established the modern *ability-to-pay principle* (Schremmer, 1989, p.444-5).

Specific to the modern sector, the tax liability of corporations represented a major breakthrough because this principle dismantled the old business tax, controlled by professional associations, which allocated the tax quotas among members based on opaque criteria (Kenan, 1910). The inefficiencies and low extractive capacity of the business tax were common knowledge. The main 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, 1989, p.428). The 1891 reform put an end to the control of the professional associations and introduced the duty to disclose business accounts to tax officials. Not surprisingly, politicians representing business’ interest opposed to most of these changes.

Along with the technology of extraction, the 1891 bill changed tax rates. Two measures made the tax mildly more progressive. First, the exemption limit was 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 reduced the political rights and leverage of Prussia’s low-income population. Second, the top marginal rate was increased to 3.95% of taxable income, a 25% increase with respect to prereform levels.² As for the burden of the new tax, of the aggregate sum of 8,376 million marks of taxable income collected in 1891, two

²The marginal rate increased over time, reaching 15% by 1914.

thirds came 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 came from remunerated employment (doctors, lawyers, engineers); 58% from trade, industry, mining and invested capital; and 20% from landed property. Clearly, the new tax targeted income generated in the modern economy.

4 Parliamentary Debates and Roll Call Votes

The 1891 income tax was adopted after a long political process, characterized by intense political conflict. Four groups were represented in Parliament: The Conservative Party represented the interests of large landowners, the dominant group. The National Liberal Party represented the interest of large industrialists, a rising group whose political leverage lagged behind their economic ascendancy. The Free Liberal Party advanced the interests of the urban professional classes, individuals with good incomes but not with high levels of wealth. The fourth party represented in the Prussian parliament was the *Zentrum*, a Catholic party that received support from small landowners. Parliamentary debates focused on the relative burden and administration of the new tax and its political consequences given Prussia's censitary electoral law.

4.1 Tax Burden and Administration of the New Income Tax

The proposal to impose the new income tax on corporations 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—placed this issue in the new legislation against considerable opposition. In fact, the proposal to tax corporations survived in the final legislation adopted by Prussia's lower chamber with only a very narrow margin of two votes. Miquel himself opposed the idea and demanded the exemption of juridical persons from the burden of taxation while raising concerns about the double taxation of capital (Mathiak, 2011, p.115).

On the floor of Prussia's Lower House, this proposal was the object of significant political controversy. Conservative parties representing the interests of large landowners supported the extension of the scope of taxation to corporations.³ Rauchhaupt (Conservative) 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 and expressed their willingness to consider even an increase in the marginal tax rate. On the question of taxation of corporations, representatives of the Catholic *Zentrum* sided with Conservatives arguing in favor of the taxation of corporations and rebutting arguments about the double taxation of capital income.

Free Liberals, representing the urban middle-class, were the strongest political opponents of the provision to include corporations as part of the income tax. Rickert, the party leader, opposed the new income tax arguing that the latter was a policy that helped "flat land and East Prussia to the detriment of the West." Rickert argued that "in East Prussia, the law privileges estates (*Gutsbezirke*) to the detriment of localities with small landholdings. The incidence of the new tax begins where agrarian interests ends." 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.

National Liberals, representing Prussia's big industrialists, were divided over the new bill. Although some National Liberal politicians objected to the inclusion of the taxation of companies, most of them were, however, supportive of the legislation. This support, we will show below, can be attributed to the expectations of political gains for high-income voters. Even though big industrialists anticipated higher tax burdens, they expected to gain politically as a result of the heavier weighting of the votes of high-income taxpayers.

Importantly, the shift of the burden of income taxation to the modern sector was not followed by increases in taxation of wealth or land. An attempt was made to introduce an inheritance tax. One such bill, which would disproportionately target landed elites, was pre-

³Our Conservative category includes representatives of the Conservative Party and the Free Conservative Party.

sented by Miquel in 1890 together with the income tax. Conservatives opposed an inheritance tax on two grounds: the law was interpreted as a form of double taxation and it had the potential to “destroy the family.” Given the balance of Parliamentary forces, the inheritance tax proposal did not even make it out of committee (Hallerberg, 2002). In sum, the adoption of the income tax intended to bring about a permanent shift in the burden of taxation from the traditional to the modern economy.

A second question over which we find significant division in the Prussian Lower House concerns the creation of the new tax bureaucracy that assessed the new tax. Its collection, which was premised on the self-declaration of income, necessitated, at the same time, a skilled bureaucracy that could reduce opportunities for tax evasion. Prussian politicians considered two possible models of appointment to the new tax bureaucracy. One such model—a Weberian-like model—was 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* was to leave responsibilities to verify income in the hands of the *Landräte*. The latter were closely affiliated with Conservatives and occupied a unique position in Prussia’s administration. Their responsibilities included 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 appointing “bureaucrats that were trained in an ad-hoc fashion” as presidents of the commissions verifying income commissions that were 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 supported the creation of impartial tax administrators responsible for the collection of taxes. This position was also endorsed by prominent experts on taxation, such as Gustav Cohn, who recommended relying on Saxony’s model to design the new institutions of tax collection (Cohn, 1891, p.20-52).

Conservative politicians disagreed and remained 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*, Herrfurth insisted on maintaining this crucial administrative position in the hands of the Landräte. As Herrfurth argued, the political influence and “reputation” of the Landräte could be diminished if the latter did not chair this commission. This argument triumphed in the deliberations of the ministry. In the second chamber, Conservative politicians such as Rauchhaupt also argued in support of maintaining the crucial position of the *Landräte*. “People from outside the community”, Rauchhaupt argued, “do 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 administration.

4.2 The Exacerbation of Political Inequities

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. Since 1849, Prussia had in place a tax-based censitary system, much aligned with other early adopters of the income tax in the Western World. Specifically, the Prussian electoral system (*Dreiklassenwahlrecht*) divided voters in each commune into three tiers or “classes” depending on the total amount of direct tax payments.⁴ The third class included voters with the lowest levels of tax payments who collectively contributed one third of the total amount of taxes raised in the locality. The remaining voters were again ordered by their tax payments and assigned to the second and first class, respectively. The cutoff between these two lower classes was set in such a way as to ensure that the cumulative tax payments by all voters in the second and third class totaled two thirds of the tax revenue collected in the locality. The high-income voters whose cumulative tax payments were equal to the remaining third of revenues were assigned to the first class. Each class of voters elected the same number of electors, who, in turn, chose the politician(s) who represented the district. This electoral rule generated significant inequalities in representation among voters with different levels of income because the votes

⁴See Becker and Hornung (2019) for a dedicated piece on the political economy of the Prussian Three-class franchise.

of lower-income citizens carried less weight than those of higher-income voters. For instance, by the mid-1880's, over 10 percent of Prussia's first districted (*Urwahlbezirke*) consisted of only one single voter, and 7.8 percent of these districts included only two voters (Thier, 1999, p.887).

Repercussion resulting from the new income tax for the political rights of wealthy individuals was a salient issue during the parliamentary debates (Mauz, 1935). A publication of the Prussian *Staatsministerium* of 1889 reaffirmed that "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). National Liberals and Conservatives shared the desire to use the new income tax to further consolidate their electoral advantage and prevent the entry of middle class voters into the higher tiers of the electoral system. Such political considerations account for the recommendation made by politicians from these parties to impose a *higher* marginal tax rate on top income earners, a recommendation which is counterintuitive if one considers material interests alone. These politicians were willing to tax themselves at a higher rate in exchange for higher political rights and increased inequality in political representation.

Parties representing voters who would hardly move into higher classes of the electoral system advanced several recommendations to change the tax bill in order to increase the electoral rights of their constituents. One such proposal, sponsored by the *Zentrum*, recommended to assign a "fictitious" tax payment of 30 marks to voters to allow the latter to move into different tax categories (Linseman, 2015). Both Conservative and National Liberal politicians, representing wealthy constituents, opposed these proposals, considering them an "unjustifiable injustice." The motion was subsequently dismissed.

5 Modeling the 1891 Roll Call Vote

The economic and electoral considerations of early income tax adoption generates a number of predictions about the partisan support for the income tax bill. First, these predictions

presuppose a tight association between sectoral interests and partisanship. We present empirical evidence of this association in Appendix B. There we show that the likelihood of having a Conservative (Liberal) representative was strictly increasing (decreasing) in district-level landholding inequality and strictly decreasing (increasing) in urbanization rates, our proxy of the modern economy.

Given the tight association between sectors and parties, we expect Conservative politicians representing landowners to support the income tax bill, everything else constant. As the qualitative evidence suggests, they foresaw economic and political gains from the adoption of the new legislation. By contrast, we expect Free Liberals to vote against the income tax bill. These deputies, representing the urban middle class, likely anticipated both economic and political losses from the introduction of the new tax. If the bill passed, they would pay higher taxes (because of the sectoral shift of taxation) but not enough to benefit from tax-based electoral malapportionment.

		Sector	
		Land	Industry
High Income	Yes	Conservatives <i>(In Favor)</i>	National Liberals <i>(Cross-pressured)</i>
	No	Zentrum <i>(Cross-pressured)</i>	Free Liberals <i>(Against)</i>

Table 2: **Predicted Party Breakdown in the 1981 Income Tax Roll Call Vote as a Function of Constituency Interest**

Our predictions about National Liberal and *Zentrum* deputies are ambiguous. National Liberals represented major industries, which were disfavored economically by the provisions of the new legislation to tax capital income, but gained politically as a result of increased inequality in representation. A priori, they were cross-pressured; however, the proposal of various National Liberal deputies to pay even higher taxes in return for more political leverage mentioned in the previous section indicates how the dilemma was likely to be solved. *Zentrum* deputies, representing small landowners in Catholic Prussia, were also cross-pressured. They would hardly benefit from tax-based malapportionment given the modest income of their

constituency, but they would potentially benefit from shifting tax burden away from land. Support of or opposition to the new income tax ultimately depended on the ways deputies assessed the relative importance of anticipated economic and political gains.

