

# The Political Economy of the Prussian Three-class Franchise \*

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## Abstract

How did the Prussian three-class franchise, which politically over-represented the economic elite, affect policies? Contrary to the predominant and simplistic view that the system allowed the landed elites to capture most political rents, we find that MPs from constituencies with a higher vote inequality support more liberal policies, gauging their political orientation from the universe of roll call votes cast in parliament during Prussia's rapid industrialization (1867–1903). Consistent with the characteristics of German liberalism that aligned with economic interests of business, the link between vote inequality and liberal voting is stronger in regions with large-scale industry.

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**JEL Classification:** D72, N43, N93, P26

## Introduction

It has been widely acknowledged that the pre-industrial distribution of landownership exerted a continuing influence on the political and economic institutions of industrializing societies across the world. Suffrage institutions historically excluded large parts of society from political influence and arguably affected long-run development through biased tax systems and public goods provision ([Engerman and Sokoloff, 2005](#)). Concentration of political power in the hands of a small landed elite alongside a vast majority of the population without effective rights has been associated with the adoption of policies that mainly benefit this elite ([Acemoglu, Johnson, and Robinson, 2001, 2002](#)).

The conventional wisdom regarding Prussia's development during the second half of 19th century is that the landowning elite, the Junkers, retained sufficient control over the political process to obtain political rents. According to [Gerschenkron \(1966, p. 25\)](#), due to the unequal and indirect Prussian franchise, Junkers dominated both chambers of

the Prussian parliament and could thus veto legislation in the Federal Council of the German Empire. Despite several attempts to introduce an equal voting system, which were blocked by MPs representing voting districts where the landed elite was concentrated, Prussia maintained a voting system that was unequal, non-secret, and indirect until the eve of WWI (Ziblatt, 2008). Since 1850, members of the lower house of the Prussian parliament were elected under the so-called three-class franchise system, which translated tax payments into voting weights. Voters were grouped into three classes (*Abteilungen*) by total direct taxes paid. Each of the three classes represented one third of the total direct tax revenue and received the same number of votes. Classes were filled with voters ranked according to their tax payments, starting from the highest, adding taxpayers until one third of the total tax base was reached, thereby allocating less than 5% of voters into the first class, on average.

By tying voting power to economic power, the system arguably produced policies tailored to fit the landed nobility.<sup>1</sup> German economic historians widely agree that the franchise system was designed to “generate Conservative votes”,<sup>2</sup> and thereby produced (socio-) economic policies favored by agrarian elites (see, for example Nipperdey, 1992, p. 86 and Clark, 2006, pp. 560–61). Kühne (1994a, p. 25) stresses that the system was “the bulwark of reactionary Prussianism par excellence.”<sup>3</sup> Indeed, the Prussian parliament was firmly regressive in so far as Social Democrats were not able win any mandates until 1908. Despite this univocal assessment, the question whether the unequal distribution of voting rights in Prussia produced conservative policies is ultimately an empirical one and has not been answered thus far.

This paper fills this gap and investigates how the three-class franchise contributed to the adoption of liberal or conservative (socio-)economic policies by the Prussian parlia-

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<sup>1</sup>For example, Hallerberg (2002) argues that the electoral system was set up in a way that allowed parliament to amend the tax code to reduce the burden for large landowners.

<sup>2</sup>See Geheimes Staatsarchiv, Preussischer Kulturbesitz, I HA Rep90 Staatsministerium St. M 9317, Berlin, 7 May, 1849, as cited in Ziblatt (2008, p. 621).

<sup>3</sup>“[...] sein über zwei Generationen hinweg bis in den Weltkrieg hinein währender Bestand machte aus ihm das Bollwerk des reaktionären Preußentums schlechthin und gab dem Hegemonialstaat des Deutschen Reichs eine im nationalen wie im internationalen Vergleich einzigartige Ausnahmestellung.”

ment. We find that MPs from constituencies with higher vote inequality, that is, where a small number of affluent voters holds a large share of the political power, vote significantly more for liberal policies. Crucially, our result of a link between vote inequality and more liberal voting holds controlling for landownership inequality, which itself generates more conservative voting, in line with earlier claims that landed elites protected their own interests (see [Gerschenkron, 1966](#)).

Post-1848 German liberalism catered to a relatively small group of bourgeois voters that advocated low taxes and free market capitalism ([Gall, 1975](#); [Kurlander, 2015](#)). In fact, [Gross \(2004, p. 22\)](#) summarizes the vision of German liberals as seeking progressive development toward modern rationalism, bourgeois individualism, high industrialization, free-market capitalism, and the unified nation-state. With national unity (excluding Austria) and the German constitution in 1871, central goals of liberalism had been achieved, including progressive legislation such as the penal code, the commercial code, the reform of the monetary system, and the Prussian county ordinance. The subsequent relative decline of popularity of liberalism coincided with a period of economic stagnation ([Langewiesche, 1992](#)). In the 1880s and 1890s, liberals aimed to address the looming social challenges of rapid industrialization and the demise of the working class by adopting social liberalism, a form of liberalism that opposed governmental social policy and supported “self-help” instead of “state-help” ([Kurlander, 2015](#)). Advancing public education and improving the urban infrastructure became central instruments in their strive for a liberal society ([Langewiesche, 1990](#); [Palmowski, 1999](#)).

In the Prussian parliament, liberal and conservative views differed on many issues. We illustrate some of the divides of the time by inspecting five salient debates in which liberals opposed tuition fees in public primary schools, supported decentralization of administrative power, opposed nationalization of railroads, supported tax exemptions for income from capital investments, and supported the construction of a canal that arguably increased competition in East Elbian grain markets.

We capture the (socio-)economic orientation of policies by measuring the political

orientation of MPs using the universe of 329 roll call votes (RCVs) from the Prussian House of Representatives in the period 1867–1903. We apply [Poole's \(2000\)](#) optimal classification (OC) method, described in detail below, to measure two salient dimensions of MPs' political orientation: their liberal vs conservative economic orientation and their secular vs religious orientation. The start year is chosen because in January 1867 Prussia reached its maximum extension after incorporating Schleswig-Holstein. The choice of the end year is due to the fact that, from election period 20 (1904–1908), there was a change in the procedure to elect MPs, and in 1906 a range of constituencies were split. Our period of analysis is characterized by the rapid industrialization of the economy, and by the secularization of society in Prussia and the German Empire more broadly.<sup>4</sup>

The results are robust to the inclusion of a sizable set of constituency-level control variables capturing regional development and thereby the political preferences of the median citizen. Complementing the analysis with biographical information of MPs, we also inspect whether voting was biased toward MPs' personal agendas. The inclusion of both sets of variables does not change our main qualitative findings.

Furthermore, we control for party affiliation. Of course, since parties are collectives of like-minded people, party affiliation captures a lot of the variation in political orientation of MPs. But since parties did not exercise complete control over MP voting behavior, there is sufficient within-party variation in political orientation that our main results hold conditional on party affiliation.

Despite the fact that our broad set of control variables explains a substantial amount of variation in the political orientation of MPs, we discuss remaining endogeneity concerns related to omitted variable bias. As we explain in more detail below, the allocation of voters to classes reflects local thresholds between terciles of the tax base that are arbitrary from a national perspective. In locations with a large number of high income earners, voters

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<sup>4</sup>The period coincides with the transition from agriculture to industry (see, for example, [Becker, Hornung, and Woessmann, 2011](#)), the move from free trade to protectionism at the national level (see, for example, [Lehmann, 2010b](#)), the secularization of society (see, for example, [Becker and Woessmann, 2013](#); [Becker, Nagler, and Woessmann, 2017](#)), the introduction of a welfare state (see, for example, [Bauernschuster, Driva, and Hornung; Lehmann-Hasemeyer and Streb, 2017](#)), and the demographic transition (see, for example, [Becker, Cinnirella, and Woessmann, 2010](#)).

with high incomes are more likely to be allocated to lower classes than elsewhere. Using this insight, in a robustness check, we further aim to mitigate endogeneity concerns by using the share of voters in the first class as an instrumental variable for vote inequality. Resulting IV estimates confirm the link between vote inequality and liberal orientation.

In placebo tests, we inspect whether the “secular-religious” dimension of political orientation responds to vote inequality. Conflicts between Protestants and Catholics that culminated in the secularist policies of the *Kulturkampf* (‘culture struggle’) era in the 1870s transcended class structures and should not be reflected in the distribution of voting power. Indeed, we find that vote inequality does not predict for which type of cultural policies MPs vote.

What explains our results? The three-class franchise was designed when industrialization was in its infancy. The rise of large-scale industry in late 19th-century Prussia increased earnings and tax contributions of industrialists. This development resulted in a stronger income dispersion and therefore in higher vote inequality in industrial regions (Kuznets, 1955; Bartels, 2019) than in agricultural regions where the income of landowners remained largely unchanged. As a consequence, the highly unequal distribution of individuals across voting classes in industrial regions created a small and homogeneous first class, which was able to coordinate on electoral delegates during primary elections (*Urwahlen*) and to influence the selection of their favorite MP, who would support liberal policies, as our results show. Our result of an effect of vote inequality on liberal orientation of MPs holds for Prussia in general. In line with our expectations, we find that this effect is particularly pronounced in regions with a high share of large firms whose owners would benefit the most from liberal economic policies.

Our findings are in line with a recent literature debating the role of elites in the process of modernization and democratization. This literature presents results that are broadly consistent with the idea that elites prefer ‘liberal’ policies if those are in their own interest.<sup>5</sup>

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<sup>5</sup>The competing hypothesis holds that elites adopt policies in favor of the lower classes because of a prevailing threat of revolution by the masses (see Acemoglu and Robinson, 2000; Aidt and Franck, 2015). On the other hand, Aidt and Jensen (2017) argues that the introduction of the secret ballot in the U.S. and Europe came as a byproduct of the process of modernization due to the decline of social control and vote buying.

For example [Ashraf et al. \(2017\)](#) argue that capital-owning elites in industrializing Prussia granted more freedom to the masses to incentivize their labor effort. In Tsarist Russia, liberal nobles cooperated with the peasantry to expand public goods provision (see [Nafziger, 2011](#)). In 19th-century Sweden, a suffrage reform shifted voting power from landed elites to industrialists, resulting in higher investments in railways and structural change (see [Hinnerich, Lindgren, and Pettersson-Lidbom, 2017](#)). In Revolutionary France, the enlightened elite supported more ‘liberal’ education policies (see [Squicciarini and Voigtländer, 2016](#)).

We also contribute to a large literature that uses RCVs to study the orientation of historical parliaments (see for example [Schonhardt-Bailey, 1998](#); [Rosenthal and Voeten, 2004](#); [Heckelman and Dougherty, 2013](#)). We are not aware of work that systematically analyzes RCVs from the Prussian House of Representatives. However, inspecting a period that strongly overlaps with ours, [Häge \(2019\)](#) provides a descriptive analysis of the policy space across different Reichstag legislatures during the Bismarck era in the German Empire.<sup>6</sup> While their orientation shows similarities, the two parliaments differ in their franchise system. Thus, discrepancies in dimensionality and party affiliation maybe the outcome of a fundamentally different political process. In addition, our paper focuses on explaining rather than describing the orientation of parliament.

Earlier work that tried to explain voting behavior in the Prussian House of Representatives has so far focused on selected RCVs debating important issues. [Ziblatt \(2008\)](#) analyzed one RCV seeking to abolish the three-class franchise in 1912 and finds higher landownership inequality but not income inequality to be associated with voting in favor of preserving the three-class system.<sup>7</sup> [Mares and Queralt \(2014\)](#) analyze one RCV on the introduction of a Prussian income tax system in 1891, showing that higher landownership inequality is associated with voting for the adoption of an income tax that disproportionately burdened the industrialists.<sup>8</sup>

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<sup>6</sup>The dimensionalities of the Reichstag during the later Weimar period and the earlier Frankfurt National Assembly are depicted by [Hansen and Debus \(2012\)](#) and [Herrmann and Sieberer \(2019\)](#), respectively.

<sup>7</sup>[Lehmann-Hasemeyer, Hauber, and Opitz \(2014\)](#) show that the Berlin Stock Exchange reacted negatively to the extension of the franchise in Saxony in 1896 and 1909.

<sup>8</sup>[Debus and Hansen \(2014\)](#) use several Weimar Republic roll calls to study the voting behavior of women in parliament. [Lehmann \(2010a\)](#) analyzes several RCVs from the Reichstag during the Weimar Republic to

Thus, on the data front, we go beyond previous work by using the *universe* of RCVs in the Prussian House of Representatives during 1867–1903. We consider this data work a major contribution for several reasons: first, future research will be able to analyze any or all of the RCVs not analyzed in earlier single-RCV studies. Second, future research will be able to use previously unavailable measures of political orientation for Prussia derived with the optimal classification method based on the universe of RCVs.

## Historical context

In 1848/49, Prussia introduced a bicameral parliament, with an appointed House of Lords (*Herrenhaus*) and an elected House of Representatives (*Abgeordnetenhaus*). The constitution, imposed by the King, stipulated that the lower chamber was elected by male citizens aged 24 or older who had paid taxes in the preceding year. Additionally, the exclusion of women and of those not paying taxes is a form of unequal voting which was very common until the early 20th century. However, in Prussia, voters were allocated to three classes reflecting terciles of the total direct tax base. Votes were effectively weighted in proportion to payments of direct taxes (class-tax, classified income tax, real estate and property tax, and business tax): the upper tercile of tax payments had as many votes as the middle tercile and the lower tercile. On average, first-class voters had about 17.5 times the number of votes of third-class voters, obscuring even stronger inequality at the local ward (*Urwahlbezirk*) level. In the extreme, a single taxpayer who paid a third or more of direct taxes in a ward would have as many votes as all of the taxpayers in the lower tercile combined.<sup>9</sup>

The thresholds for allocating voters into the three classes according to their tax payments were determined at the municipality level.<sup>10</sup> Municipalities with more than 1,750 inhabitants were subdivided into wards but maintained the municipality-level tax thresholds.

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analyze how coalitions formed between MPs of different parties.

<sup>9</sup>The most prominent example was the industrialist Alfred Krupp who was the only voter in the first class in his ward. However, the pattern can also be found in rural wards where the income distribution was dominated by a local noble estate owner.

<sup>10</sup>In cases when several smaller municipalities were combined into one ward, thresholds were determined at the ward level.



The mayor was responsible for the division into wards, frequently leading to gerrymandering (Kühne, 1994a; Richter, 2017). In cases where social stratification led to sorting into city quarters, the first and second class remained unpopulated in poorer wards, whereas the first class was populated by many voters in richer wards, reducing individual voting power in wealthy city quarters.<sup>11</sup>

Elections proceeded in two stages: in stage one, the primary elections (*Urwahlen*), voters elected electoral delegates (*Wahlmänner*). In stage two, the electoral delegates elected the members of the House of Representatives. Stage one was voting by a show of hands, in other words, non-secret, and took place at the level of wards.<sup>12</sup> Each class in a ward elected the same number of delegates, ranging between 3 and 6 per ward, one per 250 inhabitants (according to the last census). At the second stage, electoral delegates from all wards in an electoral constituency met to elect between one and three MPs, depending on its population size. The three-class franchise was frequently disputed but persisted in parallel with the equal voting system of the Imperial Diet, the Reichstag, until 1913.

## The political landscape

The Prussian party landscape stabilized during the early periods of our analysis. Political fractions and parties formed during the 1860s, and gained relevance after German Unification in 1871, when the German Reichstag was established.<sup>13</sup>

Drawing on biographical information from Kühne (1994b), we report the party affil-

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<sup>11</sup>The tax reform of 1891 and the subsequent voting reform for the 1893 election introduced classification of voters according to ward-level thresholds. This led to the arbitrary upgrading of low income voters into the first and second class in poor quarters and downgrading of high income voters into the second and third class in wealthy quarters. According to the most prominent example, the Chancellor of the German Empire, Bernhard von Bülow, was required to vote in the third class in 1903, because he lived in the Reich Chancellery which was located within the ward with the highest tax base in Berlin.