Next, we study the breakdown of partisanship in a regression framework. To this end, we regress the roll call votes of the decisive vote over the entire income tax bill taken in Prussia in 1891 on a full battery of partisanship indicators: *Conservative*, *National Liberal*, *Free Liberal*, *Zentrum*, and *Minorities*, for which we do not draw expectations.⁵

We code the dependent variable as follows: For opponents of the new income tax, it equals 0; for politicians who abstain, it equals 0.5; and for politicians supporting the adoption of the income tax, it equals 1. Excused and unexcused deputies can be treated differently. In Table 3, we treat excused deputies as missing and unexcused deputies as abstainers.⁶ Accordingly, 294 deputies voted in favor, 27 abstained, and 48 voted against the 1891 bill.⁷ We predict adoption using ordinal probit models.

We include economic and political controls that are aggregated at the level of Prussian electoral districts, using the correspondence table between localities and districts developed by Kühne (1994). 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* and include a measure of the share of population in urban areas, *Urban Population*, which nicely captures levels of industrial development (i.e. 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).⁸

The results presented in column 1 in Table 3 illustrate the existence of a strong relationship between district-level economic conditions and support for the 1891 income tax bill. We find

⁵The SPD did not compete in elections to the Prussian Lower House until 1903. Minority parties representing Polish and Danish voters did not have a strong position relative to income tax adoption.

⁶Appendix C shows that this assumption is inconsequential. Result hold if we code excused and unexcused as abstainers or set them to missing.

⁷Appendix C presents the unfiltered breakdown of the roll call vote.

⁸Linguistic Fractionalization is drawn from Ardanaz and Mares (2014).

Table 3: **Ordinal Probit Models of the 1891 Income Tax Roll Call Votes at the Prussian Lower House.** 0 - against, 0.5 - abstention, 1 - in favor. Excused deputies are coded as missing and unexcused as Abstainers. For alternative assumptions, refer to Appendix C. In Models 2-5 Zentrum is the baseline category.

	(1)	(2)	(3)	(4)	(5)
Landholding Inequality [†]	0.022** (0.009)				
Urban Population (%)	-0.016*** (0.004)				
Conservative Deputy		0.686*** (0.197)	0.656*** (0.205)	0.679*** (0.213)	0.753*** (0.228)
National Liberal Deputy		0.685*** (0.257)	0.630** (0.261)	0.688** (0.272)	0.742*** (0.276)
Free Liberal Deputy		-2.520*** (0.587)	-2.515*** (0.624)	-2.471*** (0.612)	-2.482*** (0.667)
Minority Deputy		-0.045 (0.346)	-0.065 (0.348)	-0.052 (0.348)	-0.152 (0.347)
ln(Population)	-0.001 (0.164)	-0.143 (0.166)	-0.165 (0.178)	-0.141 (0.173)	-0.116 (0.179)
Linguistic Fractionalization	-0.002 (0.005)	0.011* (0.006)	0.011* (0.006)	0.010* (0.006)	0.008 (0.006)
Population Poor (%)			-0.005 (0.064)	0.001 (0.066)	-0.016 (0.067)
SPD Vote Share in Reichstag 1890				-0.003 (0.008)	-0.008 (0.008)
Social Disorders 1815-1875					0.037** (0.015)
Observations	350	350	343	343	342
Pseudo-R2	0.0406	0.191	0.183	0.183	0.202

[†]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

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 (refer to Appendix B for a dedicated analysis). Conservative deputies represent landed interests, and Liberal parties represent industrial interests. Among these, National Liberals represent the interest of large employers, and Free Liberals represent urban, professional classes. Based on strong alignment between sectoral interest and political party representation, in columns 2-5 we replace the economic characteristics of the district for the party affiliation of the elected deputy.⁹ This change 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, *Zentrum* is set as the baseline category; thus results should be interpreted relative to this group.

We begin by analyzing the position of Conservative deputies, who represented landed elites. Based on the theoretical discussion above, we expect Conservatives to have a higher probability of supporting the bill relative to *Zentrum*. The former gained on both fiscal and political grounds, whereas the latter, although likely anticipating a reduced fiscal pressure, could be worse off in terms of political representation because of tax-based malapportionment. The results reported in column 2 of Table 3 are consistent with this expectation. Indeed, Conservative deputies voted virtually unanimously in favor of the 1891 income tax bill. This is also reflected in Figure 1, which plots predicted probabilities of a favorable vote by partisanship.

The Free Liberals, representing the new urban professions associated with industrialization (e.g., lawyers, traders) had much to lose from income tax adoption. Very much like the *Zentrum* voters, the average Free Liberal sympathizer did not earn enough income to take advantage of tax-based malapportionment. The new income tax targeted the main sources of income of Free Liberal supporters (salaries, profits, and capital returns), thus departing from existing tax arrangements under which this group's incomes were virtually untaxed. All in all,

⁹Including both sets of regressors in the same model could cause a problem of endogenous or “bad” control.

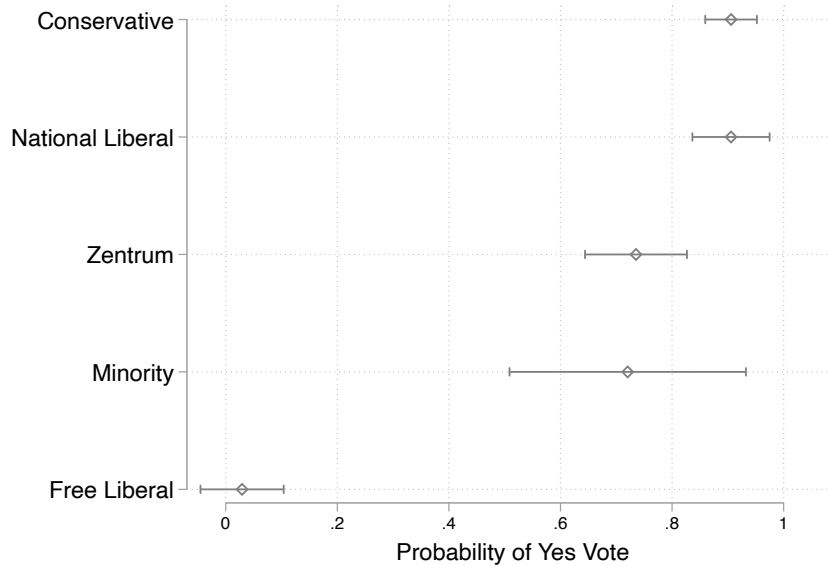


Figure 1: **Predicted Probability of Favorable Vote by Deputy’s Partisanship.** Estimates drawn from column 2 in Table 3.

we expect Free Liberals to have a lower probability to support the new tax bill as compared to the *Zentrum* because Free Liberals would lose on both fiscal and political ground. Results are consistent with this expectation: Free Liberal deputies opposed the income tax adoption virtually unanimously.

National Liberal deputies, representing the interests of large industrial elites, were cross-pressured when considering the advantages of the new income tax. On the one hand, they represented high-income voters likely to benefit from tax-based electoral malapportionment. On the other, the new tax contained a number of unfavorable provisions for the industrial sector. It pushed the burden of taxation to the modern sector by tapping previously undetected sources of income and by maintaining income assessment in the countryside in the hands of the Landräte. The political position of National Liberal deputies reflect this division. Still, a majority of National Liberals deputies (70 out of 78) considered that the political gains of the income tax outweighed its potential economic costs.

Thus far, results are consistent with the political and economic gains accrued by each group from the adoption of an income tax. Next, we address two key alternative explanation

that could also account for support for this reform:

The Social Question. Conservatives and National Liberal deputies elected in districts with high levels of landholding inequality might have favored adoption of an income tax in order to preempt political turmoil. Based on standard models of interclass redistribution, we could expect incumbent elites to try to appease social demands by implementing a tax-based redistributive program (Acemoglu and Robinson, 2000; Boix, 2003). This possibility is consistent with the analysis of Germany historians. The social question had been considered in public debate at least since the revolts of 1848 (Schremmer, 1989, p.437-9). In the reform of 1891, it was factored in by incorporating the modern principle of “ability-to-pay”. This principle was not meant to transform “tax legislation [...] as a main lever of social reform” (Thier, 2009, p.81-2) but it was necessary to justify taxation on wealth, not just income. In addition, the 1891 tax reform elevated the exemptions of lower income to 900 Mark, reducing the share of taxed population from about 60% to about 25% (Bartels, 2019).¹⁰

We consider three measures of social grievance: 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 is the *Share of SPD Vote in the 1890 Reichstag Election* (the SPD did not run for the Prussian Lower House until 1903). Given the more permissive electoral rule in place for elections to the *Reichstag*—which granted universal manhood suffrage—the SPD vote share genuinely reflected the mobilization capacity of the left. The third proxy is a measure of the *Local History of Social and Political Unrest* between 1815 and 1875, which signals the capacity of low-income voters to engage in collective action.¹¹ These data code all episodes of social and political unrest as reflected in the main newspapers at the time. Table 3 shows that only the latter proxy is statistically different from zero, suggesting that elites might have factored past violent episodes in their decision to favor income tax adoption. Importantly,

¹⁰Because of economic expansion, the share would grow up to 50% by 1914.