<sup>12</sup>Because voting in primary elections was not secret, voters in the upper tercile, who often were employers of those in the lower terciles, held coercive power. Thus, even if we had information on voting behavior by the third class in primary elections, they would not necessarily reveal true preferences. Intimidating behavior by industrial employers, rural landlords, and public officials has been documented for elections to other contemporary German parliaments including the Reichstag and the Prussian House of Representatives (see Kühne, 1994a; Mares, 2015; Ziblatt, 2009).

<sup>13</sup>24% of Prussian MPs were members of the two parliaments at the same time for at least one year (those who were, on average 6.7 years; MPs overall, on average 1.6 years). Concerns that MPs who belonged to both parliaments were systematically different can be addressed with a dummy variable for dual membership. In unreported regressions, we find that adding such a control variable does not change our results.

iation of MPs in Table 1.<sup>14</sup> The table depicts an aggregate number of 3,658 MP-by-period observations of party affiliation between 1867 and 1903. A range of smaller factions were represented in parliament. Following the detailed discussion in Treue (1975), we classify members of smaller factions into larger party groups as indicated in columns 2 and 3. This leaves us with six main parties which were active during our period of analysis (and the residual category ‘Other’ (1.35% of observations)).

Parties offered a wide spectrum of political views, which we discuss in more detail in Appendix A.1.<sup>15</sup> However, due to the inequalities embedded in the franchise system, parties addressing social issues and redistribution such as the Socialist Workers’ Party (the later SPD) did not manage to obtain any seats in parliament until 1908.<sup>16</sup>

For the purpose of our analysis that focuses on positions of MPs, it is important to note that party discipline was far from perfect. In fact, as we will show, MPs often deviated from the party line, a key feature permitting analysis of MPs’ political orientation.

## Roll call voting

The Prussian constitution of 1850 stipulates in article 64 that the King and each of the chambers have the right to introduce bills. In the House of Representatives, legislative proposals can be introduced by the President of the chamber or by groups of at least 10 MPs. Proposals introduced by the King or the other chamber are voted on by absolute majority. To vote, the majority of members of a chamber must be present. To adopt a law, all three sides (King and both chambers) must agree, so they are fully equal in the legislative process.

Voting in the House of Representatives took several forms. When the majority on an issue was clear-cut, a count based on standing or sitting MPs established the result. RCVs

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<sup>14</sup>In some cases when party affiliation was uncertain, we used the most likely party affiliation given in Kühne (1994b). In cases of changes in party affiliation *within* a legislature, we use the initial party affiliation. Party changes within legislature are extremely rare and affect well below 1% of MPs. In cases when MPs changed party affiliations *between* legislatures, we assigned the party for which they cast most of their (roll call) votes.

<sup>15</sup>For a summary of key debates that provides further context to the political landscape of the period, see Appendix A.2 and especially Table A.2.

<sup>16</sup>In that sense, the Prussian Parliament as a whole was a conservative one. But as argued before, our interest is in the link between vote inequality and political orientation *within* the three-class franchise.

were triggered in one of two ways: first, upon request of at least 50 MPs (see [Plate, 1903](#), p. 187; §61 GO). Second, with a majority of less than 15 votes, a roll call could be requested without further support/signatures (see [Plate, 1903](#), p. 187; §58 GO). From 13th February 1875, some roll call votes were replaced by a division of the assembly (*Hammelsprung*).<sup>17</sup> This reform likely explains why the number of roll call votes declined after 1875 (see [Table A.1](#) in the Appendix). The absolute majority decided on all votes. Abstentions were typically not included in the calculation of the majority.<sup>18</sup>

Since RCVs were only called on close and/or contentious issues, they are likely to be quite selective (see [Carrubba et al., 2006](#)). This has advantages and disadvantages: RCVs are associated with highly important issues, which is a clear upside for our analysis. On the other hand, party discipline tends to be enforced more strongly in RCVs, at least in modern parliaments (see [Yordanova and Mühlböck, 2015](#)). If that was true also in historic parliaments, and if we could observe all votes in the Prussian Parliament, the actual variation in political orientation across MPs would likely be larger than what we observe using only RCVs. However, our analysis shows that there is substantial variation in political orientation *within* parties, in other words, de facto party discipline is far from perfect. This has important implications for our analysis because we capture meaningful variation in political orientation above and beyond what is predicted by party membership.

## Conceptual framework

The three class franchise was created at a time when industrialization was still in its infancy and income inequality was relatively low. Large landowners paid a sufficient amount of taxes to populate the first two classes, despite the fact that they enjoyed a range of tax exemptions and paid little taxes on land—their main source of income. Due to the rapid rise of large-scale industry in the second half of the century, industrialists started to obtain high returns to capital investment and incurred an increasing share of the total tax base

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<sup>17</sup>In the German context, MPs would (re-)enter the House via different doors to facilitate counting.

<sup>18</sup>In our analysis period, there were 4 exceptional cases where abstentions were, however, included in the count ([Plate, 1903](#), p. 180).

(see [Bartels, 2019](#)). In industrializing regions, this development lifted the new industrial elites into the first two classes, where they crowded out parts of the traditional elites. Thus, the rise of industry created an unforeseen regional concentration of high incomes and thereby a higher level of vote inequality in industrializing regions while vote inequality in agricultural regions was less affected. This description is in line with the developments first observed by [Kuznets \(1955\)](#) who also relied on Prussian income data (also see [Grant, 2002](#); [Bartels, 2019](#)).

Figures [1a](#) and [1b](#) depict the spatial variation of vote inequality and landownership inequality across Prussia. Regions with high levels of vote inequality, as measured by a Gini coefficient across franchise classes, can be found throughout Prussia, especially in more urban and industrial locations.<sup>19</sup> The spatial distribution of landownership inequality, as measured by a Gini coefficient across farm size classes, shows that landownership inequality concentrates in the more rural eastern provinces. A comparison of the two maps visually confirms our above interpretation that the mechanics of the franchise system may have provided political rents to an industrial elite and were not exclusively captured by the agrarian elite.

**Diverging interests** We assume that the new concentration of industrialists at the top of the income distribution led to the creation of a small first (and likely second) class of voters whose interests were best served by policies that allowed them to explore economic opportunities arising from decentralization, improved transport infrastructure, or tax exemptions for capital gains.<sup>20</sup> Such policies were firmly supported by MPs in parties self-identifying as ‘liberal’ in their name which propagated liberal economic policies, stressed the need for (domestic) competition, and supported the separation of church and state.

On the other hand, we assume that large landowners predominantly favor policies that protect their (socio-)economic status. In rural regions with little competition over

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<sup>19</sup>For details on variable construction please refer to the data section below.

<sup>20</sup>The assumption that industrial elites prefer liberal policies is supported by the fact that, among the three types of liberties—individual, economic and political—liberal parties in late 19th-century Prussia are most strongly associated with economic liberalism (see [Mork, 1971](#)).

entry into the upper classes, political preferences in the first and second class therefore should remain conservative. Higher levels of landownership concentration may reflect higher demand for social control due to a higher risk of expropriation for the elite (Weber, 1917; de Tocqueville, 1856). Since landowners rely on an immobile factor of production, they prefer conservative policies that sustain inequality (Acemoglu and Robinson, 2000; Boix, 2003).

So far we have highlighted the polar cases of industrialists and landowners, as if their interests were ideal points in a spectrum.<sup>21</sup> However, industrialization in agricultural regions may have similarly increased heterogeneity in political preferences. Any heterogeneity of interests within the first class of voters should lead to the election of less conservative MPs, even in initially purely agricultural areas.

**From group interests to MP orientation** In the two-stage election system, where each class voted for electoral delegates who in turn elected MPs, the electoral college commands particular power. Kühne (see 1994a, pp. 51–52) suggests that electoral delegates served as intermediaries between the electorate and MPs. Because the socio-economic background of delegates and first-class voters overlapped, the elite often succeed in electing their desired MP. Furthermore, a more concentrated economic elite will find it easier to coordinate on and influence electoral delegates, and in extension local MPs because smaller groups of homogeneous voters will find it easier to coordinate on outcomes.<sup>22</sup> Coordination costs are likely to be the lowest in the industrial urban areas because of higher population density, better transport infrastructure and low information costs (see Kühne, 1994a, pp. 51–52). We therefore expect a stronger link between vote inequality and liberal voting in areas with industrial elites.

But there is another reason why the interests of industrial elites may have translated

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<sup>21</sup>Note that the famous ‘Marriage of Iron and Rye’ (see Schonhardt-Bailey, 1998; Lehmann, 2010b) describes a coalition in the German Reichstag with its equal voting system, and not in the Prussian Parliament. This coalition of industrial elites and large landowners in the German Empire agreed on the introduction of protectionist tariffs in 1879 in the German Reichstag. External affairs such as tariff setting were exclusively dealt with in the national parliament, the Reichstag.

<sup>22</sup>Kühne (see 1994a, p. 52) describes long-serving electoral delegates as de facto ‘patricians’, underlining their influence.

into a majority for liberal MPs in their constituencies: a strategic complementary between the interests of first and third class voters. It is often argued that during the second phase of industrialization, roughly corresponding to our period of analysis, industrial elites may have formed a strategic coalition with the third class to support policies that are mutually beneficial for capitalists and workers (also see Galor and Moav, 2006; Doepke and Zilibotti, 2008; Llavador and Oxoby, 2005), for example free public schooling and freedom of occupational choice that benefited both industrialists and workers.

In summary, we expect higher vote inequality to be associated with the election of MPs with more liberal viewpoints, especially in districts with large-scale industry.

### **Results from selected RCVs**

Before we analyze the relationship between aggregate measures of political orientation and vote inequality below, we present examples of specific roll calls in which vote inequality explains the voting behavior of MPs.<sup>23</sup> For this regression analysis, we select five RCVs that meet the following criteria: substantial relevance for the Prussian economy, substantial divide between liberal and conservative positions, sufficiently narrow margin so that the result may be altered by reasonable changes in inequality, and broad coverage of topics and election periods.

Table 2 presents results from regressions of an indicator variable (yea/nay) on a Gini index of vote inequality for each of the five RCVs. Results reflect a linear probability model where vote inequality affects the probability to vote ‘yea’. In each RCV, we determine whether a ‘yea’ vote reflects liberal or conservative position by the fact that the majority of MPs from conservative or liberal parties voted for the position (see top of the table for positions). Throughout, we control for a Gini index of landownership inequality, the most important aspect of the political economy according to the literature.<sup>24</sup> A more detailed summary of the parliamentary debates surrounding each RCV can be found in Appendix B.

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<sup>23</sup>For an overview of the frequency of all RCVs by content and election period, see Table A.2 in the Appendix.

<sup>24</sup>In Table B.1 in the Appendix, we show that results are robust to the inclusion of a larger set of control variables.

Across the five roll calls, we find that MPs from districts with a higher vote inequality have a higher probability of voting for the liberal position. Column 1 shows results from a RCV on the King's bill to re-introduce school tuition fees. Since 1850, the Prussian constitution stipulated that public primary schooling was free of tuition fees so that municipalities were required to finance schooling from taxation or other local sources. In 1869, the King proposed to revoke free tuition and was defeated by a liberal majority.

Column 2 shows results from a RCV within the debate about the major administrative reform of 1872 (*Kreisordnung*) that effectively ended police authority of the landed nobility. The amendment to the bill, introduced by a liberal MP, proposed that the newly introduced role of a public official (*Amtshauptmann*) should be filled following a selection by the local administration instead of an appointment by the King. This amendment about the decentralization of power passed with a liberal majority.

Column 3 shows results from a RCV on section 1 of the Trade Ministry's bill that allowed the state to buy private railroad companies. The bill passed with a conservative majority and led to the nationalization of railroads in 1880. In Table B.1 in the Appendix, we show that vote inequality is significantly associated with voting against the bill once a larger set of control variables is included.

Column 4 shows results from a RCV in the context of the debate about the famous income tax reform of 1891 (see Hill, 1892). MPs voted on an amendment to section 16 of the bill regarding the taxation of income from investment in joint stock companies (for example dividends). This conservative amendment requesting a 3.5 percent deduction passed whereas a competing liberal amendment requesting a 4 percent deduction was defeated by a conservative majority.

Column 5 shows results from a RCV on a proposal to construct the Dortmund-Rhine segment of a canal connecting the rivers Rhine and Elbe, introduced by the Kaiser in 1899. Conservatives opposed the canal construction and defeated the bill because it would be detrimental to agrarian interest and would foster the import of cheap grain from the United States.

The findings allow us to discuss a thought experiment, in which we can understand how policies would have changed if vote inequality had been different (*ceteris paribus*). The results imply that when increasing vote inequality by one standard deviation (0.039 Gini points), the probability of voting for the liberal position increases by up to 20 percent. In two out of five RCVs such a change in inequality would have tipped the balance towards adopting the more liberal policy, in two cases the liberal majority would have been even larger, and in one case the result would remain unchanged.

## Model and data

To estimate the relationship between the political orientation of MPs and the vote inequality in their electoral constituency, we generate a dataset in which the unit of observation is an MP, or more precisely, MP-by-constituency. The reason for the subtle distinction is that a small number of MPs (104 cases) represent different constituencies over their career.<sup>25</sup> Our results are robust to using MPs who represent the same district throughout all of their career. We employ the following standard OLS framework:

$$Pol\ Id_{ic} = \alpha + \beta\ Vote\ Ineq_c + \gamma\ X'_c + \zeta\ Z'_i + \epsilon_{ic} \quad (1)$$

where  $Pol\ Id_{ic}$  constitutes a measure of political orientation of an MP  $i$  in constituency  $c$ . We use the optimal classification (OC) algorithm (described in the next section) to construct continuously valued scores describing the voting behavior of MPs across all RCVs in which they participate. In fact, the OC algorithm will give us two OC scores, one capturing a liberal-conservative dimension, and one capturing a secular-religious dimension.<sup>26</sup>  $VoteIneq_c$  is our measure of vote inequality, calculated from the distribution of voters

<sup>25</sup>MPs switching constituencies throughout their career may be a highly selected group that strategically ran in various electoral constituencies. In (unreported) regressions we find that constituency switching is unrelated to vote inequality and other constituency characteristics.

<sup>26</sup>The two separate OC scores as outcome variables give rise to a two-equation system. We will generally assume that the standard errors are uncorrelated across equations. In fact, since the correlation between the two dimensions is only about 2%, this seems reasonable. However, using the potentially more efficient seemingly unrelated regression (SUR) method that allows standard errors to be correlated, we find very similar results.



across the three classes.  $X'_c$  is a vector of constituency-level characteristics,  $Z'_i$  is a vector of individual-level MP characteristics.

## Vote inequality

Vote inequality is a Gini coefficient calculated from the distribution of voters across the three classes. Using the fact that each class contributed exactly one third to the tax base, we calculate the Gini coefficient based on the number of voters in each class. Notice that vote inequality assigns the same power to each voter in the same class so that we do not require information about the complete, individual-level tax contributions in a constituency.<sup>27</sup>

An individual qualified for the first class by crossing a threshold that was determined by last year's tax payments of all voters in a municipality. The threshold is therefore determined by *local* conditions and not by a national classification. This consideration helps to alleviate concerns regarding endogeneity in vote inequality. The classification of voters is strongly affected by the individual with the highest income in a municipality, leading to extreme heterogeneity in the threshold determining inclusion in the first class.

Two examples may clarify the arbitrary nature of classification as discussed by contemporaries (Königlich Preußisches Statistisches Bureau, 1861–1904, vol. 2, p. 109). In the election of 1861, in a ward in the county Schleiden (province Rheinland) the three voters with the highest tax contributions paid 270 thalers each.<sup>28</sup> Two of them were allocated to the first class whereas the third was allocated to the second class,<sup>29</sup> where he had to share his vote with ten other tax payers who jointly paid only 260 thalers in taxes. In a ward in the county Belgard (province Pomerania) the first class was populated by two voters paying 364 and 237 thalers in taxes respectively, the second class was populated by another two voters paying 213 and 189 thalers in taxes, while the third class was populated by 160

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<sup>27</sup>Different from a measure of income inequality, vote inequality ignores within-class variation in income. Most likely vote inequality is correlated with income inequality because variation between income groups is a substantial part of the overall variation in incomes. Since this paper is interested in the franchise system, we use the vote inequality Gini that exactly captures the different degree of representation enjoyed by the three classes.

<sup>28</sup>Based on the classified income tax of 3 percent at the time, their income must have been 9,000 thalers.

<sup>29</sup>The source does not clarify how one of the three voters with identical tax contribution of 270 thalers was selected to go into the second class, as ties were not regulated in the electoral law.

voters with one paying 102 thalers and the remaining 159 voters together paying 396 thalers in total. These examples show that the local economic elite did not, per definition, end up being eligible for voting in the first class. Put differently, small differences in income at the top could move individuals across income classes, with substantial consequences for individual voting weights and power.

Across Prussia, on average, the threshold to become a first class voter was a payment of 56 thalers in taxes. However, regional variation was extreme: the minimum threshold was 7 and the maximum threshold was 12,496 thalers. If an individual tax payer contributed more than half of the total local tax base, the second class even remained unpopulated. Given that the local distribution of incomes was decisive, variation in residential location of high-income earners led to huge heterogeneity, especially in urban areas. Before a reform in 1891, municipalities first determined tax payment thresholds based on the city-wide population of voters, before subsequently breaking the electorate into wards. In wards with many high income voters, the first class was crowded, leading to a relative devaluation of a vote. In poor wards, the first and sometimes even the second class remained empty if none of the voters crossed the city-wide threshold.

The above examples imply that there is strong heterogeneity in the distribution of voters across classes and that the allocation of voters to classes is beyond the power of the individual. In our standard regression framework, we aim to exclude remaining systematic heterogeneity by conditioning on a substantial set of control variables. In a robustness check, we use an instrumental variable approach that exploits heterogeneity in the size of the first class, exploiting the fact – described above – that the richest individual’s income was decisive for its size.

The earliest available measure of vote inequality for *all* constituencies of post-1866 Prussia is from 1893 and reported in [Königlich Preußisches Statistisches Bureau \(1864–1905, vol. 17\)](#).<sup>30</sup> Our analysis will obviously test robustness of the results using the distribution of voters across classes from the election of 1861. These data are less prone to potential

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<sup>30</sup>The data was collected just after the 1891 tax reform changed the distribution of voters across classes in the three-class franchise.

reverse causality but are unavailable for the new provinces annexed by Prussia after 1866, that means we lose more than 350 MPs.

## Constituency characteristics

Constituency-level control variables are aggregated from county level provided by [Galloway \(2007\)](#) and [iPEHD \(Becker et al., 2014\)](#). Electoral constituencies comprised at least one, but typically several (administrative) counties (*Kreise*). Put differently, the approximately 500 Prussian counties are nested in 256 electoral constituencies, allowing us to map aggregated county-level census data to MPs representing these constituencies.<sup>31</sup> [Table C.1](#) in [Appendix C](#) presents summary statistics.

Following the literature ([Lehmann, 2010b](#); [Mares and Queralt, 2014](#); [Ziblatt, 2008](#)), we include a set of standard explanatory variables for MP voting behavior in the Prussian House of Representatives in our vector of constituency characteristics.

The most important control variable is landownership inequality capturing [Gerschenkron's](#) idea of a link between the interests of large landowners and conservative voting.<sup>32</sup>

Other control variables include the industrial employment share, the urbanization rate, the share of Protestants, the linguistic fractionalization, the share of the population that lives in their municipality of birth, as well as the literacy rate to capture heterogeneity in the available stock of human capital.<sup>33</sup> These indicators measure differences in development, cultural heterogeneity, and structural differences across regions.

The period under analysis is a critical juncture in the transition from agriculture to industry. At the beginning of the period, slightly less than half of the population was based in agriculture. At the end, agricultural employment made up merely one third of the labor force. However, these structural changes may be an outcome of the political process and therefore prone to concerns of reverse causality. Thus, in our regressions we

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<sup>31</sup>Unfortunately, since MPs do not represent a county, we cannot match MPs to specific counties, even though our data is available at this level.

<sup>32</sup>The correlation between vote inequality and landownership inequality is approximately 69%.

<sup>33</sup>For further information see [Appendix C](#).

include variables that are measured closest to the starting point of our analysis in 1867.<sup>34</sup>

If an MP represents the average individual in his constituency, we expect local conditions to explain a large part of the variation of MPs' voting behavior. However, if MPs represent the local elite but also act in their own interest, individual characteristics may explain a lot of the variation. We can probe this by also controlling for MP characteristics.

## MP characteristics

MP characteristics drawn from Kühne (1994b) vary at the individual level and can be broadly divided into biographic characteristics and political characteristics. Table C.2 in Appendix C presents summary statistics.

**Biographic characteristics of MPs** Biographic characteristics include the occupation of an MP as reported in the parliamentary minutes. We coded occupations to match the following six categories: public administration, clergy, industry, agriculture, education, and services.<sup>35</sup> Roughly one-third (789) of the MPs in the data set report agriculture, in other words, landownership, as their main occupation. Landowners have a higher probability of being affiliated with conservative parties.<sup>36</sup> On the other hand, industrialists predominantly select into liberal parties.<sup>37</sup>

The religious denomination of MPs roughly reflects the distribution within the population. In 1880, the population of the average Prussian constituency was composed of 67.2% Protestants, 31.4% Catholics, and 1.1% Jews. Protestants are slightly over-represented in parliament, while Catholics and Jews are slightly under-represented.<sup>38</sup> Two thirds of the Catholic MPs are affiliated with the Centre party and the Polish minority party. We expect

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<sup>34</sup>Using initial differences excludes some (but not all) of the most pressing endogeneity concerns, which is why in Table E.1 in the Appendix, we show that results also hold in the smaller sample of Prussia in its pre-1867 borders, where we can use control variables from the censuses in 1849 and 1861.

<sup>35</sup>Note that MPs might have multiple occupations and can be captured in several categories.

<sup>36</sup>Within the Conservative party ca. 55% of the MPs are landowners; 38% of the Free Conservatives are landowners, but only 21% of National Liberals and 24% of Left Liberals report such an occupation.

<sup>37</sup>Left Liberals: 19%, National Liberals: 18%, Other Liberals: 15%, Conservatives 3%, Free Conservatives: 8%, Centre Party: 9%.

<sup>38</sup>This pattern remains largely stable over time, once MPs from the early election periods, where denomination is often unknown, drop out of parliament.

them to lean towards policies that support a strong position of the church. Additional attributes that are available from MP biographies include nobility status, academic titles, residence in the electoral constituency, and retirement status.<sup>39</sup>

**Political characteristics of MPs** Further variables capture the parliamentary engagement of an MP and the context in which he was elected. RCV participation measures the share of the total RCVs in a period the MP participated in.<sup>40</sup> The electoral margin captures the strength of the mandate and whether the MP seat was strongly contested.<sup>41</sup> The electoral turnout captures the level of representation (see, for example, [Jackman, 1987](#)).<sup>42</sup> The count of the number of MPs to be elected in the constituency captures electoral competition.<sup>43</sup>

In robustness test, we include measures of party affiliation as control variables. These are not regressors like any others: by virtue of parties' ability to draw like-minded representatives to stand for them, we expect party affiliation to absorb a substantial part of the variation in OC scores.

## Measuring political orientation using Optimal Classification

To understand whether the franchise biased parliamentary voting patterns, we inspect MPs' overall voting behavior instead of voting in single roll calls or changes in voting behavior over time.<sup>44</sup> This requires us to classify all votes into categories that reflect a political

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<sup>39</sup>The variable 'noble title' is unity if the affix of an MP includes the term *Freiherr, Graf, Baron, Edler Herr, Prinz, von, vom, am, aus dem, de, du, van, or zur*. The variable 'academic title' is unity if the title of an MP includes the term *Dr. or Dipl. Ing.*

<sup>40</sup>This variable may be related to both representation and political orientation.

<sup>41</sup>The literature (see, for example, [Fowler, 2005](#); [Fowler and Smirnov, 2005](#)) argues that MPs are more likely to enforce extreme versions of their political agenda if the margin of victory is large.

<sup>42</sup>Importantly, our turnout measure reflects participation of electoral delegates (*Wahlmänner*) in the second stage of the electoral process and not the turnout of voters in the primary elections (*Urwahl*). The turnout in this second stage is about 90% on average and remains stable across periods. For the smaller sample of constituencies in the pre-1867 borders, we also have information on the turnout in the primary elections by class. As expected, turnout increases in the level of representation (first class: 57%, second class 44%, third class 24%). However, neither of these measures is significantly related to political orientation.

<sup>43</sup>Prussian constituencies had between one and three MPs. Multi-member constituencies have been argued to foster electoral competition and broader coalition building, leading to more redistributive policies ([Persson and Tabellini, 2004](#)).

<sup>44</sup>Since the franchise system was not subject to change during our period under investigation, we do not expect major changes in voting behavior over time. Neither procedural rules on roll call voting nor on plenary

orientation. Manually classifying votes from 329 roll calls into liberal and conservative (or into secular and religious) leanings is a task that would be prone to many arbitrary decisions.

Simply reading minutes of parliamentary debates preceding RCVs, we could gain a nuanced impression of speakers positions but still incorrectly classify MP positions because debates do not reveal underlying rationales of voting choices. Furthermore, classification requires the strong assumption that all MPs perceive the political dimension underlying a vote in the same way. Even a selected subset of RCVs may lead to erroneous classification. Suppose we selected a set of RCVs that evolve around secular-religious motives during the *Kulturkampf*, including a vote on a bill that exempts priests from punishment for reading mass and administering the sacraments. It will be hard for us to classify whether an MP's vote is motivated by his allegiance to the Pope, his support of Bismarck, or his liberal orientation that rejects state intervention. Votes may indeed reflect multiple motives and dimensions that are obscured. Manually determining how to code 'yea' or 'nay' votes in any RCV requires us to make assumptions about the position of all MPs in this matter.

To avoid the pitfalls of 'manual' classification, political science has developed scaling methods that are widely used in the analysis of parliamentary voting. In our main approach, we follow this literature and analyze RCVs using the non-parametric optimal classification (OC) method introduced by [Poole \(2000\)](#).<sup>45</sup> Similar to a principal component analysis, the OC method extracts one or more latent variables from the votes that are fed into the algorithm. This approach is superior to a researcher's classification because decisions will not be biased by prior knowledge (and interpretation) of the content of the RCVs or the party affiliation of MPs. The algorithm does not rely on an ex ante classification but allows an ex post interpretation of the latent dimensions it uncovers.

OC is a non-parametric scaling procedure that classifies a matrix of yea and nay

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agenda setting experienced fundamental changes during the period.

<sup>45</sup>This methodology is related to the W-NOMINATE method that is frequently used in economics and has been adopted by the media when discussing the U.S. parliament. According to [Rosenthal and Voeten \(2004\)](#), the OC method is superior to parametric methods such as W-NOMINATE, when analyzing a multi-party setting such as ours.

votes.<sup>46</sup> After generating an ‘agreement matrix’ between MPs, the algorithm extracts coordinates that locate MPs within a policy space using a pre-specified number of dimension. For simplicity, suppose that voting in parliament is exclusively driven by one dimension – liberal or conservative motives. The OC method interprets votes of MPs as revealed preferences from a choice between a proposed policy and the status quo. The underlying assumptions are that legislators have Euclidean preferences defined over the policy space and that they vote sincerely for the alternative closest to their ‘ideal point’.<sup>47</sup> Since neither the exact position of the proposed policy nor the status quo is known, we only observe two positions reflecting ‘yea’ or ‘nay’ votes. These two positions can be intersected by a cutting line separating groups of legislators with different positions. To illustrate this procedure, in Appendix Section D, we show the policy space and the cutting lines for the five selected RCVs discussed earlier. Using a larger number of RCVs allows us to estimate MP positions more precisely due to varying distances between ideal points, proposal, and the status quo. The OC algorithm will produce a rank ordering of MPs and vectors of relative distances that constitute the latent dimensions.

## OC results for the Prussian parliament

Our main analysis pools all 329 RCVs across ten election periods providing us with substantial variation in political orientation *within* parties. Each MP representing the same constituency during one or several election periods constitutes one observation, similar to the ‘fixed career model’ described in [Asmussen and Jo \(2016\)](#). The various issues voted upon over this long period are such that party discipline cannot be always imposed, giving us substantial within-party variation in political orientation. Pooling across periods also reduces the impact of outliers, and the resulting ideal points are more likely to represent

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<sup>46</sup>For a more technical discussion, see [Poole \(2000\)](#).

<sup>47</sup>In fact, following [Hix and Noury \(2016\)](#) we should call these ‘revealed positions’ rather than ‘ideal points’ to acknowledge that their position is not solely driven by personal preferences but also by institutional factors such as the electoral system. The Prussian parliament is akin to a presidential system in which the political leader (Bismarck) builds issue-by-issue coalitions. Consequently, in line with models of spatial voting behavior, we can assume that the Prussian parliament resembles a floor agenda model without restrictions to agenda setting ([Hix and Noury, 2016](#)).

an unbiased measure of constituency-level policy preferences.

However, some MPs switched their party affiliation over time.<sup>48</sup> While we assign party affiliation based on the party for which an MP casts the highest number of votes, this ignores the possibility that party switches might reflect genuine movement in some MPs' political orientation. However, in [Becker and Hornung \(2019\)](#), we show that findings are qualitatively similar when inspecting election periods separately, thus allowing for party switching and relaxing restrictions on legislators' ability to move within the policy space.

We identified roll calls by working through the universe of parliamentary minutes. For all RCVs, minutes list the name of MPs and record 'yea' and 'nay' votes as well as abstentions and absence.<sup>49</sup> We coded these votes and matched MPs by name and period of activity to the [Kühne \(1994b\)](#) dataset that provides us with biographical information and constituency identifiers. The quality of the match was manually checked using all available historical sources.

Table 3 presents descriptive information generated when scaling the RCV data with the OC method. The analysis is limited to legislators who voted in at least 15 RCVs and excludes extremely lop-sided votes where the losing side consisted of less than 2.5% of MPs.<sup>50</sup> These criteria apply to 328 of the 329 RCVs and to 1903 of 2291 MPs, amounting to a total of 107,282 individual votes (58,540 yea and 48,742 nay). Abstentions and absence during an RCV are coded as missing values. Similar to [Häge \(2019\)](#) who analyzes the Reichstag during the Bismarck era, we find abstentions to be rare (487 votes) but absenteeism to be substantial.

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<sup>48</sup>61 MPs switch between parties in our dataset. In (unreported) regressions we find that party switching is unrelated to vote inequality and other constituency characteristics.

<sup>49</sup>We are confident that we identified all RCVs in the period because the voting sequence of MPs systematically rotates over the alphabet restarting with the letter A after each election or recess. This procedure helped us ensure that we are not overlooking any RCVs. From 1883, RCVs are also listed in the index of the parliamentary minutes.

<sup>50</sup>Changing the minimum vote requirements comes with a trade-off between the precise estimation of ideal points and the number of MPs who cast a sufficient number of votes. The choice of a minimum of 15 RCVs follows [Häge \(2019\)](#) who analyzes RCVs in the Reichstag. He also notes that although the number of roll calls in each term is relatively small compared to many contemporary legislatures, they are generally very informative. In fact, the average margin between yea and nay votes in our sample is 70 votes (21.6 percent) and therefore substantially closer than, for example, in the U.S. House of Representatives, where it was 35 percent during the period 1867–1903 (own calculation based on RCVs listed in [voteview.com \(Lewis et al., 2020\)](#)).