¹¹These data are drawn from Tilly (1970). The original data for social and political unrest are indexed at an administrative level located above the electoral district, our unit of analysis, but below the province level.

the coefficients measuring deputies’ partisan affiliations remain unchanged once we account for alternative hypotheses of fiscal innovation.¹²

Public Spending. Becker and Hornung (2019) show that liberal politicians in Prussia favored public spending when it was “self-serving”—namely when they benefited from it. While liberal politicians in the Prussian Lower House favored self-serving public spending and voted in favor of railroad nationalization and canal construction, among others, they still opposed the income tax (Becker and Hornung, 2019, Table 4). We presume that parts of the liberal coalition opposed the income tax not because they favored *small government* but because of its unfair distribution of the tax burden across sectors and the anticipated electoral consequences of the new tax.

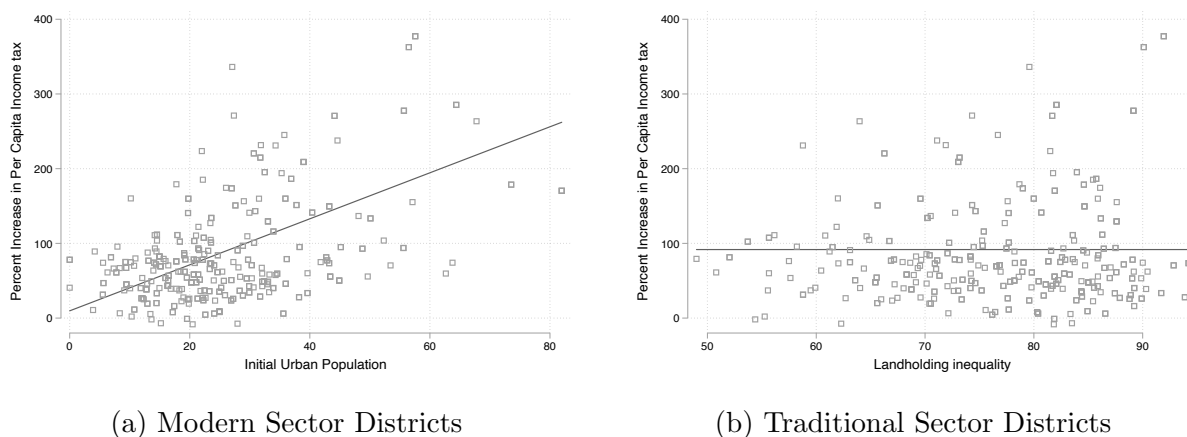
6 Sectoral Redistribution and Income Tax Adoption

The preceding discussion implies that politicians representing the interests of landowners supported the new income tax because its adoption would bring anticipated fiscal gains, resulting from the rebalancing of the burden of taxation between agricultural sectors and industry, and from a heavier taxation of manufacturing interests. Did subsequent patterns of taxation confirm expectations?

To test whether landowners reaped fiscal benefits from the adoption of the new tax, next we examine whether the burden of direct personal taxation on industry relative to land accelerated after the adoption of the income tax of 1891. To address this question, we examine changes relative to the two forms of direct taxation that preceded the income tax: the graduated income tax and the class tax, last reformed in 1873. As we argued above, these are premodern personal taxes that do not fully tax private income. Importantly, under that system, industrial income

¹²We present additional robustness checks in Appendix D. First, we control for the *Margin of Victory* of each politician, which may add strategic considerations to support income tax. Second, we exploit an exogenous source of the variation in the bargaining power of landed elites, namely, the *Napoleonic Treatment* (Acemoglu, Cantoni, Johnson, and Robinson, 2011). Third, we use an alternative proxy of the bargaining power of labor, namely, *Labor Scarcity*. Results hold across specifications.

Figure 2: **Percent Change in Per Capita Income Tax Yields between 1878 and 1900, a Decade before and after Income Tax Adoption.** Data are aggregated at the electoral district.



went virtually untaxed (Hallerberg, 2002; Schremmer, 1989). To determine whether the fiscal reform levied a relatively higher fiscal burden on industry, we examine the relationship between district-level characteristics and the *percentage growth* of personal direct taxation following the 1890s reform.

We expect to find a rise in the tax burden in constituencies with higher levels of urbanization because of the taxation of corporate income mandated in the legislation. We also expect to find no significant increase in the tax burden in constituencies with higher levels of landholding inequality mainly because the income was assessed by the Landräte, who were appointed by the very same landlords they were to monitor.

To compute the overtime increase in the tax burden, we work with the two closest fiscal records closest 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, making the 1878 data point a proper prereform benchmark 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 as of 1878.

On average, per capita income tax increased by 95% between 1878 and 1900. That is, per

Table 4: **Fiscal Outcomes of Income Tax Adoption: Percentage Growth of Per Capita Income Tax as a function of Urbanization Rate, Landholding Inequality, and Initial Conditions.** Data are aggregated at the electoral district.

	(1)	(2)	(3)	(4)	(5)
Prereform Urbanization (1878, in %)	4.662*** (0.868)	4.670*** (0.876)	4.259*** (0.935)	4.245*** (0.939)	4.477*** (0.914)
Landholding Inequality [†]	-2.189*** (0.829)	-2.130*** (0.792)	-2.287** (0.882)	-1.942** (0.869)	-1.929** (0.892)
Urbanization Growth (1878-1900)	1.036* (0.549)	1.049* (0.558)	0.930 (0.599)	0.950 (0.611)	0.966 (0.601)
Prereform Personal Taxation (1878)	-23.724** (10.025)	-23.749** (11.680)	-36.173*** (13.360)	-33.029** (13.120)	-30.338** (12.752)
Rural Productivity (1893-1897)		-0.001 (0.033)	0.007 (0.034)	-0.024 (0.032)	-0.009 (0.033)
Linguistic Fractionalization			-0.798*** (0.235)	-0.687*** (0.238)	-0.804*** (0.236)
Prereform Population Poor (%)			9.731* (4.984)		
Prereform SPD Vote Share for Reichstag (%)				0.912 (0.720)	
Social Disorders 1815-1875					-0.243 (0.615)
Constant	165.699*** (50.543)	161.871*** (55.003)	185.648*** (61.912)	198.380*** (62.000)	185.697*** (60.462)
Observations	228	227	215	219	218
R-squared	0.312	0.313	0.334	0.335	0.328

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

capita income tax yields doubled after the tax reform; however, the burden fell to districts unevenly. Figure 2 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 targeted sources of revenues hitherto untapped. In stark contrast, income tax yields did not increase in districts with high levels of landholding inequality despite Prussia's largest fortunes concentrated there.

In Table 4 we reexamine this evidence in a regression framework. Column 1 accounts for the initial conditions because units might differ in pre-reform *levels* of taxation and urbanization, as well as the percentage increase of urban population since 1878, the proxy of industrial *growth*. Holding these characteristics constant, we find that districts with higher levels of

landholding inequality experienced, on average, a *decrease* in the burden of taxation. On the contrary, districts in which industry grew most (corresponding to higher urbanization growth), experienced an *increase* in the tax burden.

The results presented in column 1 further illustrate the capacity of landowners to resist taxation. An alternative interpretation of these findings is that the profitability of land was low, and as such it remained exempt from income tax payments. To address this possibility, we control for the *Productivity of Land* from 1893 to 1897 (Grant, 2005). If tax yields correlated with prosperity, districts with highly productive land should have paid higher income taxes than those with depressed agriculture; however, the results reported column 2 suggests 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. Columns 3–5 add three additional variables to control for that possibility: the Share of Population Receiving Poor Relief in 1887, the SPD Vote Share in the 1890 Reichstag election, and the history of Social Disorders from 1815 to 1875, respectively. In addition, we control for the level of *Linguistic Fractionalization*, a potential factor precluding investment in fiscal capacity (Besley and Persson, 2011). Whereas the expectation for linguistic fractionalization is supported by the data, only the share of population receiving poor relief correlates with an increase of the tax pressure. This association could reflect elites' efforts to cope with extreme economic hardship in a rapidly industrializing society (Acemoglu and Robinson, 2000; Boix, 2003). Importantly, keeping these factors constant, we still observe that districts with higher landholding inequality were capable of resisting tax hikes. It is worth noticing that the effect of urban growth is not statistical significant once we control for social grievances. This is expected if the latter resulted from urban agglomeration.

In Appendix E we report additional evidence of the fiscal gains hypothesis. There we show that districts represented by Conservative (Liberal) politicians experienced a reduction (increase) of the tax burden within ten years of income tax adoption.

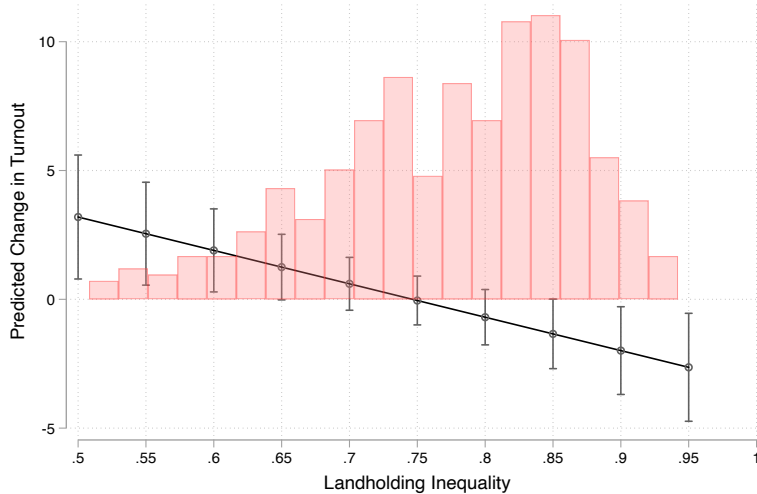


Figure 3: **Change in District-Level Turnout as a Function of Landholding Inequality.** 95% CI. Distribution of Landholding Inequality superimposed.