Table 3 also provides information on the correct classification of votes (columns 5 and 7), the Average Proportional Reduction in Error (APRE) (columns 6 and 8),<sup>51</sup> and eigenvalues (columns 9 to 11) comparing a one-dimensional and a two-dimensional case. We correctly classify 89.4% of votes when assuming one dimension and can increase the accuracy of classification to 96% when adding a second dimension. Comparing APREs, we find that two-dimensional scaling substantially improves the error reduction by approximately 17 percentage points. Comparing eigenvalues, we find that the third is considerably smaller suggesting that parliamentary debates may be sufficiently described by two dimensions.<sup>52,53</sup> We label the two dimensions of  $Pol Id_{ic}$  the liberal-conservative and secular-religious dimensions.

### The policy space for the Prussian parliament

The output of the OC algorithm, the two dimensions of an MP’s political orientation,  $Pol Id_{ic}$ , are presented in Figure 2a. Assuming a two-dimensional policy space, the OC procedure generates two coordinates that reveal the position of each MP within a unit circle, in other words, coordinates assume values between  $-1$  and  $+1$ . Colors and letters indicate party membership as presented in Table 1. We find that MPs belonging to the same party are spatially clustered, reflecting the fact that parties are groups of like-minded representatives. Using information about the political landscape in Prussia outlined earlier, we

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<sup>51</sup>(Noel, 2013, p. 78) gives the following intuitive definition of the APRE: “The APRE compares the error rate from a naïve model, in which we have no information about how people decided except the margin between supporters and opponents, with the estimated model, in which we have the ideal point. In the naïve model, we assume everyone is with the majority, and we are wrong on everyone in the minority. [...] The Proportional Reduction in Error for each vote is what percentage of the errors from the naïve model are eliminated with the ideological dimension, and the APRE estimates the reduction across all votes.” Formally:  $\sum_{j=1}^n \frac{(\text{minority votes} - \text{classification errors})_j}{(\text{minority votes})_j}$ .

<sup>52</sup>Eigenvalues are computed on the basis of the so-called agreement matrix between representatives, in other words, the square matrix where entry  $(i, j)$  is the fraction of roll call votes where representatives  $i$  and  $j$  vote the same way. The faster the eigenvalues fall off, the stronger the evidence that only a small number of dimensions is required to describe systematic variation in voting patterns.

<sup>53</sup>Figure E.1a in the Appendix shows the corresponding “scree plot” following Cattell (1966). Figure E.1b presents the cutting lines that show how different roll calls bring together different groups of representatives on the Yea or Nay sides. The angle of the crossing lines with respect to the horizontal axis gives us an indication of whether the issues voted on are more divided along the first dimension or along the second dimension. Another way to present the same information is by virtue of Figure E.1c which shows a histogram of cutting line angles.

interpret the two dimensions as a liberal-conservative and a secular-religious dimension, reflecting the main cleavages between parties in parliament. Even though parliament did not capture the full spectrum of political views (remember the absence of Social Democrats), it included parties advocating ideas of liberalism as outlined in the introduction and parties advocating conservative views with preferences for a strong monarchy and adherence to the feudal class structure. At the same time, parliament included parties advocating conflicting views about secularization and preservation of the church's power.

Since the OC algorithm is agnostic about the spatial orientation of its output, we *anchor* the policy space using leaders of the Conservative and Centre parties.<sup>54</sup> To guarantee that the two dimensions and the corresponding MP-level positions exactly reflect liberal-conservative and secular-religious cleavages, we *rotate* the policy space to align the centroid of the Conservative Party with the horizontal axis and the centroid of the Centre Party with the vertical axis (see Figures 2b and 2b).<sup>55</sup> Both rotations look very much alike.

On the conservative-liberal axis (see Figure 2b), Left Liberals (yellow F) and National Liberals (green N) are almost exclusively located in the western regions of this axis. Free Conservatives (grey R) and Conservatives (blue K) are positioned in the eastern part of the policy space. Members of the Centre Party (red Z) and of minority groups (brown M) are divided between liberal and conservative positions but many lean toward moderate conservative positions. On the secular-religious axis, while Centre Party MPs exclusively locate on the religious side of the secular-religious axis, MPs from the National Liberals and Free Conservatives can be found in the secular southern region. However, since the Conservative Party was divided over secularization and 'orthodox' Protestant MPs sympathized with the position of the Centre Party, we find considerable variation across liberal

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<sup>54</sup>Our choice of the anchors in each dimension is guided by the research question (MPs standing for a certain 'orientation'), the length of tenure in parliament, and the number of votes cast in roll calls (for representativeness and stability of estimation). We use one MP from the Conservative Party (Friedrich von Wedell-Malchow) to define a "conservative" orientation of the policy space, and one MP from the Centre Party (Ludwig Windthorst) to define the "religious" orientation of the policy space.

<sup>55</sup>Rotating the policy space is a common practice to ease graphical presentation and does not affect the political orientation of MPs within parties or the relative position of MPs to each other (see, for example, Häge, 2019).

and conservative parties.<sup>56</sup>

We confirm the graphical observations of a clear ranking of parties along the liberal-conservative spectrum in OLS regressions presented in column 1 of Table 4. Here, we regress MP's positions in the liberal-conservative dimension on their party affiliation, using the Conservative Party as omitted category. The results thus depict the relative position of all other parties. As expected, the coefficient on Left Liberals reveals the largest distance to MPs from the Conservative Party, followed by the National Liberals. Similarly, in column 2, coefficients on Free Conservatives and National Liberals reveal the largest distance to the (omitted) Centre Party along the secular-religious dimension. As expected, the mostly Catholic and pro-religious members of minority parties hold positions that are closely aligned with the Centre Party in this dimension. Note that the  $R^2$  in these regressions is 0.62 and 0.47 respectively, in other words, while party affiliation matters for MPs' position, there is still substantial within-party variation left.

## Results and interpretation

In this section, we will use  $Pol Id_{ic}$ , the two dimensions of an MP's political orientation derived from the OC method (displayed in Figure 2), as dependent variables in the regression framework described by equation 1. In all specifications we cluster standard errors at the level of constituencies.

### Main results in the liberal-conservative dimension

Table 5 presents results from OLS regressions using the liberal-conservative dimension as dependent variable. Column 1 shows the most parsimonious model explaining liberal-conservative political orientation with two measures of inequality—vote inequality and landownership inequality. Vote inequality is negatively associated with political orientation. MPs from constituencies with a more unequal distribution of voters across classes

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<sup>56</sup>To address the concern that the distribution of MPs across the policy space is driven by specific periods that constitute outliers, we executed a 'jackknife' analysis, that means consecutively dropping each period to probe sensitivity. Results of this procedure are presented in Figure E.2 in the Appendix.

vote significantly more for liberal policies. This central finding qualifies the predominant assumption in the literature that the franchise system produced conservative policies. While it is true that the three-class franchise kept Social Democrats at bay until 1908, higher vote inequality is associated with more liberal policies. In line with the widely held belief, however, we find MPs from constituencies with a more unequal distribution of landownership to have a more conservative orientation.

Subsequent columns add control variables that potentially affect the political orientation of MPs. By including them, we try to rule out that the effect of vote inequality is driven by economic development. Furthermore, we include several measures of cultural heterogeneity that are expected to correspond to secular-religious voting much more than liberal-conservative voting.<sup>57</sup>

Columns 2 and 3 add the industrial employment share and the urbanization share to capture structural differences in the economic development of regions. More industrialized and urbanized constituencies are expected to be more progressive and thus prefer more liberal politics. Indeed, both variables are negatively associated with political orientation. At the same time, more industrialized/urbanized areas are more unequal. It is therefore not surprising that controlling for these variables, the magnitude of the inequality coefficient is reduced (but remains highly significant).

Columns 4–6 sequentially add the share of Protestants, the linguistic fractionalization, and the share of non-migrants to the model. Religious denomination and language heterogeneity pick up differences between the political orientation of Catholic regions in the West, the central Protestant regions, and the Slavic regions in the East. Since Protestant regions are more developed than Catholic regions, conditional on industrialization and urbanization, this variable may predict a more liberal orientation. Linguistic fractionalization

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<sup>57</sup>While cultural factors such as religion and linguistic fractionalization are slow moving indicators that change only in the long run, development indicators such as urbanization and the size of the industrial sector can adjust more quickly and may therefore be endogenous to the political process. That being said, we are aware of the fact that some of our control variables are measured concurrent to political orientation and may be considered ‘bad controls.’ To address this issue, in Table E.1 in the Appendix, we show that results also hold in the smaller sample of Prussia in its pre-1867 borders, where we can use control variables from the censuses in 1849 and 1861, which pre-date our outcome variables.

is highest in the Slavic regions of Prussia that may oppose the national-conservative policies of Bismarck. A higher share of the population living in their municipality of birth is expected to reflect lower levels of openness and a more conservative orientation. However, these factors do not seem to play an important role in affecting liberal-conservative voting once a variable accounting for the literacy rate is included in column 7. The literacy rate is a significant predictor of conservative voting. This finding may be explained by the fact that conservative parties appealed to a more literate Protestant electorate. The literacy seems to capture conservative Protestants better than the overall share of Protestants which becomes significantly negative upon joint inclusion.<sup>58</sup>

Across all specifications, we find vote inequality to be systematically associated with more liberal voting. In terms of magnitude, the coefficient on vote inequality in column 7 means that a one standard deviation increase in the Gini index is associated with a 0.177 standard deviation decrease in conservative orientation.<sup>59</sup> In other words, moving an MP from a constituency at the 10th percentile ( $\sim 0.47$ ) of the vote inequality distribution to the 90th percentile ( $\sim 0.58$ ), he will shift his orientation by 19.7% toward the liberal maximum.

### **Placebo test in the secular-religious dimension**

Table 6 presents results from a placebo test in which we use the secular-religious dimension as a dependent variable. We expect this dimension to be uncorrelated with vote inequality because the process of secularization in Germany transcended class structures and should not be reflected in the distribution of voting power. Indeed, we find that the correlation between vote inequality and secular-religious orientation is entirely spurious. While vote inequality seems to predict more secular voting behavior in columns 1–3, the coefficient is close to zero, once the share of Protestants in the constituency is accounted for. Not surprisingly, the share of Protestants is itself a strong predictor of secular voting behavior.

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<sup>58</sup>This relates to the reasoning by Boppert et al. (2013) who find that differences in educational outcomes between Protestants and Catholics in late 19th century Switzerland are most pronounced in conservative milieus.

<sup>59</sup>Vote inequality has a standard deviation of 0.039, liberal-conservative political orientation has a standard deviation of 0.395. Using the coefficient reported in column 7, the magnitude can be calculated as  $\frac{0.039 \cdot 1.793}{0.395} = 0.177$ .

This finding reflects the strong cleavage between Centre party MPs elected in the Catholic regions and MPs from Protestant regions that strongly favored a separation of church and state.

Furthermore, higher linguistic fractionalization is associated with more secular voting. In this dimension, linguistically more heterogeneous regions encompass a larger share of minorities that may indeed favor policies that restrict a church that caters only to one religious denomination. In sum, this placebo test finds that the secular-religious orientation, which arguably transcended economic heterogeneity, is unrelated to vote inequality.

### **Robustness tests**

This subsection tests the robustness of our findings to potential alternative explanations and confounding factors. Robustness tests are presented in Table 7, where Panel A displays results for the liberal-conservative orientation and Panel B displays results for the secular-religious (placebo) orientation. For the sake of clarity in presentation, this table does not show coefficients of the control variables. We mention some of them below and will particularly focus on Panel A.

Column 1 repeats the baseline specification (column 7 from Table 5) before adding a control for per capita payments of direct taxes to the model in column 2. By doing so, we address the concern that vote inequality is a mere proxy for the average income in an electoral constituency.<sup>60</sup> Results on vote inequality remain qualitatively unchanged but coefficients are slightly larger.

Column 3 adds a control for social uprisings that took place in a constituency between 1815 and 1867. This measure captures a threat of socially motivated unrest that loomed strongly during this period. The threat of social democracy may have pushed MPs from electoral constituencies with higher vote inequality toward more liberal voting. While we indeed find that MPs from constituencies with more protests vote slightly more liberally,

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<sup>60</sup>Unfortunately, data on direct taxes payments are unavailable for constituencies that consisted only of one city (*Stadtkreise* = urban counties), which is why we lose these observations. The finding is robust to using a pre-1866 measure of income tax per capita which is observed for all constituencies, but not for the provinces annexed after 1866.

our main result remains unchanged.<sup>61</sup>

Results may be driven by observable characteristics of the individual MPs. If the peculiarities of the franchise system selected a certain type of MP into office, this would constitute a mechanism through which vote inequality might affect political orientation. However, if MP characteristics reflect characteristics (and preferences) of the local elite, these may determine both inequality and political orientation and present a threat to identification. In column 4, the coefficients on vote inequality and landownership inequality are substantially reduced but the results remain qualitatively unchanged. As expected, conservative orientation is predicted by MPs holding occupations in public administration and agriculture, by noble status, and by Catholic denomination. These variables also explain a large share of the variation as measured by the R-squared.

Results displayed in column 5 show that adding 35 administrative-district (*Regierungsbezirk*) fixed effects leaves the relationship of interest barely affected while the coefficient on landownership inequality is substantially reduced. Thus, broad regional disparities between the agricultural east and the industrial west do not explain the relationship between vote inequality and political orientation.

In Table 4, we have shown that party affiliation is a strong predictor of voting behavior. Our subsequent empirical framework has exploited variation across parties ignoring affiliation. Indeed, we think that party affiliation reflects much of the differences in political orientation that we are actually interested in. Controlling for party affiliation thus only allows us to exploit within-party variation in political orientation which, by definition, is much more limited. Nevertheless, column 6 shows that, even conditional on party affiliation, MPs vote significantly more for liberal policies when elected in a constituency with a higher vote inequality.

As indicated before, our main measure of vote inequality refers to 1893, the first time it is available for post-1866 Prussia. We test robustness of the results using a Gini index of vote inequality from 1861 for the subset of constituencies reflecting the contemporary

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<sup>61</sup>This finding is unaltered by using protests from the period 1867 to 1903 as the control variable.

Prussian borders. Column 7 re-estimates the model with individual-level controls in the smaller sample of 1861 constituencies. Column 8 shows that results are barely different from the findings in column 7 when using the 1861 measure of vote inequality.

Columns 1-8 in Panel B repeat the above regressions for the secular-religious placebo dimension. Adding more control variables, administrative-district fixed effects, party affiliation, or replacing vote inequality with its 1861 measure does not change the relationship between vote inequality and secular-religious orientation.

Additional robustness tests are presented in [Becker and Hornung \(2019\)](#), where we confirm that findings are qualitatively similar when inspecting the ten election periods separately. The relationship between conservative orientation and vote inequality remains negative over time. This rules out the possibility that the results are driven by the relative dominance of liberal policies prior to Bismarck's conservative turn in 1878.

### **Mitigating potential endogeneity concerns**

Despite the extensive number of control variables, our estimates may be biased if unobserved variables correlate with both the distribution of voters across classes and the political orientation of the MP. We address this concern in an instrumental variable approach that exploits variation in the share of voters in the first class. As discussed in the section on vote inequality, the local threshold that allocates voters to the three classes is somewhat arbitrary. Assignment to the first class is not within an individual's power but is largely determined by the share of tax payments coming from the individual with the highest income. The exact number of voters in the first class is therefore plausibly exogenous to systematic heterogeneity in local conditions. Note however that we do not want to suggest that this is similar to randomly assigning votes to individuals but rather similar to arbitrarily changing voting power within the economic elite.