7 Political Inequality and Income Tax Adoption

As discussed above, electoral rules that conditioned voting rights on tax payments were likely to facilitate the formation of a cross-sectoral coalition supporting income tax introduction. The Prussian electoral system, introduced in 1849, weighed votes by the amount of direct taxes paid by voters. The 1891 income tax further exacerbated the connection between political representation and tax payments. As a result of the new bill, the vote of a high-income voter could weigh as much as thousands of votes of lower-income individuals (Kühne, 1994). In light of the amplified inequities in representation, we expect a decline in the turnout of nonwealthy voters following income tax adoption. After all, the value of their vote could count as much as nothing.

Figure 3 offers a first intuition of the effect of tax-based electoral malapportionment on participation rates. In particular, it plots the change in district-level turnout by levels of Landholding Inequality, which, in the absence of income distribution data, approximates how skewed income was distributed at the district level.

The bivariate relationship between turnout and land inequality suggests that the highest drop in participation following the adoption of the income tax happened precisely in districts

in which landholding inequality was highest, that is, where the effect of tax-based electoral malapportionment was strongest. But who abstained, exactly? Did nonwealthy citizens disproportionately abstain at higher rates than others as the theory predicts?

To address this question, next we examine the effect of the new tax on the political mobilization of nonelite voters. Specifically, we investigate changes in the support of the Free Liberal party before and after the adoption of the income tax, focusing on this party because it represents the interest of urban, middle-class voters, who were 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 determine whether Free Liberal voters abstained at higher rates after income tax adoption and then examine which political parties benefited 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. To carry out this analysis, for each seat we compute the percentage of votes that every party (i.e., winners and losers) received in both elections.¹³

If tax-based electoral provisions discouraged electoral participation of Free Liberal supporters, we should observe drops in political participation in districts where Free Liberal candidates were strongly supported prior to the adoption of the income tax. To test this prediction, column 1 in Table 5 regresses changes in turnout between 1888 and 1893 on prereform levels of the 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 correlate with a decrease in turnout between 1888 and 1893. We find this evidence consistent with the theoretical mechanism: Namely, in the presence of tax-based malapportionment, the new income tax dissuaded electoral participation of the

¹³Electoral districts have as many as three seats. In most cases, districts are uninominal.

urban, middle-class, a crucial electoral constituency of the Free Liberals.¹⁴

Next, we determine who benefited from the abstention of Free Liberal voters after the adoption of the income tax. We posit 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 6 in Table 5 are consistent with this conjecture. We find that electoral support for Conservative and National Liberal parties in the 1893 election increased in districts that had strongly supported the Free Liberals in 1888, prior to the adoption of the income tax. For each percentage point lost by the Free Liberals, Conservatives and National Liberals gained almost 0.25 points each.

In sharp contrast, columns 7 and 8 in Table 5 show that *Zentrum*, a party with electoral strengths among small agricultural landholders, that is, low-income voters, did not benefit from Free Liberal sympathizers' abstention, nor did minorities.¹⁵ The adoption of income tax under tax-based electoral malapportionment benefited elites only, landed or industrial.

Although on their own, the results reported in columns 3-6 do not tease out whether the increase in Conservative and National Liberal vote share was the result of vote change or changes in mobilization, results in columns 1 and 2 suggest that the latter mechanism was in place. That is, the change in political support in Free Liberal districts between 1888 and 1893 can be attributed to the higher abstention of Free Liberal supporters, which, in turn, benefited representatives of the parties favoring the adoption of the income tax in the expectation of future political gains.

¹⁴Appendix G shows that turnout rates in districts friendly to Conservatives and National Liberals did not drop after income tax adoption.

¹⁵The effect for *Zentrum* is small, and it is not statistically significant once we control for district-level characteristics.

Table 5: Where and Why Incumbent Elites Benefit Politically from the Income Tax?

	Δ Vote Share 1888-1893									
	Δ Turnout 1888-1893		Conservatives		National Liberals		Zentrum		Independents	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Free Liberal Vote Share in 1888	-0.097*** (0.023)	-0.079*** (0.028)	0.127** (0.064)	0.253*** (0.079)	0.134** (0.057)	0.227*** (0.077)	0.033* (0.019)	0.033 (0.030)	-0.015 (0.025)	-0.029 (0.040)
District-Level Controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
# of Parliamentary Seats	418	389	418	389	418	389	418	389	418	389
R-squared	0.034	0.035	0.011	0.037	0.014	0.038	0.004	0.020	0.001	0.011

Constant not reported. District-level controls are as follows: Landholding inequality, Urban Population as of 1890, Linguistic Fractionalization, Population as of 1890 (logged), Population Poor (%), SPD Vote Share in the Reichstag 1890 election, and Social Disorders 1815-1875. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

8 The 1893 Supplementary Tax and Municipal Surtaxes

Following the adoption of the income tax in 1891, Prussian elites enacted additional fiscal reforms in 1893 (Herzfeld 1938:267, Thier 1999:518-641). The so-called supplementary tax law (*Ergänzungssteuergesetz*), adopted at the time, introduced several modifications to the architecture of Prussian finances. First, these reforms decentralized the collection of direct tax revenues and placed the responsibility to collect several taxes in the hands of the municipalities. These included taxes on business, buildings, and land. Local authorities were given full powers to collect these taxes whose revenues were used in the financing of local spending in education, welfare and infrastructure (Schremmer, 1989, p.448-453). This provision was considered to be a “sweetener” for the Conservatives “for it effectively meant that many Junkers, who were in charge of their own local districts, were now in the position to tax themselves [or the Landrat, hand-picked by the local landed elite], on their own property.” (Palmowski, 1999, p.264-5). Anticipating a biased assessment of wealth under such conditions, the Free Liberals deemed the property tax regressive and opposed its introduction (Palmowski, 1999, p.264).

The new law also included a supplementary tax on wealth, the *Vermögenssteuer* (Thier, 1999, p.595). In an internal publication of the Prussian Ministry of Interior, Johannes von Miquel, the architect of the new legislation invoked fiscal needs as justification for the new tax on wealth: “It is in the long run not defensible to leave the highest incomes with the highest revenue raising capacity (*steuerkräftig*) untaxed” (Thier, 1999, p.597). The proposal to introduce a supplementary wealth tax was strongly resisted by representatives of National Liberals, who denounced the measure as “an inviolable attack on private property” and as the introduction of a “socialist principle in the tax-law” (Statement by Eynern, National Liberal Deputy, Stenographische Berichte, 17 April 1893). Miquel attempted to counter these worries, by emphasizing that the “level, but not the form of taxation, determines whether a socialist principle is in place” (Miquel, Stenographische Berichte, 17 April 1893). A political compromise around this wealth tax emerged only after additional proposals to introduce an inheritance tax were defeated.

One of the politically most controversial elements of the 1893 reform was the decision to exempt feudal estates (*Rittergüter*) from the payment of income taxes on landed property. While this decision reinforced the economic gain of agrarian elites, it had potentially unfavorable implications for the electoral rights of wealthy landowners. In particular, feudal estate owners (*Rittergutsbesitzer*) were not paying any form of communal taxes and risked to lose their privileged electoral position in the three-class franchise. To preclude a decline in the electoral strength of the old sector, Prussian elites adopted a modification of the electoral law in 1893. The new electoral law introduced a fictitious tax payment for feudal estate owners (Herzfeld 1938:270-1, Thier 1999:920, and Kühne 1994:211). More specifically, the law mandated that in cases where communal taxes were not assessed, the calculations necessary to assign a taxpayer to one of the electoral tiers should be based on previously assessed direct taxes (Kühne 1994:434, and Thier 1999:920). Conservative deputies in the Prussian second chamber unequivocally favored such proposal, considering it as a “self-evidence”, given that the dominant position of landed elites in Prussia could not be questioned” (Thier, 1999, p.950). Limburg-Stirum, a Conservative deputy in the Prussian Second Chamber, commented on the fictitious tax payment: “this is correct [...] and corresponds entirely to my status position and income position which I am keen to preserve” (Stenographische Berichte, 14. January 1893). The introduction of this fictitious tax payment attempted to prevent landed elites from falling from the highest to the second tier of the electoral system (Hallerberg, 2002, p.24).¹⁶

Historians of the period have argued that to introduce the supplementary tax, Miquel drew on political support from a similar coalition as in the case of the income tax adopted two years earlier. Thier considers that “in the second phase of the reform process, Miquel could rely on the fundamental consensus that was already present in the Prussian lower house” (Thier, 1999, p.518).

¹⁶This electoral reform precluded the political decline of the Conservative in Prussia until the onset of the Great War. Between 1893 and 1913, the seat share differential between Conservatives and National Liberals remained virtually unchanged at 51%.

8.1 The Roll Call Vote of the 1893 Supplementary Tax

Conservative politicians expected to gain both economically and electorally from the new law—hence they sponsored the bill. National Liberals could oppose the reform based on fairness considerations or support it and continue to benefit from tax-based malapportionment. So they did. National Liberals voted alongside Conservatives in supporting the legislation. Free Liberals were once again in the losing side. The new tax would be locally administered by agents of the landed aristocracy and the fictional tax given to landed elites would not help to close the gap in the three-class franchise system. As manifest in Table 6, the roll call vote of the supplementary tax of 1893 reflected once again a marked partisan division.

8.2 Municipal Surtaxes

The 1893 reforms transferred powers to municipalities to charge surtaxes. While the marginal state income tax rate did not exceed 4 percent, the municipalities were entitled to levy municipal surtaxes on the state income tax (Schremmer 1989:453, Soperer 2004:184, Thier 1999:ch.B.IV). These surtaxes could be substantial. Soperer (2004, p.184) cites contemporary tax literature that found that the average surtax for the 53 largest Prussian municipalities amounted to 179 percent, which increased the average marginal income tax for these cities to 8.4 percent, and for some to more than 10 percent.

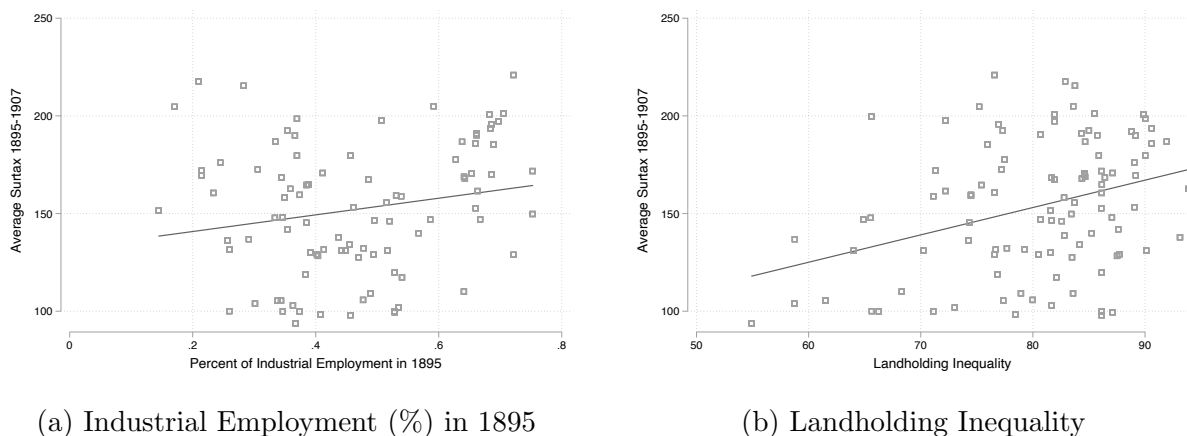
Surtaxes are consequential because they shape the ultimate burden of taxation across sectors as well as political representation. From 1893, taxes collected by local authorities were added to the tax total, which was then used to assign voters to the first, second, or third tier of parliament (Schremmer, 1989, p.448). Hence, surtaxes could exacerbate or correct the economic and political outcomes derived from state-wide income tax of 1891. To assess this possibility, we rely on surtax data compiled by Silbergleit (1908) for 100+ Prussian cities for 1895–1907.

Table 6: **Ordinal Probit Models of 1893 Income Tax Roll Call Votes at the Prussian Lower House.** 0 - against, 0.5 - abstention, 1 - in favor. Excused deputies are coded as missing and unexcused as Abstainers. For alternative assumptions, refer to Appendix C. In Models 2-5 and 7, Zentrum is the baseline category.

	(1)	(2)
Landholding Inequality [†]	0.030*** (0.009)	
Urban Population (%)	-0.009** (0.004)	
Conservative Deputy		2.344*** (0.207)
National Liberal Deputy		2.049*** (0.324)
Free Liberal Deputy		-0.855* (0.462)
Minority Deputy		0.068 (0.280)
ln(Population)	-0.277* (0.166)	-0.364** (0.174)
Linguistic Fractionalization	-0.012*** (0.004)	-0.007 (0.004)
Population Poor (%)		0.000 (0.058)
SPD Vote Share in Reichstag 1890		-0.017** (0.008)
Social Disorders 1815-1875		0.006 (0.009)
Observations	349	343
Pseudo-R2	0.0434	0.388

[†]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

Figure 4: Average Local Surtax 1895–1907 in Prussian Cities



8.2.1 Municipal Surtaxes and Sectoral Tax Burden

By sampling cities only, we cannot fully test the shift of the burden of taxation from purely rural to purely urban economies. The former are not included in our sample. We can, however, examine the relationship between the locality level surtaxes and the share of industrial employment (in 1895) and landholding inequality—hence emulating Figures 2b and 2a above, respectively.¹⁷ Using landholding inequality in an urban context might raise questions. We follow Ziblatt who showed that “even the most urbanized districts of Berlin, Essen, and Breslau contained some agricultural land. Moreover, in the 1890s only thirty-nine of the constituencies had less than 10 percent employed in the agricultural sector” (Ziblatt, 2008, p.627).

Figure 4a shows that local surtax was largest in highly industrialized cities, potentially reinforcing the sectoral shift of tax burden derived from the state-wide income tax.¹⁸ Second, Figure 4b suggests that as landholding inequality increased in an urban context, so did the local income tax supplement. The positive relationship between landholding inequality and local surtax may be puzzling unless we consider the political effects of income taxation. That is, by supporting local surtaxes hikes, Conservative elites could restrict access to the top tier(s)

¹⁷In this analysis we use industrial employment instead of urban share because Silbergleit’s (1908) data sample cities only, overrepresenting urban constituencies.

¹⁸Becker and Hornung (2019) show that liberal politicians in Prussia favored self-serving spending policy. This rationale could motivate the pattern observed in Figure 4a.

of Parliament to competing industrial elites. To test this conjecture, we draw on tier-specific electoral results for 1903 and 1908, as compiled by Kühne (1994).

8.2.2 Municipal Surtaxes and Electoral Gains

Although we cannot know who pushed for higher surtaxes at the municipal level, we can study who benefited from higher rates by looking at electoral performance. We can do this by regressing vote share in 1908 in the three tiers of the Prussian Lower House on the surtaxes paid in 1907. 1907 is the fiscal year immediately preceding the 1908 election. Tax revenues collected during this year were presumably used to assign voters to one or another tier. To preempt endogeneity concerns, we control for party vote share in 1903, the immediately previous election, to account for district-specific characteristics that correlate with 1908 party vote share and 1907 surtax level. To account for any shock that increased (decreased) the party popularity in 1908, we include the vote share in the remaining tiers as additional controls.

In Table 7 we present results of this exercise: Columns 1–3 report results for the Conservatives; Columns 4–6 for the National Liberals; and Columns 7–9 for Non Elite Parties, the sum of Zentrum and Free Liberals. These two parties ran in half the cities than the other two parties—an expression of the hurdle imposed by the surtaxes in presence of tax-based malapportionment—and the statistical power of each separate analysis is low. For that reason, we opted to pool them together in Table 7.

Party support by tier corroborates the disproportional power of Conservatives and National Liberals in Tier 1 and Tier 2. The nonelite parties would only match their vote shares once combined. The municipal surtax did not help to correct this inequality. The first three columns suggest that Conservatives were not particularly penalized by high surtaxes, which should not come as a surprise given their privileged position in the income ladder and the fictional tax payment that accompanied the 1893 tax reform. National Liberal representation was unaffected by surtaxes in the top tier. We find, however, that National Liberals were penalized in tier 2. This result could be explained by the fact that the urban areas of National

Table 7: Electoral Support in 1908 and Municipal Surtax

	<i>Conservatives</i>			<i>National Liberals</i>			<i>Non Elite Parties[†]</i>		
	Tier 1 (1)	Tier 2 (2)	Tier 3 (3)	Tier 1 (4)	Tier 2 (5)	Tier 3 (6)	Tier 1 (7)	Tier 2 (8)	Tier 3 (9)
Municipal Surtax FY 1907	0.012 (0.014)	-0.012 (0.010)	0.031 (0.022)	0.008 (0.013)	-0.023* (0.012)	0.003 (0.016)	-0.005 (0.019)	-0.001 (0.012)	0.051** (0.025)
1903 Vote Share in Same Tier	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1908 Vote Share in Other Tiers	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Average Outcome Variable	37.8	31.8	22.4	29.5	24.7	17.5	35.6	33.9	29.8
Observations	77	77	77	101	101	101	93	93	93
R-squared	0.982	0.985	0.936	0.974	0.970	0.915	0.958	0.980	0.918

[†] This category pools Free Liberals and Zentrum. Electoral support is measured by the vote share at any given tier-city: namely votes in tier i for party j as percentage of all votes in tier i in city k . Sample size varies because not every party competes in every town. If a party has missing values in tier 1 or 2 but gained nonzero vote share in tier 3, we replace missing values in tier 1 and 2 for zeros. This would be the case of a party that appealed to relatively poorer voters but was unattractive to wealthier voters. If a party has missing values in tier 1 and 2 and also 3, then we assume it did not run in that particular town and keep values in tier 1 and 2 as missing. Intercept not reported. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors in parentheses.

Liberal strongholds were located in the Ruhr region. Here, National Liberals faced a growing competition for middle class voters with the *Zentrum*. The decline in the National Liberal vote share in the second tier plausibly reflected the ability of the Catholic party to appeal to the new middle classes.

Columns 7–9 are likely the most interesting, as they show that an increase of surtaxes helped to concentrate the vote for nonelite parties in the lower tiers of the Prussian Lower House. The estimate in column 9 indicates that a one-standard deviation increase in surtax levels increased the vote share of nonelite parties in the third tier of the electoral system by 1.95 points, equivalent to a 6% increase in average support in that tier, keeping everything else constant. We need to keep in mind that local surtaxes grew over time—20% on average from 1895 to 1907. Hence they plausibly contributed to the dilution of the collective power of non-elite parties, by confining the vote share of these candidates to the lower tier of the electoral system.