The exclusion restriction requires that the share of voters in the first class affects the political orientation of MPs only indirectly, through vote inequality. We argue that this assumption holds because it seems plausible that the share of individuals endowed with



higher voting power because of local income thresholds can only affect MP voting patterns via the inherent features of the three-class franchise.<sup>62</sup> Consider a hypothetical example of two constituencies with an identical number of tax payers. In both constituency A and B, the top two tax payers pay 200 and 100 thalers of tax, respectively. Due to the distribution of tax payments of all other tax payers outside the top 2, in constituency A, the top tax payer (paying 200 thalers) is the only member of the first class, whereas in constituency B, the top two tax payers are both members of the first class. In other words, the share of tax payers in the first class is twice as high in constituency B than in constituency A. The exclusion restriction amounts to saying that the one and only first-class voter in constituency A affects political outcomes in his constituency only by virtue of the fact that the resulting vote inequality inherent in the three-class franchise gives him more power, but *not* because his position in the income distribution per se has an effect on RCV outcomes. Since the distribution of top incomes is identical in constituencies A and B, this strikes us as a reasonable assumption.

Table 8 presents results comparing OLS results to a 2SLS approach using the share of voters in the first class as an instrument for vote inequality in 1861.<sup>63</sup> We find the coefficient on vote inequality to be marginally smaller when comparing our baseline findings on the liberal-conservative orientation in column 1 to the findings in column 3. The qualitative findings however remain unchanged, even when controlling for individual MP characteristics and party affiliation. The results for the secular-religious orientation are close to zero in the 2SLS regression, confirming the earlier findings of a lack of a relationship with vote inequality.

## Discussing the mechanism

In this section, we explore our hypothesis that industrialization created a level of income inequality that allowed large-scale industrialists to elect MPs who provided liberal policies

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<sup>62</sup>Plausibility is further increased by conditioning on our set of control variables.

<sup>63</sup>Results are qualitatively similar when using 1893 vote inequality. Results are also similar when using the share of voters in the first *and* second class as an instrument.

that were conducive to industrialists (see the conceptual framework section). In line with this reasoning, we expect the effect of vote inequality on liberal voting to be amplified in areas with a higher share of large firms. For this exercise, we digitized data on the number of large and small firms in a Prussian county, from the 1875 Census of Industrial Firms. In the census, large firms are defined as firms with at least 5 employees.

To probe the hypothesis, we define a dummy for the upper quartile of the distribution of the share of large firms.<sup>64</sup> Table 9 shows the result from this exercise. In column 1, we add the main effect of being in the upper quartile in terms of share of large firms as a regressor. The variable by itself does not affect voting behavior. In column 2, we estimate an interaction term between vote inequality and the large firms dummy. We find that large firms are only associated with liberal voting if vote inequality is high. Note that our set of controls includes the industrial employment share, thus holding the general level of industrialization fixed.

We interpret these findings as evidence that industrialists were better able to coordinate on liberal policies when the electoral elite was small and benefited from a liberal economy. While we do not observe the characteristics of the electoral elite in our data, we think it is conceivable that in some regions industrialization created a level of income inequality that allowed large-scale industrialists to use the political power provided by the franchise system to commission a self-serving liberal agenda.

Columns 3 and 4 show that the concentration of large-scale industry does not matter for voting along the secular-religious placebo dimension.

## Conclusion

The Prussian Parliament, with its three-class franchise has been widely described as conservative. In fact, Social Democrats did not enter until 1908, whereas they were represented in the Reichstag from the year it was founded, in 1871. However, the historical narrative

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<sup>64</sup>Alternatively, we can base quartiles on the *number* of large firms in a constituency and find very similar results.

often seems to conclude that the three-class franchise made for conservative policies because of the power it gave to landed elites. Our paper challenges this view. We exploit the voting behavior of MPs in 329 roll call votes to predict political orientation using the optimal classification method (Poole, 2000). We find that – within the Prussian Parliament – higher local vote inequality is associated with a more *liberal* orientation of MPs.

Vote inequality as a result of the three-class franchise gave more votes to those paying more taxes. Our hypothesis is that, in late 19th century Prussia, this property of the franchise system gave a lot of voting power to new industrial elites. Using census data on the number of small and large firms, we show that our results are stronger in constituencies with a high concentration of large industrial firms. This corroborates our interpretation that large-scale industrialists were able to take advantage of the franchise system and elected delegates who voted for liberal policies. This finding also lends support to the view that historically, economic elites were not a monolithic group, but that some may have favored liberalization and modernization for self-serving reasons.

Furthermore, this paper is the first to present a comprehensive picture of the Prussian policy space over ten election periods (1867–1903), covering a crucial period in the structural transformation of the German Empire from an agricultural to an industrial economy. We hope that our new constituency-level measures of liberal-conservative and secular-religious orientation of MPs will be useful for other researchers interested in understanding this fascinating period of the history of one of Europe’s leading economies.

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Table 1: MPs and party affiliation frequency

Party	Classification	Indicator	Freq.	in %
Altliberale	Other	O	31	0.85
Antisemiten	Other	O	1	0.03
Bund der Landwirte	Other	O	1	0.03
Dänen	Minority	M	4	0.11
Deutsche Fortschrittspartei (and successors)	Left Liberal	F	350	9.57
Demokraten	Left Liberal	F	1	0.03
Freisinnige Vereinigung (1893-1910)	Left Liberal	F	12	0.33
Freisinnige Volkspartei (1893-1910)	Left Liberal	F	28	0.77
Deutsch-Schleswig-Holsteinische Partei	Minority	M	3	0.08
Administrators (no party affiliation)	Other	O	5	0.14
Konservative, Deutschkonservative since 1876)	Conservative	K	873	23.87
Altkonservative (during the 1870s)	Conservative	K	1	0.03
Konservative Litauer	Conservative	K	1	0.03
Neukonservative (during the 1870s)	Conservative	K	49	1.34
Liberales (not captured by other Liberal Parties)	Other	O	11	0.30
Linkes Zentrum	Zentrum	Z	26	0.71
Liberales Partei Schleswig-Holsteins	Left Liberal	F	6	0.16
Liberales Vereinigung (1880-1884)	Left Liberal	F	19	0.52
Nationalliberales	National Liberal	N	943	25.79
Polen	Minority	M	123	3.36
Freikonservative (Deutsche Reichspartei)	Free Conservative	R	466	12.74
Welfen	Minority	M	13	0.36
Zentrum (bis 1870: Katholisches Zentrum, Katholiken)	Zentrum	Z	690	18.87

*Notes:* This table reports the party affiliation of all 3658 MP-by-period observations whose votes were scalable. Column *Party* depicts the original party assignment according to Kühne (1994b). Cases in which party affiliation was uncertain were coded according to the most likely party affiliation. Column *Classification* consolidates smaller parties with similar platforms. Column *Indicator* lists a party code used in graphical presentation of the policy space. Columns *Freq.* and *in %* show the frequency and share of party affiliation.

Table 2: Results for selected roll call votes

Year:	1869	1870	1879	1891	1899
Topic:	Revoke free school tuition	County reform pro decentralization	Railroad nationalization: state allowed to buy private companies	Income taxation: lower deductibility of investments in joint stock companies	Canal construction between Rhine and Elbe bringing competition to East Elbian agriculture
	(1)	(2)	(3)	(4)	(5)
Yea (=1)	134 (C)	185 (L)	226 (C)	184 (C)	209 (L)
Nay (=0)	202 (L)	164 (C)	155 (L)	160 (L)	212 (C)
Vote inequality (sd)	-0.122*** (0.043)	0.201*** (0.043)	-0.017 (0.048)	-0.141*** (0.042)	0.163*** (0.036)
Landownership inequality (sd)	0.072 (0.044)	-0.159*** (0.044)	0.123*** (0.043)	0.113*** (0.041)	-0.297*** (0.032)
Observations	336	349	381	344	421
R-squared	0.03	0.09	0.05	0.05	0.19

*Notes:* This table reports results from linear probability models estimated for five individual RCVs. The roll calls are nr. 44 in election period 10 (column 1), nr. 65 in election period 10 (column 2), nr. 1 in election period 14 (column 3), nr. 10 in election period 17 (column 4), and nr. 6 in election period 19 (column 5). The binary dependent variable assumes the value 1 for yea and the value 0 for nay votes. Vote inequality (sd) and landownership inequality (sd) are standardized with zero mean and a standard deviation of one. We denote the conservative (C) and liberal (L) position at the top of the table. A position is coded as conservative if the majority of MPs from the conservative parties voted for it, and vice versa. Standard errors, clustered at the constituency level, in parentheses. \*\*\* denotes statistical significance at the 1% level, \*\* at the 5% level, and \* at the 10% level.

Table 3: Prediction of voting behavior across parliaments from 1867–1903

Scaled RCVs	Total MPs (ever voted)	Scaled MPs ( $\geq 15$ votes)	1 Dimension		2 Dimensions		Eigenvalues		
			Correctly class. votes	APRE	Correctly class. votes	APRE	1	2	3
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
328	2291	1906	89.4%	73.0%	96.0%	89.9%	56.90	53.30	44.40

*Notes:* This table reports descriptive statistics of MP's voting behavior. Column 1 lists the number of scaled RCVs. Column 2 lists the number of MPs that actively cast at least one vote during the whole period. Column 3 lists the number of scaled MPs with a minimum requirement of 15 votes. Columns 4 and 5 list the percentage of correctly classified yea and nay votes and the Average Proportion Reductions in Error (APRE) predicted by the optimal classification process for the one-dimensional case. Columns 6 and 7 list the same for the two-dimensional case. Columns 8-10 list the eigenvalues for the first three dimensions.

Table 4: Party affiliation and political orientation

	Liberal-conservative dimension (1)	Secular-religious dimension (2)
Left Liberal (F)	-0.880*** (0.017)	-0.376*** (0.019)
National Lib. (N)	-0.689*** (0.014)	-0.634*** (0.017)
Minority (M)	-0.451*** (0.034)	-0.090*** (0.024)
Zentrum (Z)	-0.293*** (0.019)	
Free Conserv. (R)	-0.210*** (0.017)	-0.419*** (0.022)
Conservative (K)		-0.208*** (0.016)
Other (O)	-0.327*** (0.053)	-0.254*** (0.064)
Observations	1903	1903
R-squared	0.62	0.47

*Notes:* This table reports results of OLS regressions of political orientation on vote inequality in a sample of MPs with at least 15 votes in the period 1867–1903. *Column 1* - Positive values of the dependent variable are interpreted to reflect higher levels of conservative orientation; negative values reflect liberal orientation. *Column 2* - Positive values of the dependent variable are interpreted to reflect higher levels of adherence to the church; negative values reflect secular orientation. Standard errors, clustered at the constituency level, in parentheses. \*\*\* denotes statistical significance at the 1% level, \*\* at the 5% level, and \* at the 10% level.

Table 5: Vote inequality and liberal-conservative orientation

	Inequality	Industrial share	Urban share	Protestant share	Ethno-linguistic heterogeneity	Non-migrant share	Literacy rate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Vote inequality	-2.864*** (0.520)	-1.845*** (0.528)	-1.313** (0.540)	-1.272** (0.546)	-1.779*** (0.580)	-1.469** (0.601)	-1.793*** (0.655)
Landownership inequality	0.878*** (0.193)	0.574*** (0.195)	0.661*** (0.215)	0.666*** (0.216)	0.950*** (0.242)	1.047*** (0.249)	1.232*** (0.275)
Indu. employment (share)		-1.136*** (0.286)	-0.430 (0.325)	-0.439 (0.325)	-0.689** (0.335)	-0.723** (0.336)	-0.946*** (0.360)
Urbanization (share)			-0.356*** (0.086)	-0.356*** (0.086)	-0.350*** (0.087)	-0.331*** (0.089)	-0.360*** (0.097)
Protestants (share)				-0.014 (0.039)	-0.064 (0.041)	-0.049 (0.043)	-0.094** (0.046)
Linguistic frac. (Herfindahl)					-0.299*** (0.087)	-0.247*** (0.092)	-0.111 (0.106)
Never migrated (share)						0.290 (0.183)	0.142 (0.208)
Literacy rate							0.470** (0.223)
Constant	0.888*** (0.210)	0.714*** (0.193)	0.388** (0.188)	0.373* (0.191)	0.526*** (0.199)	0.103 (0.333)	-0.138 (0.343)
Observations	1903	1903	1903	1903	1903	1903	1903
R-squared	0.04	0.07	0.09	0.09	0.10	0.10	0.11

Notes: This table reports results of OLS regressions of liberal-conservative orientation on vote inequality in a sample of MPs with at least 15 votes in the period 1867–1903. Positive values of the dependent variable are interpreted to reflect higher levels of conservative orientation; negative values reflect liberal orientation. Standard errors, clustered at the constituency level, in parentheses. Column 8 has lower number of observations due to missing information for city counties. \*\*\* denotes statistical significance at the 1% level, \*\* at the 5% level, and \* at the 10% level.

Table 6: Vote inequality and secular-religious orientation

	Inequality	Industrial share	Urban share	Protestant share	Ethno-linguistic heterogeneity	Non-migrant share	Literacy rate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Vote inequality	-1.388*** (0.445)	-0.939* (0.494)	-0.850* (0.507)	0.086 (0.419)	-0.248 (0.436)	-0.302 (0.467)	-0.222 (0.486)
Landownership inequality	-0.027 (0.167)	-0.161 (0.176)	-0.146 (0.179)	-0.040 (0.152)	0.147 (0.167)	0.130 (0.172)	0.085 (0.184)
Indu. employment (share)		-0.501** (0.250)	-0.383 (0.296)	-0.584*** (0.214)	-0.748*** (0.215)	-0.742*** (0.215)	-0.687*** (0.225)
Urbanization (share)			-0.060 (0.075)	-0.063 (0.058)	-0.058 (0.058)	-0.062 (0.058)	-0.055 (0.058)
Protestants (share)				-0.329*** (0.028)	-0.362*** (0.032)	-0.364*** (0.032)	-0.353*** (0.037)
Linguistic frac. (Herfindahl)					-0.197*** (0.076)	-0.206*** (0.078)	-0.240*** (0.088)
Never migrated (share)						-0.050 (0.123)	-0.014 (0.136)
Literacy rate							-0.116 (0.156)
Constant	0.770*** (0.178)	0.693*** (0.178)	0.639*** (0.190)	0.298* (0.153)	0.399** (0.157)	0.472* (0.252)	0.532** (0.252)
Observations	1903	1903	1903	1903	1903	1903	1903
R-squared	0.03	0.04	0.04	0.16	0.16	0.16	0.16

*Notes:* This table reports results of OLS regressions of secular-religious orientation on vote inequality in a sample of MPs with at least 15 votes in the period 1867–1903. Positive values of the dependent variable are interpreted to reflect higher levels of adherence to the church; negative values reflect secular orientation. Standard errors, clustered at the constituency level, in parentheses. Column 8 has lower number of observations due to missing information for city counties. \*\*\* denotes statistical significance at the 1% level, \*\* at the 5% level, and \* at the 10% level.