To sum up, the correlational findings in this section, together with the qualitative evidence that preceded it, suggest that the local surtax consolidated the electoral advantage of incumbent elites, particularly that of landed elites, who in the early 1890s put together a fiscal and electoral system that met its needs. Municipal surtaxes, rather than weakening their political leverage, plausibly helped them to retain disproportional political representation in the *Abgeordnetenhaus* until 1914 despite extraordinary economic and social changes associated with the process of industrialization.

9 Conclusion

This paper contributes to the growing literature on the development of the modern state by examining the politics of taxation in nondemocracies. In such political contexts, incumbent elites can use their political influence within existing institutions to enact legislation that advances their economic and political interest. The early adoption of the income tax in Europe is one such example. This tax shifted the burden of taxation from the traditional

agrarian sector to the modern economy, benefiting incumbent landed elites to the detriment of urban classes. Likewise, incumbent elites took advantage of preexisting restrictive electoral institutions to reap political payoffs from the adoption of the new tax. Counterintuitively, the early adoption of the income tax was meant to prolong privilege, not tackle it.

We build from the theoretical corpus in Mares and Queralt (2015). Using fine-grained fiscal and electoral data in Prussia, we are able to shed light on the political calculations and outcomes of the adoption of an otherwise highly sophisticated income tax. Results are consistent with the shift of the tax burden from land to urban economy and illuminate electoral gains for incumbent elites thanks to the tax-based three-class franchise.

The latter set of results enrich our understanding of the origins of fiscal capacity in the Western World and its connection to political representation. Tax qualifications were one of many ways economic elites could minimize the political leverage of the have-nots. Unlike other options (e.g., property, income, and education qualifications), the adoption of an income tax could be publicly presented as a response to the social question even if it limited the political say of the very same people it was meant to help, due to its electoral consequences in a censitary electoral system. Combined with its limited progressivity and extractive capacity, the early income tax represented a (brilliant) tactic to prolong political and economic advantage of the ruling class in times of major economic and social change.

To conclude, our evidence draws an important implication for tax reform in other periods characterized by high levels of income inequality like today. To understand fiscal reforms, we need to pay particular attention to the interests and strategies of the elite. Their support of or opposition to tax reform may be rooted in efforts to use the tax system to enhance their political and economic power. Just as in the case of nineteenth-century reforms, however, such strategies may unintentionally yield policies and institutions that can be harnessed for more redistributive purposes at later points in time. Few contemporaries and participants in the Prussian debates could have imagined that the income tax would eventually become the most progressive tax instrument to date.

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****NOT FOR PUBLICATION****

Supplementary Online Appendices

Fiscal Innovation in nondemocratic Regimes

These appendices contain materials, results and robustness checks that supplement the main text.

A	Data Details	2
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A Data Details

- Roll Call Data*: Preussen Haus der Abgeordneten and Preussen Landtag. 1891. Stenographische Berichte über die Verhandlungen des Preussischen Hauses der Abgeordneten.
- Landholding Inequality*: Ziblatt, Daniel. 2008. “Does Landholding Inequality Block Democratization.” *World Politics* 60(4):610-41.
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- Linguistic Fractionalization*: Ardanaz, Martin and Isabela Mares. 2014. “Rural inequality, labor mobility and democratic reforms.” *Comparative Political Studies* 47(12):1739 - 1769.
- Population*: as of 1890 is drawn from *Preussische Statistik, Volume 121a*, pp.96-151.
- Population under Poor relief*: Kaiserliches Statistisches. 1887. *Statistik der Öffentlichen Armenpflege*. Berlin: Kaiserliches Statistisches. The information is available at the level of Prussian localities, which we then aggregate to the Prussian electoral district, using the correspondence between localities and districts presented in Kuhne (1994).
- Urbanization*: As of 1890 is drawn from *Preussische Statistik, Volume 121a*, pp.96-151. For *Urban Growth* we compute percentage change with respect to 1875. Data for 1875 is drawn from *Preussische Statistik, volume 42*, pages 202-231.
- Turnout*: Kühne, Thomas. 1994. *Handbuch der Wahlen zum Preussischen Abgeordnetenhauses, 1867- 1918*. Düsseldorf: Droste.
- Party Vote Share*: Kühne, Thomas. 1994. *Handbuch der Wahlen zum Preussischen Abgeordnetenhauses, 1867- 1918*. Düsseldorf: Droste. When by-elections are held after the 1888 general election but before March 6, 1891, we update the 1888 vote share with results of the

by-election.

-*Tax burden*: The source of 1878 data is: Herrfurth, Ludwig and Conrad Studt. 1880. "Finanzstatistik der Kreise des Preussischen Staates für das Jahr 1877/78". *Zeitschrift des Preussischen Statistischen Landesamtes*, Ergänzungshefte, Vol. 7. Berlin: Verlag des Königlichen Statistischen Bureaus, which is digitized and made available by Becker, Sascha O., Francesco Cinnirella, Erik Hornung and Ludger Woessmann. 2014. "iPEHDThe ifo Prussian Economic History Database." *Historical Methods: A Journal of Quantitative and Interdisciplinary History* 47(2):57-66. The source of the 1900 data is: Preussische Festschrift 1905, pages 122-126. We match localities to districts using the tables presented in Kühne (1994).

-*Share of Industrial Employment in 1895*): Galloway, Patrick R. 2007. "Galloway Prussia Database 1861 to 1914."

-*Social Disorders between 1815-1875*: Tilly (1970) counts the number of social and political disorders in 1815-1847 and 1850-75, separately. These information is drawn from the main newspapers at the time. In the regression analysis, the two variables added up and collapsed into one variable. Results are equivalent when these covariates are considered independently.

Table A-1: **Summary Statistics for Roll Call Analysis in Prussia. Unit: Parliamentary Seat.**

<i>Variable</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min.</i>	<i>Max.</i>	<i>N</i>
Landholding Inequality	77.637	9.254	50.806	94.215	420
Urban Population Share	32.603	21.166	0	100	423
ln(Population 1890)	11.609	0.556	9.951	14.272	423
Language Fractionalization	11.445	18.057	0.093	69.89	402
Population in Poor Relief	3.039	1.488	0.975	9.720	412
SPD Vote Share	13.035	14.26	0	66.099	423
Margin of Victory n	61.445	34.312	1	100	386
Napoleon Treatment	0.481	0.5	0	1	422
Labor Shortage	0.985	0.207	0.61	1.573	339
Social Disorders 1815-1875	10.047	8.557	0	37	422

Table A-2: **Summary statistics for the Fiscal Gains Test. Unit: Electoral District.**

<i>Variable</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min.</i>	<i>Max.</i>	<i>N</i>
Income Tax Yields % increase 1878-1900	95.008	106.718	-8.301	977.657	231
Income Tax Per Capita 1878	2.014	0.68	0.786	4.593	231
Urban Population in 1875	25.81	13.867	0	81.962	231
Urbanization Growth 1875-1900	21.178	32.514	-100	268.188	228
Landholding Gini	75.898	9.839	48.995	94.215	231
Rural Productivity Growth 1893-1897	956.468	203.865	745	1356	231
Language Fractionalization	10.89	17.824	0.093	69.89	223
Percent Poor 1882	2.754	1.128	0.975	7.915	221
Vote Share SPD 1890	11.499	12.754	0	66.099	225
Social Disorder 1815-1875	9.571	7.942	0	30	224

Table A-3: **Summary Statistics for the Political Gains Test**

<i>Variable</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min.</i>	<i>Max.</i>	<i>N</i>
Turnout Differential 1893-1888	-0.305	10.474	-45.8	51.5	420
Free Liberal Vote Share 1888	11.168	20.147	0	100	420
Conservative Vote Share Increase 1893-1888	3.033	23.922	-100	100	420
National Liberal Vote Share Increase 1893-1888	-0.591	22.508	-100	100	420
Zentrum Vote Share Increase 1893-1888	-0.514	9.867	-52.492	94.077	420
Minority Vote Share Increase 1893-1888	0.602	9.380	-60.299	81.988	420
Landholding Gini	77.587	9.210	50.806	94.215	416
Urban Population	32.63	21.22	0	100	421
Language Fractionalization	11.393	18.008	0.093	69.89	399
ln(Population)	11.614	0.559	9.951	14.272	421
Percent Poor	3.049	1.497	0.975	9.720	409
SPD Vote Share	12.963	14.127	0	66.099	419
Social Disorders 1815-1875	10.014	8.569	0	37	419

Table A-4: **Summary Statistics for the Municipality Surtax Test**

<i>Variable</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min.</i>	<i>Max.</i>	<i>N</i>
Surtax 1907	168.12	38.368	73	250	108
Landholding Inequality	80.421	8.077	54.923	93.881	108
Industrial Employment Share	0.475	0.151	0.145	0.753	101
Conservative 1908, Tier 1	37.826	29.776	0	97.2	77
Conservative 1908, Tier 2	31.8	28.735	0	98.8	77
Conservative 1908, Tier 3	22.392	24.572	0	99.3	77
National Liberal 1908, Tier 1	29.493	26.382	0	94.5	101
National Liberal 1908, Tier 2	24.725	23.275	0	95.8	101
National Liberal 1908, Tier 3	17.593	20.101	0	95.8	101
Free Liberal 1908, Tier 1	22.118	21.415	0	92.5	55
Free Liberal 1908, Tier 2	18.416	17.73	0	66.8	55
Free Liberal 1908, Tier 3	9.516	9.9	0	46.9	55
Zentrum 1908, Tier 1	37.343	30.344	0	90.2	56
Zentrum 1908, Tier 2	38.23	30.807	0	92.10	56
Zentrum 1908, Tier 3	40.027	31.652	0	95.40	56
Nonelite Combined 1908, Tier 1	35.618	28.322	0	92.5	93
Nonelite Combined 1908, Tier 2	33.986	28.232	0	92.10	93
Nonelite Combined 1908, Tier 3	29.828	29.523	0	95.40	93
Conservative 1903, Tier 1	39.444	30.361	0	97.90	77
Conservative 1903, Tier 2	35.766	29.255	0	96.2	77
Conservative 1903, Tier 3	27.01	27.314	0	96.60	77
National Liberal 1903, Tier 1	34.872	31.552	0	99.10	101
National Liberal 1903, Tier 2	34.499	31.364	0	99.5	101
National Liberal 1903, Tier 3	27.346	29.334	0	93.5	101
Free Liberal 1903, Tier 1	19.836	20.898	0	95	55
Free Liberal 1903, Tier 2	17.875	18.921	0	83.8	55
Free Liberal 1903, Tier 3	10.129	13.15	0	62.1	55
Zentrum 1903, Tier 1	32.345	34.15	0	92	56
Zentrum 1903, Tier 2	32.546	35.464	0	96.90	56
Zentrum 1903, Tier 3	33.243	36.772	0	98.60	56
Nonelite Combined 1903, Tier 1	31.235	29.575	0	95	93
Nonelite Combined 1903, Tier 2	30.175	30.078	0	96.90	93
Nonelite Combined 1903, Tier 3	26.015	31.228	0	98.60	93

B Sector Specialization and Party Representation

In the main text we argue sectoral interest and partisanship are tightly connected: Landed interest was represented by Conservative parties, while industrialists were represented by Liberal parties. Table A-5 shows this association using Prussian district data. Specifically, this table estimates the probability of having a Conservative representative as a function of district-level landholding inequality and urbanization rates. For completeness, we regress Liberal incumbency on the same covariates. Results show that high (low) levels of landholding inequality and low (high) urbanization predict Conservative (Liberal) incumbency.

The tight connection between sectoral interest and partisanship is also illuminated by Retallack (1988). He shows that wealthy landowners were successful in selecting candidates representing their interests as their political representatives. Specifically, 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.¹⁹

¹⁹Retallack, James. 1988. *Notables of the Right. The Conservative Party and Political Mobilization in Germany 1876- 1918*. Boston: Unwin Hyman.

Table A-5: **Conservative/Liberal Representation in Prussia as a Function of District-Level Economic Characteristics. Probit Models.** Notice that 1891 and 1893 deputies correspond to the same session. The pool of legislators varies slightly between years as a result of by-elections.

	(1) Conservative Deputy 1891	(2) Conservative Deputy 1893	(3) Liberal Deputy 1891	(4) Liberal Deputy 1893
Landholding Inequality [†]	0.052*** (0.009)	0.049*** (0.009)	-0.005 (0.009)	0.000 (0.009)
Urbanization (%)	-0.013*** (0.005)	-0.014*** (0.005)	0.021*** (0.004)	0.022*** (0.005)
ln(Population)	0.105 (0.156)	0.152 (0.161)	-0.640*** (0.175)	-0.643*** (0.178)
Linguistic Fractionalization	-0.008** (0.004)	-0.008* (0.004)	-0.002 (0.005)	-0.006 (0.005)
Constant	-4.758** (1.853)	-5.138*** (1.934)	6.458*** (1.961)	6.038*** (2.000)
Electoral Districts	400	398	400	398
Pseudo-R2	0.0872	0.0818	0.0875	0.101

[†]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

C Classifying Roll Call Votes

The increase in abstention in the 1893 bill came from *Zentrum* representatives. Unlike Conservatives, *Zentrum* preferred the inheritance tax to property tax, yet they did not want to side with the Free Liberals either.

Table A-6: Prussian Roll Call Breakdown

	Total	Cons	Nat Libs	Free Libs	Zentrum	Other
1891 Roll Call						
Against	48	8	5	22	12	1
In Favor	294	149	70	1	61	13
Abstention	3	0	2	0	1	0
Sick (non-excused)	9	1	1	0	4	3
Vacation (non-excused)	4	3	0	0	1	0
Excused	53	28	10	6	8	1
Absent	11	4	0	1	5	3
Total	422	193	88	30	92	19
1893 Roll Call						
Against	24	3	5	13	1	2
In Favor	210	148	58	1	1	2
Abstention	80	1	0	0	68	11
Sick (non-excused)	6	4	0	1	1	0
Vacation (non-excused)	11	4	4	2	1	0
Excused	52	21	14	7	10	0
Absent	36	7	2	7	15	5
Total	419	188	83	31	97	0

Table A-7: Ordinal Probit Models of Income Tax Roll Call Votes of 1891 and 1893 with different assumptions about how to code Excused and Non-Excused deputies. 0 - against, 0.5 - abstention, 1 - in favor. Zentrum Deputy is the excluded category.

	Excused and Non-excused as Abstainers		Excused and Unexcused to Missing	
	(1) 1891 Vote	(2) 1893 Vote	(3) 1891 Vote	(4) 1893 Vote
Conservative Deputy	0.412** (0.176)	1.919*** (0.170)	0.794*** (0.288)	3.006*** (0.304)
National Liberal Deputy	0.501** (0.231)	1.691*** (0.262)	0.513* (0.300)	2.430*** (0.407)
Free Liberal Deputy	-2.059*** (0.420)	-0.772*** (0.386)	-2.633*** (0.710)	-1.267 (0.783)
Minority Deputy	0.070 (0.329)	0.017 (0.284)	-0.028 (0.575)	0.118 (0.324)
ln(Population)	-0.057 (0.140)	-0.103 (0.154)	-0.191 (0.198)	-0.164 (0.211)
Linguistic Fractionalization	0.002 (0.004)	-0.003 (0.004)	0.016** (0.008)	-0.008* (0.005)
Population Poor	-0.055 (0.049)	-0.030 (0.051)	0.003 (0.074)	-0.043 (0.067)
SPD Vote Share [Reichstag 1890]	-0.006 (0.006)	-0.009 (0.007)	-0.005 (0.009)	-0.029*** (0.010)
Social Disorders 1815-1875	0.023*** (0.010)	0.002 (0.009)	0.025 (0.017)	0.009 (0.011)
Observations	390	387	322	299
Pseudo-R2	0.120	0.285	0.273	0.496

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

D Robustness Tests for Roll Call Analysis

Table A-8: Ordinal Probit Models of the Roll Call Vote of 1891 while including Margin of Victory [linear and flexible polynomials]

	(1)	(2)	(3)
Conservative Deputy	0.791*** (0.236)	0.793*** (0.238)	0.765*** (0.237)
National Liberal Deputy	0.954*** (0.299)	0.956*** (0.298)	0.884*** (0.307)
Free Liberal Deputy	-2.348*** (0.697)	-2.356*** (0.718)	-2.393*** (0.709)
Minority Deputy	0.272 (0.373)	0.266 (0.378)	0.272 (0.388)
ln(Population)	-0.139 (0.188)	-0.139 (0.187)	-0.176 (0.190)
Linguistic Fractionalization	0.010 (0.006)	0.010 (0.006)	0.008 (0.006)
Population Poor	0.002 (0.071)	0.002 (0.071)	0.011 (0.072)
SPD Vote Share [Reichstag 1890]	-0.009 (0.009)	-0.009 (0.009)	-0.010 (0.009)
Social Disorders 1815-1875	0.037** (0.016)	0.037** (0.017)	0.035** (0.017)
Margin	0.003 (0.003)	0.001 (0.014)	0.051 (0.039)
Margin ²		0.000 (0.000)	-0.001 (0.001)
Margin ³			0.000 (0.000)
Observations	324	324	324
Pseudo-R ²	0.212	0.213	0.218

Robust standard errors in parentheses

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

Table A-9: **Ordinal Probit Models of Income Tax Adoption using an alternative proxy of labor bargaining power to obtain concessions from the wealthy: Labor Scarcity (Ardanaz and Mares, 2014).** 0 - against, 0.5 - abstention, 1 - in favor. Zentrum Deputy is the excluded category. Excused deputies are coded as missing and Non-Excused as Abstainers.

	1891 Bill		1893 Bill	
	(1)	(2)	(3)	(4)
Landholding Inequality [†]	0.022** (0.011)		0.041*** (0.009)	
Urban Population (%)	-0.002 (0.008)		-0.001 (0.006)	
Conservative Deputy		0.742*** (0.224)		2.165*** (0.248)
National Liberal Deputy		0.825** (0.331)		2.113*** (0.348)
Free Liberal Deputy		-2.247*** (0.617)		-1.225* (0.641)
Minority Deputy		0.077 (0.394)		0.155 (0.267)
ln(Population)	0.049 (0.229)	0.108 (0.217)	-0.619*** (0.240)	-0.686*** (0.213)
Linguistic Fractionalization	-0.002 (0.005)	0.005 (0.007)	-0.016*** (0.005)	-0.012** (0.005)
Labor Scarcity	0.033 (0.547)	-0.261 (0.601)	-1.173** (0.536)	-1.763*** (0.565)
Observations	287	287	281	281
Pseudo-R2	0.0175	0.171	0.0814	0.394

[†]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

Acemoglu et al. (2011) argue that the Napoleonic invasion was associated with a number of far-reaching economic reforms that removed feudal legacies and strengthened the power of the industrial sector in Germany. This implies that the strength of landowning elites was significantly lower in regions that experienced a “Napoleonic” treatment. As such, one can expect to find a negative relationship between the Napoleonic treatment and political support for the adoption of the income tax. To test this hypothesis, following Acemoglu et al. (2011), we code variation in the Napoleonic treatment across different administrative regions in Prussia.