Table 7: Robustness checks

	Baseline spec.	Income tax	Social uprisings	MP controls	Admin. district FE	Party controls	1861 sample	1861 vote inequality
Panel A: Liberal-conservative orientation								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Vote inequality	-1.793*** (0.655)	-1.932*** (0.718)	-2.095*** (0.629)	-1.197** (0.547)	-1.072** (0.542)	-0.606** (0.279)	-1.333** (0.650)	
Vote inequality 1861								-1.580*** (0.594)
Landownership inequality	1.232*** (0.275)	1.542*** (0.252)	1.283*** (0.259)	0.676*** (0.216)	0.267 (0.185)	0.305*** (0.099)	0.496** (0.226)	0.464** (0.217)
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	No	No	No	Yes	Yes	Yes	Yes	Yes
District FE	No	No	No	No	Yes	No	No	No
Party controls	No	No	No	No	No	Yes	No	No
Observations	1903	1781	1903	1895	1895	1895	1538	1538
R-squared	0.11	0.08	0.12	0.30	0.36	0.64	0.29	0.29
Panel B: Secular-religious orientation								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Vote inequality	-0.222 (0.486)	-0.049 (0.523)	-0.006 (0.494)	-0.067 (0.399)	0.050 (0.396)	0.175 (0.281)	0.331 (0.472)	
Vote inequality 1861								0.393 (0.428)
Landownership inequality	0.085 (0.184)	0.157 (0.198)	0.048 (0.188)	-0.170 (0.156)	-0.225 (0.146)	-0.248** (0.103)	-0.372** (0.159)	-0.364** (0.144)
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	No	No	No	Yes	Yes	Yes	Yes	Yes
District FE	No	No	No	No	Yes	No	No	No
Party controls	No	No	No	No	No	Yes	No	No
Observations	1903	1781	1903	1895	1895	1895	1538	1538
R-squared	0.16	0.17	0.17	0.29	0.34	0.49	0.27	0.27

Notes: This table reports results of OLS regressions in a sample of MPs with at least 15 votes in the period 1867–1903. *Panel A* - Positive values of the dependent variable are interpreted to reflect higher levels of conservative orientation; negative values reflect liberal orientation. *Panel B* - Positive values of the dependent variable are interpreted to reflect higher levels of adherence to the church; negative values reflect secular orientation. Column 1 *Baseline spec.* repeats results from column 7 in tables 5 and 6. Column 2 *Income tax* adds a control for the average per-capita tax payments in a constituency in 1878. The lower number of observations is due to missing values for city counties. Column 3 *Social uprisings* adds a control for the number of violent protests in a constituency during the 1816–1867 time period. Column 4 *MP controls* adds the full set of MP controls as shown in table C.2. The lower number of observations is due to missing values for electoral margin and turnout. Column 5 *District dummies* adds a full set of 35 administrative district (*Regierungsbezirk*) fixed effects. Column 6 *Party controls* add a set of party affiliation controls, defined as the share of active election periods an MP was affiliated with each of the parties. Column 7 *1861 sample* is estimated in a sample of regions that were part of Prussia prior to 1866. Column 8 *1861 vote inequality* test robustness to substituting the vote inequality measured in 1893 with a 1861 measure which is only available in the smaller sample. Standard errors, clustered at the constituency level, in parentheses. \*\*\* denotes statistical significance at the 1% level, \*\* at the 5% level, and \* at the 10% level.

Table 8: Mitigating endogeneity concerns

	Liberal-conservative					Secular-religious				
	Baseline	First stage	Baseline	MP controls	Party controls	Baseline	First stage	Baseline	MP controls	Party controls
	OLS			2SLS		OLS			2SLS	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Vote inequality 1861	-1.809** (0.718)		-1.790** (0.754)	-1.669*** (0.623)	-0.750** (0.350)	0.377 (0.510)		-0.024 (0.545)	0.030 (0.458)	0.237 (0.332)
Share of voters in class 1		-2.553*** (0.085)					-2.553*** (0.085)			
Individual controls	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Party controls	No	No	No	No	Yes	No	No	No	No	Yes
Observations	1544	1544	1544	1538	1538	1544	1544	1544	1538	1538
R-Squared	0.14		0.14	0.29	0.63	0.14		0.14	0.27	0.46
Kleibergen-Paap <i>F</i> statistic			894.87	835.68	810.19			894.87	835.68	810.19

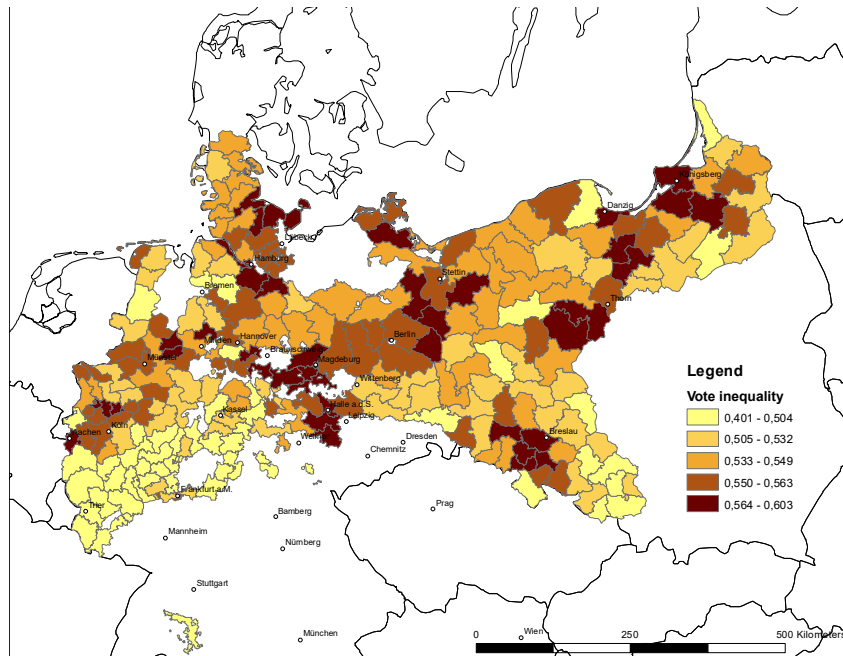
*Notes:* This table reports results of OLS and 2SLS regressions. *Columns 1 and 3-5:* Positive values of the dependent variable are interpreted to reflect higher levels of conservative orientation; negative values reflect liberal orientation. *Column 6 and 8-10:* Positive values of the dependent variable are interpreted to reflect higher levels of adherence to the church; negative values reflect secular orientation. *Columns 1 and 6* repeat baseline results in the 1861 sample. *Columns 2-3 and 7-8* report the first and second stages of a 2SLS approach using the share of voters in the first class as an instrument for vote inequality. *Columns 4 and 9* add the full set of MP controls. *Columns 5 and 10* add a set of party affiliation controls, defined as the share of active election periods an MP was affiliated with each of the parties. Standard errors, clustered at the constituency level, in parentheses. \*\*\* denotes statistical significance at the 1% level, \*\* at the 5% level, and \* at the 10% level.

Table 9: Vote inequality and industrial elites

	Liberal-conservative		Secular-religious	
	(1)	(2)	(3)	(4)
Vote inequality	-1.016*	-0.672	-0.015	0.032
	(0.549)	(0.558)	(0.402)	(0.430)
Landownership inequality	0.620***	0.625***	-0.172	-0.171
	(0.231)	(0.231)	(0.159)	(0.159)
1 (% Large firms $\geq q_{75}$ )	-0.048	1.000**	0.005	0.149
	(0.042)	(0.428)	(0.030)	(0.296)
Vote inequality $\times$ 1 (% Large firms $\geq q_{75}$ )		-1.943**		-0.267
		(0.813)		(0.560)
Baseline controls	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes
Observations	1886	1886	1886	1886
R-squared	0.27	0.28	0.29	0.29

*Notes:* This table reports results of OLS regressions in a sample of MPs with at least 15 votes in the period 1867–1903. *Columns 1 and 2:* Positive values of the dependent variable are interpreted to reflect higher levels of conservative orientation; negative values reflect liberal orientation. *Column 3 and 4:* Positive values of the dependent variable are interpreted to reflect higher levels of adherence to the church; negative values reflect secular orientation. 1 (% Large firms  $\geq q_{75}$ ) is equal to one if the constituency-level share of firms with more than 5 employees is in the highest quartile. Standard errors, clustered at the constituency level, in parentheses. \*\*\* denotes statistical significance at the 1% level, \*\* at the 5% level, and \* at the 10% level.

(a) Vote inequality.



(b) Landownership inequality.

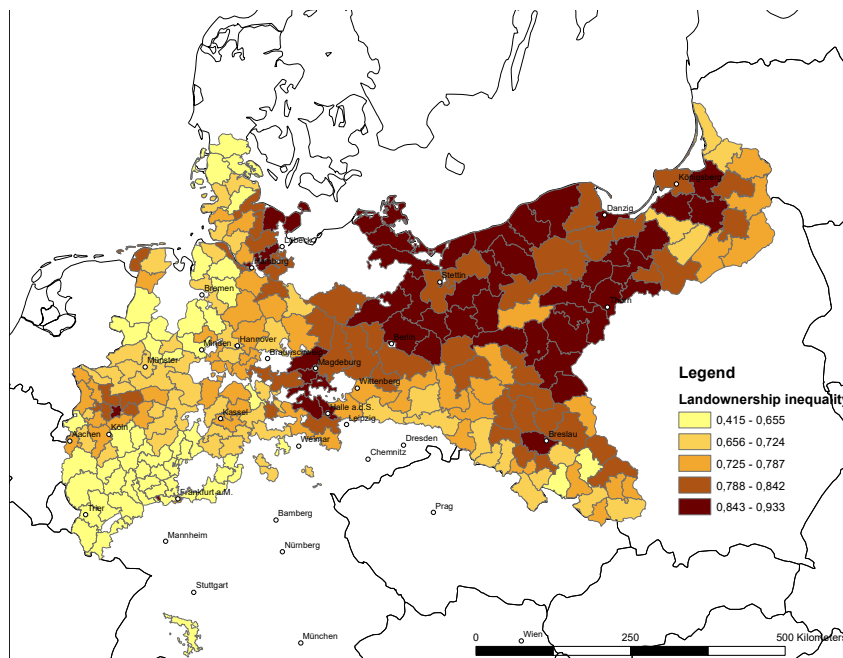
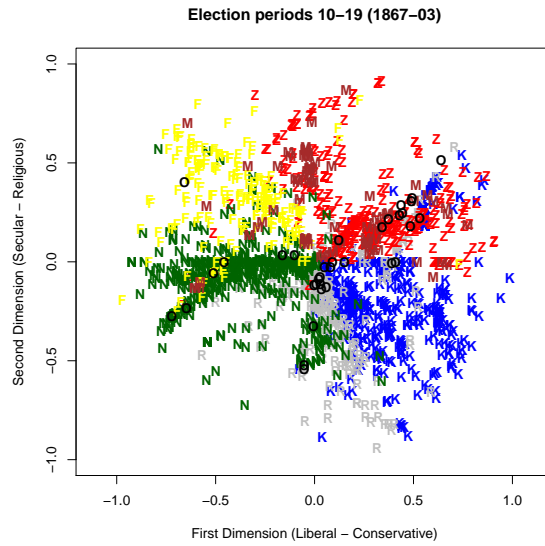
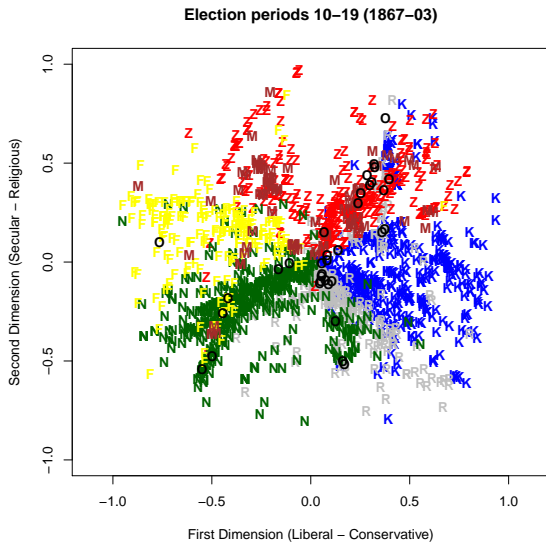


Figure 1: Spatial variation in inequalities in Prussia

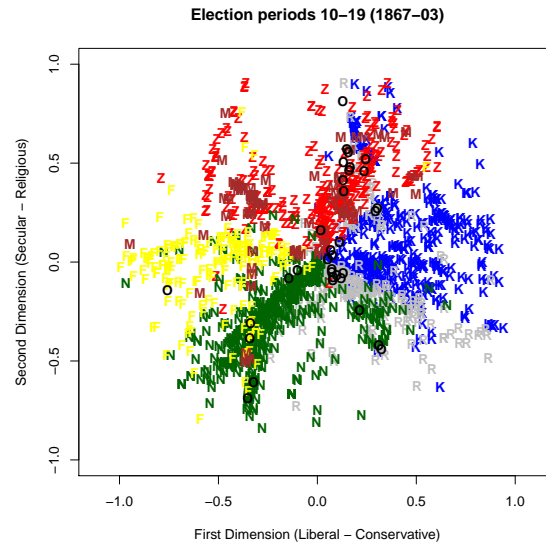
The figure shows the spatial distribution of vote inequality and landownership inequality. Vote inequality is a Gini coefficient calculated using the county-level number of voters in each class in the three-class franchise system of 1893 assuming that the tax burden of each class amounts to exactly one third. Landownership inequality is a Gini coefficient calculated using the county-level number of farms with arable land by size-class (up to 1 hectare, 1 to 2 ha, 2 to 10 ha, 10 to 50 ha, 50 to 100 ha, and more than 100 ha) in 1882.



(a) Before rotation



(b) Conservative Party fixed to horizontal axis



(c) Centre Party fixed to vertical axis

Figure 2: The Prussian policy space during election periods 10-19

*Positions of MPs in the Prussian House of Representatives. Each shape represents the political orientation of an MP based on his voting behavior during all roll calls in the period 1867-1903. Figure (b) is rotated to fix the centroid of the Conservative Party (K) to the horizontal axis. Figure (c) is rotated to fix the centroid of the Centre Party (Z) to the vertical axis.*

# Appendices

## A Further historical background

### A.1 The political landscape

This section extends the description of the political landscape and the political parties provided in the main article in the historical context section. The Prussian political landscape stabilized during the early periods of our analysis. Political factions and parties formed during the 1860s, and became even more important after the German Reichstag was established in 1871.

Drawing on biographical information from Kühne (1994b), we report the party affiliation of MPs in Table 1.<sup>65</sup> The table depicts an aggregate number of 3,658 MP-by-period observations of party affiliation between 1867 and 1903. A range of smaller factions were represented in parliament. We classify members of smaller factions into larger party groups as indicated in columns 2 and 3. This leaves us with six main parties which were active during our period of analysis (and the residual category ‘Other’ (1.35% of observations).

Parties and their members overlap with the German Reichstag. One reason why some MPs were members of both parliaments is the fact that the Reichstag did not reimburse its MPs for (travel) expenses whereas the Prussian House of Representatives did.<sup>66</sup> Platforms covered a spectrum of left and right wing policies. However, due to the inequalities embedded in the franchise system, platforms addressing social issues and redistribution such as the Socialist Workers’ Party did not manage to obtain any seats in the Prussian Parliament until 1908.<sup>67</sup> Parties were additionally distinguishable in their religious views as well as in their support of the Imperial Government, in particular the political agenda of chancellor Otto von Bismarck. For a summary of the key debates that provides further context to the political landscape of our period under analysis, we would like to refer the reader to Section A.2 and especially Table A.2.

The Conservative Party (K) was a nobility-dominated group of Protestants representing agrarian interests. They formed a natural alliance with the Free Conservative Party (R)

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<sup>65</sup>In some cases when party affiliation was uncertain, we used the most likely party affiliation given in Kühne (1994b). In cases of changes in party affiliation *within* a legislature, we use the initial party affiliation. Party changes within legislature are extremely rare and affect well below 1% of MPs, on average. In cases when MPs changed party affiliations *between* legislatures, we assigned the party for which the most roll call votes were cast.

<sup>66</sup>Approximately 24% of Prussian MPs were members of the two parliaments at the same time for at least one year (on average 6.7 years). Concerns that MPs who belonged to both parliaments were systematically different can be addressed with a dummy variable for dual membership. In unreported regressions, we find that adding such a control variable does not change our results.

<sup>67</sup>In that sense, the Prussian Parliament as a whole was a conservative one. But as argued before, our interest is in the link between vote inequality and political orientation *within* the three-class franchise.

and had shifting alliances with the National Liberal Party (N) and the Centre Party (Z). The Conservative Party was conservative in all dimensions, aimed at retaining the feudal structure, the monarchy, and opposed the unification of the German Empire in favor of a strong Prussian state. Conservatives were strongly in favor of agrarian protectionism, and weakly in favor of industrial protection and guilds. They were divided over the *Kulturkampf* in the 1870s, but rallied behind Bismarck after his 'conservative turn' in 1879, and supported the return to protectionism in the 1880s. The Free Conservatives (R) also consisted of Protestant conservatives, but were consistent supporters of Bismarck's policies. Thus, different from the Conservative Party, they were in favor of the *Kulturkampf*. They supported the unification of the German Empire and protectionism.

The National Liberal Party (N) was dominated by burghers and businessmen. National Liberals constituted the largest faction in parliament during the *Kulturkampf* period for which they supported Bismarck's policies. They had a natural alliance with the Left Liberal Party (F) with which they shared similar views on economic liberalization and free trade, but they were split between left- and right-leaning groups. From 1879 to 1885 they opposed Bismarck's 'conservative turn' but moved to the right afterwards when they strongly supported industrial tariffs and were partly in favor of agrarian protectionism and guild protection. The Left Liberals (F) consisted of members of the German Progress Party (*Deutsche Fortschrittspartei*) and its spin-offs and successors. Members usually opposed Bismarck and large government, whereas they supported democracy, equality before the law, and economic liberalism (Treue, 1975). In line with their ideals, Free Liberals were supportive of Bismarck's strive for secularization during the early *Kulturkampf*.

The Centre Party (Z), became highly successful with the Catholic population when opposing secularization during the *Kulturkampf* and defending the position of the Catholic Church. Subsequently, it maintained its electorate and strengthened its dominance in the western regions of Prussia. The party is generally categorized as conservative but did not develop a comprehensive program beyond religious issues. This made the Centre Party a crucial ally with shifting allegiances in many important topics (Treue, 1975). During 1879 to 1885, after the *Kulturkampf* period, Bismarck convinced the Centre Party to ally with Conservative parties to support his protectionist policies.

Minority parties (M) include mostly ethnic minorities in Prussia: Polish MPs from the Slavic regions, Danish MPs from the Schleswig region, and Guelph/Welf MPs from Hanover. Some Danish MPs refused to accept the constitution and were consequently barred from parliament and roll call voting. Polish MPs (mostly Catholic) supported the Centre Party during the *Kulturkampf*. Guelph Party MPs favored Hanoverian independence from Prussia, opposed the government and supported the Centre Party during the *Kulturkampf*. We assigned remaining MPs to the category Other (O) that captures mostly liberal members that are neither left liberals nor national liberals and MPs from the Bund

der Landwirte, an economic association which leaned predominantly toward right-wing conservative policies.

This description shows that liberal parties of the time did by no means stand for extreme economic liberal views as one might find in some Western Democracies of the 20th and 21st century. Liberal parties were more liberal in comparison to a conservative spectrum that aimed at retaining the feudal structure and the monarchy, and that even opposed the unification of the German Empire. It is important to keep this in mind when we talk about liberal-conservative policies and MPs.

## A.2 Key debates in the period 1867–1903

Our empirical analysis starts in 1867, after Prussia won the Austro-Prussian War of 1866, and annexed the Kingdoms of Hanover, the Electorate of Hesse, and the Duchy of Nassau to reach its maximum extension which it kept until WWI. From 1867, that is election period 10, the new provinces of Hanover, Hesse-Nassau and Schleswig-Holstein were part of Prussia and elected members to the Prussian House of Representatives. Election periods initially lasted three years and, after 1888, five years. Table A.1 shows the dates of primary elections (column 1), of the election of MPs by the electoral delegates (column 2), and the start and end dates of the legislatures (columns 3 and 4). Column 5 lists the number of RCVs that took place in each election period. We end our analysis in 1903 due to a range of changes in the electoral system and the division of constituencies thereafter.

Table A.2 presents a systematic overview over the content of all RCVs comparing the ten election periods.<sup>68</sup> A fundamental issue looming throughout the entire period under analysis is the social conflict arising between advocates of economic liberalism and advocates of a social policies. This conflict did not arise in the Prussian parliament due to the lack of representation of socialist parties and was eased by the introduction of Bismarck's system of social insurances from the 1880s.

The entire period 1867–1903 can be roughly subdivided into three subperiods, each of which may be associated with the political life of Otto von Bismarck, Chancellor of the German Empire and Foreign Minister of Prussia. This excludes election period 10 (1867–1870), that preceded the foundation of the German Empire and the Reichstag. Political parties were not yet fully developed and the preceding election periods were dominated by a constitutional conflict between the Emperor and Parliament which had power over the budget. The conflict, although officially resolved in 1866, continued in election period 10, which

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<sup>68</sup>The categories in this table roughly correspond to the ministries of the Prussian government. Due to the small number of votes on foreign affairs (mostly a Reichstag matter), this category was combined with interior affairs. Due to the high frequency of budgetary issues and procedural issues, these items form a separate category. RCVs were first itemized by keywords according to the original parliamentary minutes before keywords were assigned to a category.



stands out as a period mainly concerned with budgetary issues (budgetary allocation to different ministries).

The following three election periods 11 to 13, covering the years 1870 to 1879, are dominated by the struggle between the Prussian state and the Roman Catholic Church (ca. 1871–1878, and finally diplomatically settled in 1887). During this period, labeled as *Kulturkampf*, a large share of RCVs are directly related to debates about the so-called May Laws (*Maigesetze*) designed to bring education, marriage, and so on under the control of the state. The debates about the separation of church and state do not follow a classical liberal-conservative divide, but define a separate political dimension relevant to explaining voting patterns. Apart from the *Kulturkampf*, a range of RCVs can be found in the category Interior and Foreign that are concerned with administrative reforms of the counties. The county reform was heatedly debated as it also determined the fiscal responsibilities for welfare benefits.

We use the label *Protectionism* for a second subperiod to characterize the three election periods 14 to 16 covering the years 1879–1888. Following his so-called ‘conservative turn’ in 1879, Bismarck broke with the National Liberal Party and tended towards more nationalist-conservative policies. It is important to note that, given the subsidiarity of the Prussian House of Representatives to the German Reichstag, some policy issues, especially those related to external affairs, were debated primarily in the Reichstag. For instance, the turn from liberalism to protectionism and the “Marriage of Iron and Rye” (see [Schonhardt-Bailey, 1998](#); [Lehmann, 2010b](#)) were issues mainly debated in the Reichstag.<sup>69</sup> However, nationalization of railways, a Prussian matter, has a similar flavor in terms of beliefs in free markets vs state, and is the topic of a substantial number of RCVs in period 14 (see category Commerce). Similarly, resonating with the findings by [Cinnirella and Schueler \(2018\)](#), some RCVs were concerned with the introduction of German as main language of instruction in regions with Slavic majority (see category Culture in election period 15) and the promotion of German interests and settlement in eastern Prussia (see category Interior and Foreign in election period 16). Although the *Kulturkampf* was largely settled, we find many RCVs related to church and state in election periods 14 to 16. These are predominantly concerned with mitigating the impact of the May Laws, for example pardoning of wrongdoing according to these laws and sorting out remaining issues related to education.

Finally, we use the label *post-Bismarck* for a third subperiod that combines the final three election periods 17 to 19 (1888–1903). With the elections in 1888, legislatures moved from three-year duration to five-year duration. During the debate over new anti-socialist laws and the conflict with the new King, Bismarck resigned in 1890 and died soon af-

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<sup>69</sup>Agricultural tariffs were the matter of four RCVs in the Prussian House of Representatives. One in election period 15, one in 16, and two in 19, but – in line with subsidiarity – voting was concerned with submission to the Reichstag.

ter. While an increasing number of social-democratic MPs were voted into the Reichstag, such change did not occur in the Prussian House of Representatives, arguably because the three-class franchise favored elite voters and discounted votes of the working poor. Major debates, as captured by a high share of RCVs, concerned fundamental changes in income taxation (see also Hill, 1892; Mares and Queralt, 2014) and corresponding changes in the allocation of voters to classes in the primary elections (see categories Treasury and Procedures in election period 17). Finally, in election period 19 RCVs were mainly concerned with the building of the Mittelland Canal, linking the river Rhine and river Elbe. The canal was seen as a threat to the nobility in East Elbia because they feared a penetration of cheap goods from the west via the canal and the Elbe (see category Commerce).

Table A.1: Election periods and roll call frequency

Election period	Primary election (1)	Election of MPs (2)	Legislature start (3)	Legislature end (4)	No. roll calls (5)
10	30.10.1867	07.11.1867	15.11.1867	12.02.1870	67
11	09.11.1870	16.11.1870	14.12.1870	20.05.1873	47
12	28.10.1873	04.11.1873	12.11.1873	30.06.1876	39
13	20.10.1876	27.10.1876	12.01.1877	21.02.1879	15
14	30.09.1879	07.10.1879	28.10.1879	11.05.1882	26
15	19.10.1882	26.10.1882	14.11.1882	09.05.1885	34
16	29.10.1885	05.11.1885	14.01.1886	28.06.1888	26
17	30.10.1888	09.11.1888	14.01.1889	05.07.1893	29
18	31.10.1893	07.11.1893	16.01.1894	18.05.1898	23
19	27.10.1898	03.11.1898	16.01.1899	01.07.1903	23

*Notes:* This table reports the key dates of election periods and the corresponding frequency of roll calls covered in our analysis. Note that election period 13 ended prematurely in February 1879 after the Prussian King dissolved the House of Representatives.

Table A.2: Content of roll call votes

Election period Years	(Kulturkampf)				(Protectionism)			(Post-Bismarck)		
	10 1867-70	11 1870-73	12 1873-76	13 1877-79	14 1879-82	15 1882-85	16 1886-88	17 1889-93	18 1894-98	19 1899-03
Agriculture (in %)	6.0	4.3	0.0	0.0	3.8	11.8	0.0	10.3	13.0	0.0
Commerce (in %)	0.0	2.1	10.3	20.0	19.2	2.9	3.8	13.8	13.0	34.8
Treasury (in %)	1.5	10.6	2.6	0.0	7.7	5.9	0.0	31.0	13.0	0.0
Justice (in %)	6.0	0.0	0.0	33.3	0.0	2.9	3.8	0.0	26.1	17.4
Interior and Foreign (in %)	17.9	25.5	20.5	6.7	34.6	17.6	23.1	13.8	17.4	0.0
Culture (in %)	6.0	40.4	41.0	6.7	26.9	26.5	46.2	6.9	17.4	4.3
Budget (in %)	53.7	17.0	10.3	13.3	3.8	29.4	7.7	10.3	0.0	43.5
Procedures (in %)	9.0	0.0	15.4	20.0	3.8	2.9	15.4	13.8	0.0	0.0
Total RCVs	67	47	39	15	26	34	26	29	23	23

*Notes:* This table reports the content and frequency of roll call votes by category and election period. Categories roughly correspond to the ministries of the Prussian government. Due to the rare occasion of votes on foreign affairs, this category was combined with interior affairs. Due to the high frequency of budgetary issues and statutory issues, these items received a separate category. RCVs were first itemized by keywords according to the original parliamentary minutes before keywords were assigned to a category.

## B Voting behavior in individual roll calls

This section provides additional details on the parliamentary debates surrounding the five selected RCVs analyzed in the main text.

**Election Period 10, RCV 44: School tuition** The Prussian constitution of 1850 stipulated in Article 25, sentence 3, that public primary schooling was provided free of charge. Municipalities were in charge of financing public schooling and, in case of need, could be supported by the state. In 1869, the King proposed a bill to revoke the third sentence. The RCV is a vote for the acceptance of the bill. Conservatives supported it, whereas liberals strongly opposed it. Details from the debate: One conservative argument was that the poor favored tuition over taxes because tuition was limited in time and they would not have to pay school taxes their whole life. Essentially, conservatives were in favor of allowing municipalities the choice between tuition and taxes. It was rejected.

**Election period 10, RCV 65: County reform** The administrative county reform (*Kreisordnung*) was one of the most important bills of liberal policy making (p. 319 [Nipperdey, 1992](#)). It transferred power over local administration, especially in the rural countryside, from the nobility to public officials and thereby democratized the public administration. In 1870, National liberal MP Johann von Miquel proposed an amendment regarding §47 of the bill presented by the King. The proposed version of the section determines that the newly introduced role of a public official (*Amtshauptmann*) should be filled following a selection by the local administration instead of being appointed by the King. The RCV is a vote for the acceptance of an amendment. It is essentially a vote about decentralization of power ('Yea') vs centralization ('Nay'). It was accepted.

**Election period 14, RCV 1: Railroad nationalization** The bill on nationalization of the Prussian railroads introduced by the Minister of Public Works Albert von Maybach in 1879/80 can be interpreted in the light of rising protectionism. The fact that transport costs hugely varied and were not under control of the state counteracted the new imperial trade policies. The RCV is a vote on §1 which determined that the state should buy railroad companies. It was accepted.

**Election period 17, RCV 10: Income taxation** One of the most famous bills of Prussian legal history is the Income Tax reform of 1891 (discussed by [Hill, 1892](#)), introduced by the Prussian Minister of Finance Johann von Miquel who was also a leading figure of the National Liberal Party. The progressive income tax bill laid the foundation of today's system

of taxation in Germany. The bill was extensively discussed in the Prussian House of Representatives and was amended through numerous votes. For example, in the 48th meeting of the session, on March 4, 1891, 19 amendments and sub-amendments were proposed by MPs. RCV 10 is a vote on an amendment to §16 of the bill regarding the taxation of income from stock companies, introduced by Conservative Party MP von Jagow. Jagow's amendment proposes that taxable income from investment in joint stock companies (for example dividends) should be reducible by 3.5% of the face value of the shares. At the same time National Liberal MP von Heede introduced a competing amendment that wanted to reduce the income by 4% of the face value. The competing amendment and the ensuing debate show that liberals preferred higher tax exemptions for capitalists than conservatives. Jagow's amendment was accepted.

**Election period 19, RCV 6: Canal construction** In 1899, the Kaiser introduced a bill to finance and construct a canal connection between the rivers Rhine and Elbe in Prussia. In his view, the canal was as a symbol of technological and economic progress in Prussia. The RCV was a vote for or against § 1 and § 2, that is, the construction of the segment Dortmund-Rhine. Conservatives were against building the canal because it would be detrimental to agrarian interest. The agrarian elites feared a 'grain invasion', in other words, the import of cheap grain from the United States. Liberals were for the canal because, in their view, it would be highly beneficial for industry but also beneficial for agrarian interest in East Prussia. Because of the conservative opposition to the Kaiser's plans, some MPs that were also civil servants, were temporarily retired from their positions and faced disciplinary sanctions. These MPs became widely known as 'canal rebels'. The bill was rejected.

Table B.1: Results for selected roll call votes

Year:	1869	1870	1879	1891	1899
Topic:	Revoke free school tuition	County reform pro decentralization	Railroad nationalization: state allowed to buy private companies	Income taxation: lower deductibility of investments in joint stock companies	Canal construction between Rhine and Elbe bringing competition to East Elbian agriculture
	(1)	(2)	(3)	(4)	(5)
Yea (=1)	134 (C)	185 (L)	226 (C)	184 (C)	209 (L)
Nay (=0)	202 (L)	164 (C)	155 (L)	160 (L)	212 (C)
Vote inequality (sd)	-0.097 (0.061)	0.182*** (0.057)	-0.071* (0.037)	-0.105** (0.053)	0.086** (0.038)
Baseline controls	Yes	Yes	Yes	Yes	Yes
Observations	336	349	380	343	420
R-squared	0.12	0.13	0.46	0.14	0.39

*Notes:* This table reports results from linear probability models estimated for five individual RCVs. The roll calls are nr. 44 in election period 10 (column 1), nr. 65 in election period 10 (column 2), nr. 1 in election period 14 (column 3), nr. 10 in election period 17 (column 4), and nr. 6 in election period 19 (column 5). The binary dependent variable assumes the value 1 for yea and the value 0 for nay votes. Vote inequality (sd) is standardized with zero mean and a standard deviation of one. We denote the conservative (C) and liberal (L) position at the top of the table. A position is coded as conservative if the majority of MPs from the conservative parties voted for it, and vice versa. Control variables include landownership inequality, indu. employment (share), urbanization (share), Protestant (share), linguistic frac. (Herfindahl), never migrated (share), and literacy rate. Standard errors, clustered at the constituency level, in parentheses. \*\*\* denotes statistical significance at the 1% level, \*\* at the 5% level, and \* at the 10% level.