Results in Appendix Table A-10 show that the inclusion of this variable does not modify in any significant way the results reported in Table 3.

Table A-10: **Ordinal Probit Models of Income Tax Adoption controlling for Napoleonic presence.** 0 - against, 0.5 - abstention, 1 - in favor. Zentrum Deputy is the excluded category. Excused deputies are coded as missing and Non-Excused as Abstainers.

	1891 Bill		1893 Bill	
	(1)	(2)	(3)	(4)
Landholding Inequality [†]	0.022** (0.010)		0.027*** (0.009)	
Urban Population (%)	-0.016*** (0.004)		-0.009** (0.004)	
Conservative Deputy		0.629*** (0.206)		2.177*** (0.219)
National Liberal Deputy		0.666*** (0.257)		1.762*** (0.305)
Free Liberal Deputy		-2.568*** (0.610)		-1.190*** (0.431)
Minority Deputy		-0.090 (0.347)		-0.030 (0.274)
ln(Population)	-0.017 (0.165)	-0.157 (0.167)	-0.293* (0.167)	-0.478*** (0.150)
Linguistic Fractionalization	-0.000 (0.005)	0.009 (0.006)	-0.014*** (0.004)	-0.003 (0.005)
Napoleon Treatment	0.128 (0.183)	-0.119 (0.199)	-0.175 (0.167)	-0.082 (0.190)
Observations	349	349	348	348
Pseudo-R2	0.0415	0.191	0.0453	0.384

[†]Landholding Inequality is rescaled from 0-1 to 0-100 to facilitate comparison with other continuous variables. Data for Napoleonic presence drawn from Acemoglu, Daron, Davide Cantoni, Simon Johnson and James A. Robinson. 2011. The Consequences of Radical Reform: The French Revolution.” *American Economic Review* 101(7):3286-3307. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

E Additional Tests of the Fiscal Gains Hypothesis

We first investigate whether Conservative deputies in the 1889-1893 session truly advanced the interest of the landed elite. To test for this, we include a measure of conservative representation: specifically, a *Conservative District* is one in which more than half of its representatives are affiliated with either the Conservative or Free Conservative parties.²⁰ Results in column 1 in Table A-11 speak for themselves: districts with conservative representatives in 1891 are those experiencing decline in tax burden following the tax reform. On average, a conservative district pays 37% less taxes in 1900 as compared to 1878. Results are equivalent when we use the 1893 vote (column 2) to identify *Conservative Districts*.²¹ All in all, districts with strong landed interest elect conservative deputies and, overtime, experience a reduction in the tax burden.²²

Second, in column 3 and 4, we investigate the relationship between the vote casted in the roll calls of 1891 and 1893, and the subsequent increase in the tax burden. We observe no relationship whatsoever. That is, districts whose deputies voted in favor of the income tax did not systematically benefit from lower taxes. This result is perfectly consistent with the fiscal gains hypothesis. As it has been argued (and shown in Table 3), the income tax was not only favored by the Conservatives, but the National Liberals too, who represented big business. National Liberal's vote was only justified on electoral grounds, not fiscal. They would benefit from the participation barriers that the income tax imposed. But, given their weaker bargaining position relative to the Conservatives, the political gain did not come for free: in exchange for gaining political leverage, National Liberals had to assume higher tax burden on their (hitherto untapped) industrial income. All in all, since deputies representing both the landed and big industrialist interest voted in favor of the new tax, we should not find any effect of roll call votes on subsequent tax burdens.

Third, we corroborate what we just argued by showing in columns 5 and 6 that districts

²⁰Districts vary in their magnitude: from 1 to 3.

²¹This is hardly surprising, as the pool of representatives in 1893 was virtually identical to that of 1891. The few by-elections between 1891 and 1893 marginally changed the composition of the lower chamber.

²²Refer to Appendix Appendix Table A-5 for further evidence on this correspondence.

represented by Liberals (National or Free) deputies in 1891 and 1893 experience the highest increases in personal direct taxation over time. Altogether, we interpret results in Table A-11 as evidence in favor of the fiscal gain test, by which the burden of taxation disproportionately fell onto the industrial sector, which was concentrated in urban areas represented by Liberal deputies. Similarly, results illustrate the trade-offs faced by National Liberals face in supporting income taxation: higher tax payments were necessary in order to advance their political influence.

Table A-11: **Additional Tests of Fiscal Outcomes of Income Tax Adoption.** Dependent Variable: Percentage Growth of Per Capita Income Tax at the Electoral District Level

	(1)	(2)	(3)	(4)	(5)	(6)
Pre-reform Urbanization (1875)	3.960*** (0.971)	3.991*** (0.968)	3.936*** (0.983)	4.059*** (1.005)	3.888*** (0.932)	3.984*** (0.929)
Landholding Inequality	-1.660* (0.854)	-1.724* (0.895)	-2.378*** (0.890)	-2.445** (0.998)	-1.914** (0.763)	-2.045** (0.810)
Urbanization Growth (1878-1900)	0.797 (0.622)	0.785 (0.644)	0.902 (0.620)	0.880 (0.632)	0.732 (0.588)	0.728 (0.603)
Pre-Reform Personal Taxation (1878)	-38.529*** (13.741)	-40.359*** (14.249)	-38.103*** (14.146)	-40.721*** (14.943)	-38.060*** (13.967)	-39.369*** (14.444)
Rural Productivity (1893-1897)	-0.011 (0.036)	-0.005 (0.035)	-0.013 (0.036)	-0.012 (0.038)	-0.024 (0.037)	-0.016 (0.037)
Pre-Reform Population Poor	7.274 (4.572)	6.576 (4.620)	10.540** (4.682)	10.261** (4.769)	8.489* (4.969)	7.162 (5.137)
Pre-Reform SPD Vote Share	0.930 (0.727)	0.771 (0.682)	1.081 (0.727)	0.863 (0.690)	0.659 (0.757)	0.403 (0.731)
Social Disorders 1815-1875	-0.232 (0.622)	-0.112 (0.620)	-0.115 (0.634)	-0.069 (0.629)	-0.114 (0.634)	0.171 (0.648)
Linguistic Fractionalization	-0.854*** (0.241)	-0.935*** (0.249)	-0.664*** (0.234)	-0.766*** (0.267)	-0.664*** (0.225)	-0.670*** (0.248)
Conservative District in 1891	-37.278*** (9.410)					
Conservative District in 1893		-35.440*** (9.591)				
Yes Vote in 1891			-11.107 (12.825)			
Yes Vote in 1893				4.189 (14.264)		
Liberal District in 1891					51.613*** (17.912)	
Liberal District in 1893						56.478*** (19.030)
Constant	187.734*** (65.906)	192.511*** (68.219)	218.575*** (66.254)	218.149*** (71.361)	189.589*** (63.163)	194.999*** (64.999)
Observations	214	211	214	211	214	211
R-squared	0.368	0.366	0.345	0.344	0.375	0.381

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

F Prussia's State Expenditure, 1875-1913

Table A-12: Prussia's State Expenditure (gross budget values), 1875-1913 [Excerpt from Schremmer (1989, Table 81)]

	Tota Ordinary Expenditure (milion marks)	Composition (as % Total)				
		State Monopolies	Administration & Jurisdiction	Debt	Culture & Education	Contribution to Reich
1875	605.4	39.8	33.6	6.1	6.5	5.3
1882	953.8	44.3	24.7	13.1	5.0	5.5
1892	1,802.1	43.7	19.1	15.2	5.6	10.7
1902	2,519.6	45.3	15.4	11.7	5.9	14.1
1913	4,172.2	58.5	14.5	11.1	7.0	3.8

G Conservative and National Liberal Turnout after 1891

The adoption of a modern income tax in 1891 strengthened the connection between direct tax payments and voter’s leverage. In section 7 we argued that the tax reform weakened the political leverage of middle class, who disproportionately voted for the Free Liberals. We showed that turnout levels actually decreased in districts in which the Free Liberals had been stronger before the tax reform. Table A-13 shows results when we consider 1888 support for Conservatives and Liberal Nationals. In this model, turnout in former Free Liberal district decreased by 10 percent (consistent with Table 5). By contrast, participation rates for Conservatives and National Liberals remained the same—hence their electoral gains showed in columns 3–6 in Table 5.

Table A-13: Turnout Effects Following Income Tax Adoption

	Δ Turnout 1888–1893
Free Liberal Votes in 1888	-0.096*** (0.029)
Conservative Votes in 1888	0.024 (0.017)
National Liberal Votes in 1888	-0.030 (0.021)
Landholding Gini	-13.160** (6.254)
Prereform Urban Share	0.053 (0.035)
Linguistic Fractionalization	0.037 (0.035)
Prereform Poluation (logged)	-1.924 (1.218)
Prereform Popullation Poor (%)	-0.153 (0.434)
Prereform SPD Vote Share for Reichstag (%)	0.019 (0.047)
Social Disorders 1815-1875	-0.020 (0.066)
Constant	31.122** (13.535)
Observations	389
R-squared	0.057

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1