## C Variable definitions and data sources

### C.1 Constituency-level variables

The following variables were either part of the Galloway database (see [Galloway, 2007](#)), the iPEHD database (see [Becker et al., 2014](#)) or specifically digitized for this paper. The corresponding original sources are indicated below.

**Vote inequality.** Gini coefficient, calculated using the number of voters in each class in the three-class franchise system of 1893 assuming that the tax burden of each class amounts to exactly one third, constructed using county-level data reported by [Königlich Preußisches Statistisches Bureau \(1864–1905, vol. 17\)](#).

**Vote inequality 1861.** Gini coefficient, calculated using the number of voters in each class in the three-class franchise system of 1861 assuming that the tax burden of each class amounts to exactly one third, constructed using county-level data reported by [Königlich Preußisches Statistisches Bureau \(1861–1904, vol. 2\)](#).

**Landownership inequality** Gini coefficient, calculated using using the number of farms in 6 size groups in 1882. Farms with arable land up to 1 hectare, 1 to 2 ha, 2 to 10 ha, 10 to 50 ha, 50 to 100 ha, and more than 100 ha. Constructed using county-level data reported by the [Königlich Preußisches Statistisches Bureau \(1861–1934, vol. 76c\)](#).

**Indu. employment (share).** The total number of a county’s inhabitants employed in mining and industry in 1882 divided by the county’s population in 1880, constructed using county-level data reported by the [Königlich Preußisches Statistisches Bureau \(1861–1934, vol. 76b\)](#).

**Urbanization (share).** The total number of inhabitants across cities that held city rights in a county in 1875, divided by the county’s population in 1875, constructed using city- and county-level data reported by [Königlich Preußisches Statistisches Bureau \(1861–1934, vol. 42\)](#).

**Protestants (share).** The number of a county’s inhabitants that belonged to the Protestant religious denomination in 1871, divided by the county’s population in 1871, constructed using county-level data reported by [Königlich Preußisches Statistisches Bureau \(1861–1934, vol. 30\)](#).

**Never migrated (share).** The number of a county’s inhabitants that live in the same municipality in which they were born in 1871, divided by the county’s population in 1871, constructed using county-level data reported by [Königlich Preußisches Statistisches Bureau \(1861–1934, vol. 30\)](#).

**Linguistic frac. (Herfindahl).** The Herfindahl index of (ethno-)linguistic diversity calculated using the number of a county  $c$ ’s inhabitants whose mother tongue was German or

any of the  $k = 20$  other languages  $p$ . Constructed using the following equation  $1 - \sum_{k=1}^K p_{kc}^2$  based on county-level data reported by [Königlich Preußisches Statistisches Bureau \(1861–1934, vol. 177c\)](#).

**Literacy rate.** The number of a county’s inhabitants aged 10 and above that were able to read and write in 1871, divided by the county’s population aged 10 and above in 1871, constructed using county-level data reported by the [Königlich Preußisches Statistisches Bureau \(1874\)](#).

**Total tax (per capita).** The total amount of direct taxes, including class tax (*Klassensteuer*), classified income tax (*classifizierte Einkommensteuer*), land and property tax, and trade tax collected in a county for the budget year 1877/1878 (ranging from April 1877 to March 1878) divided by the county’s population in 1875, constructed using county-level data reported by the [Königlich Preußisches Statistisches Bureau \(1864–1905, vol. 7\)](#). These data are not available for the 26 city counties.

**Number of uprisings 1816-67.** The number of violent protests, each involving at least 20 participants, in a county during the 1816-1867 time period, constructed using data reported by [Tilly \(1990\)](#) on the location and timing of such protests.

**Large firms (dummy).** Dummy is equal to one if constituency belongs to the upper quartile of the distribution of the share of firms with at least 5 employees according to the firm census of 1875. Constructed using county-level data reported by [Königlich Preußisches Statistisches Bureau \(1861–1934, vol. 40\)](#).

## C.2 MP-level variables

The following variables were taken from a TUSTEP dataset kindly shared by Thomas Kühne. The corresponding source is [Kühne \(1994b\)](#).

**Publ. admin.** The share of election periods an MP reported an occupation in the public administration, public service, public judiciary, or military.

**Agriculture.** The share of election periods an MP reported landownership or peasantry as main occupation.

**Industry.** The share of election periods an MP reported to be occupied in manufacturing or industrial production, to be a merchant, banker, or shipmanager.

**Service.** The share of election periods an MP reported to be a lawyer, physician, architect, apothecary, writer or similar.

**Clergy.** The share of election periods an MP reported to be a priest or similar.



**Education.** The share of election periods an MP reported to be a teacher, professor or similar.

**Protestant denom.** The share of election periods an MP reported to be of Protestant faith.

**Catholic denom.** The share of election periods an MP reported to be of Catholic faith.

**Jewish denom.** The share of election periods an MP reported to be of Jewish faith.

**Unknown denom.** The share of election periods the faith of an MP was not reported.

**Non-resident.** The share of election periods an MP reported his place of residence was not located in his constituency.

**Noble title.** The share of election periods an MP's name includes the term Freiherr, Graf, Baron, Edler Herr, Prinz, von, vom, am, aus dem, de, du, van, or zur.

**Academic title.** The share of election periods an MP's name is preceded by the title Dr. or Dipl. Ing.

**Retired.** The share of election periods an MP was listed as retired from his occupation.

**MP in Reichstag.** Unity if MP was also MP in the Reichstag at any point in time before 1903.

**RCV part. (share).** The number of roll call votes in which the MP voted Yea, Nay or abstained, divided by the total number of roll calls.

**Elec. margin.** Mean margin of victory across election periods, defined as the share of votes the MP received in the second stage of voting where the electoral delegates elect the members of the Prussian House of Representatives.

**Elec. turnout.** Mean turnout across election periods, defined as the share of electoral delegates that voted in the election for the members of the Prussian House of Representatives, divided by the total number of electoral delegates.

**No. of MPs.** The total number of MPs elected to the Prussian House of Representatives from the constituency.

Table C.1: Constituency-level summary statistics

Variable	Mean	SD	Min	Max	Obs.
Vote inequality	0.533	(0.040)	0.401	0.603	256
Vote inequality 1861	0.512	(0.037)	0.413	0.616	175
Landownership inequality	0.742	(0.107)	0.415	0.933	256
Indu. employment (share)	0.122	(0.057)	0.032	0.301	256
Urbanization (share)	0.303	(0.230)	0.000	1.000	256
Protestants (share)	0.679	(0.356)	0.004	0.999	256
Linguistic frac. (Herfindahl)	0.104	(0.172)	0.001	0.690	256
Never migrated (share)	0.586	(0.119)	0.338	0.926	256
Literacy rate	0.885	(0.123)	0.422	0.991	256
Total tax (per capita)	4.569	(1.687)	0.411	12.074	239
Large firms (dummy)	0.256	(0.437)	0.000	1.000	254

*Notes:* Descriptive statistics for variables measured at the constituency level

Table C.2: MP summary statistics

Variable	Mean	SD	Min	Max	Obs.
<i>Political orientation</i>					
Liberal-conservative	0.020	(0.395)	-0.952	0.936	1903
Secular-religious	0.009	(0.323)	-0.838	0.906	1903
<i>Constituency characteristics</i>					
Vote inequality	0.534	(0.039)	0.401	0.603	1903
Vote inequality 1861	0.512	(0.035)	0.413	0.616	1544
Landownership inequality	0.753	(0.103)	0.415	0.933	1903
Indu. employment (share)	0.124	(0.060)	0.032	0.301	1903
Urbanization (share)	0.313	(0.225)	0.000	1.000	1903
Protestants (share)	0.646	(0.362)	0.004	0.999	1903
Linguistic frac. (Herfindahl)	0.119	(0.184)	0.001	0.690	1903
Never migrated (share)	0.574	(0.115)	0.338	0.926	1903
Literacy rate	0.870	(0.127)	0.422	0.991	1903
Total tax (per capita)	4.352	(1.512)	0.411	12.074	1781
Large firms (dummy)	0.255	(0.436)	0.000	1.000	1894
<i>MP occupation</i>					
Publ. admin	0.413	(0.487)	0.000	1.000	1903
Church	0.037	(0.189)	0.000	1.000	1903
Industry	0.101	(0.297)	0.000	1.000	1903
Agriculture	0.357	(0.475)	0.000	1.000	1903
Education	0.037	(0.186)	0.000	1.000	1903
Service	0.113	(0.312)	0.000	1.000	1903
<i>MP religious denomination</i>					
Unknown denom.	0.139	(0.346)	0.000	1.000	1903
Protestant denom.	0.628	(0.483)	0.000	1.000	1903
Catholic denom.	0.227	(0.419)	0.000	1.000	1903
Jewish denom.	0.006	(0.076)	0.000	1.000	1903
No denom.	0.000	(0.000)	0.000	0.000	1903
<i>MP biographic information</i>					
Non-resident	0.245	(0.428)	0.000	1.000	1903
Academic title	0.170	(0.376)	0.000	1.000	1903
Noble title	0.306	(0.461)	0.000	1.000	1903
Retired	0.080	(0.263)	0.000	1.000	1903
<i>MP RCV and election results</i>					
RCV part. (share)	0.166	(0.121)	0.046	0.848	1903
Elec. margin	0.728	(0.153)	0.500	1.000	1898
Elec. turnout	0.903	(0.090)	0.377	1.000	1896
No. of MPs	1.945	(0.642)	1.000	3.000	1903

Notes: Descriptive statistics for variables measured at the individual MP level (except No. of MPs)

## D The cutting line procedure in Optimal Classification

The OC method classifies a matrix of yea and nay votes. It interprets votes of MPs as revealed preferences from a choice between a proposed policy and the status quo. The underlying assumptions are that legislators have Euclidean preferences defined over the policy space and that they vote sincerely for the alternative closest to their ‘ideal point’. Since neither the exact position of the proposed policy nor the status quo is known, we only observe two positions reflecting ‘yea’ or ‘nay’ votes. These two positions can be intersected by a cutting line separating groups of legislators with different positions. To illustrate how we operationalize political orientation using the two-dimensional policy space, we show the cutting lines of our five specific RCVs within the corresponding policy space of the election period during which the RCV took place.

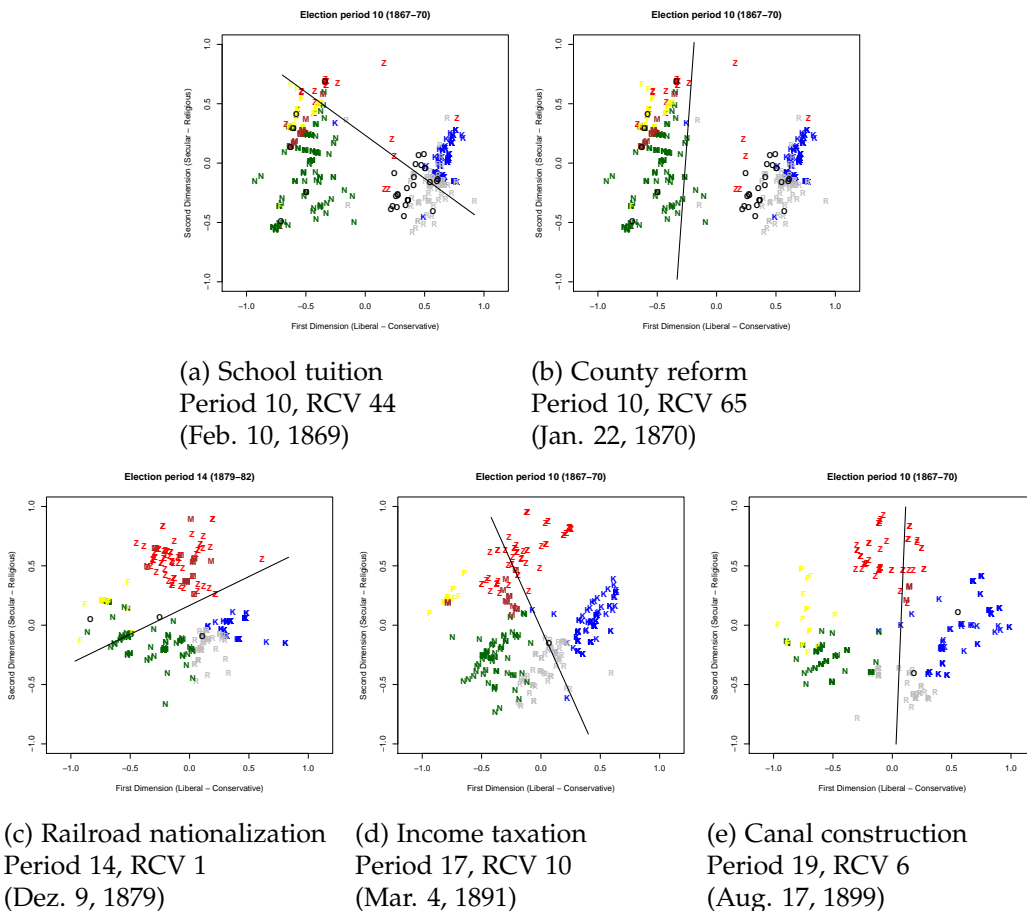
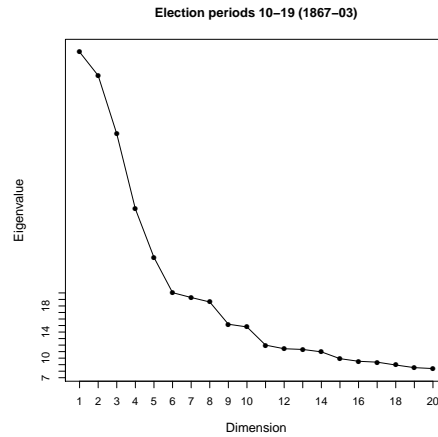


Figure D.1: Voting behavior in selected roll calls

*Positions of MPs in the Prussian House of Representatives. Each shape represents the orientation of an MP according to his votes during the full election period. The cutting line separates between yea and nay votes in the specified RCV.*

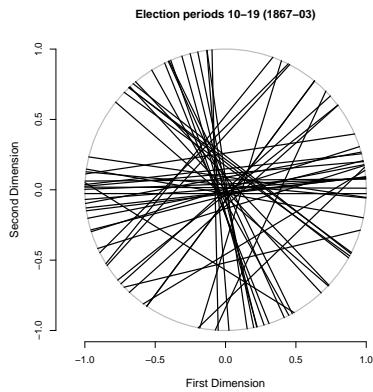
## E Supplementary results

This section contains supplementary information and robustness tests related to the Optimal Classification method and the main results.



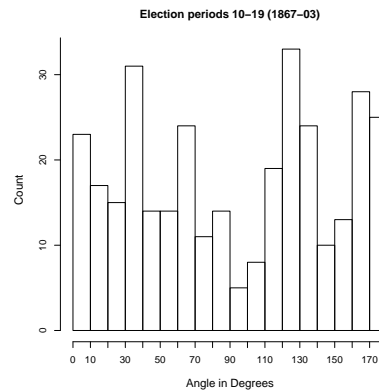
### (a) Scree plots

*Eigenvalues computed on the basis of the agreement matrix between representatives. The faster the eigenvalues fall off, the stronger the evidence that only a small number of dimensions is required to describe systematic variation in voting patterns.*



### (b) Cutting lines

*Lines separate between MPs voting yea and nay during roll calls. The angle of the lines indicates dimensionality of the content of the vote.*



### (c) Angles

*Angles show a histogram of cutting line angles as presented in Figure E.1b*

Figure E.1: Additional output plots from the OC procedure.

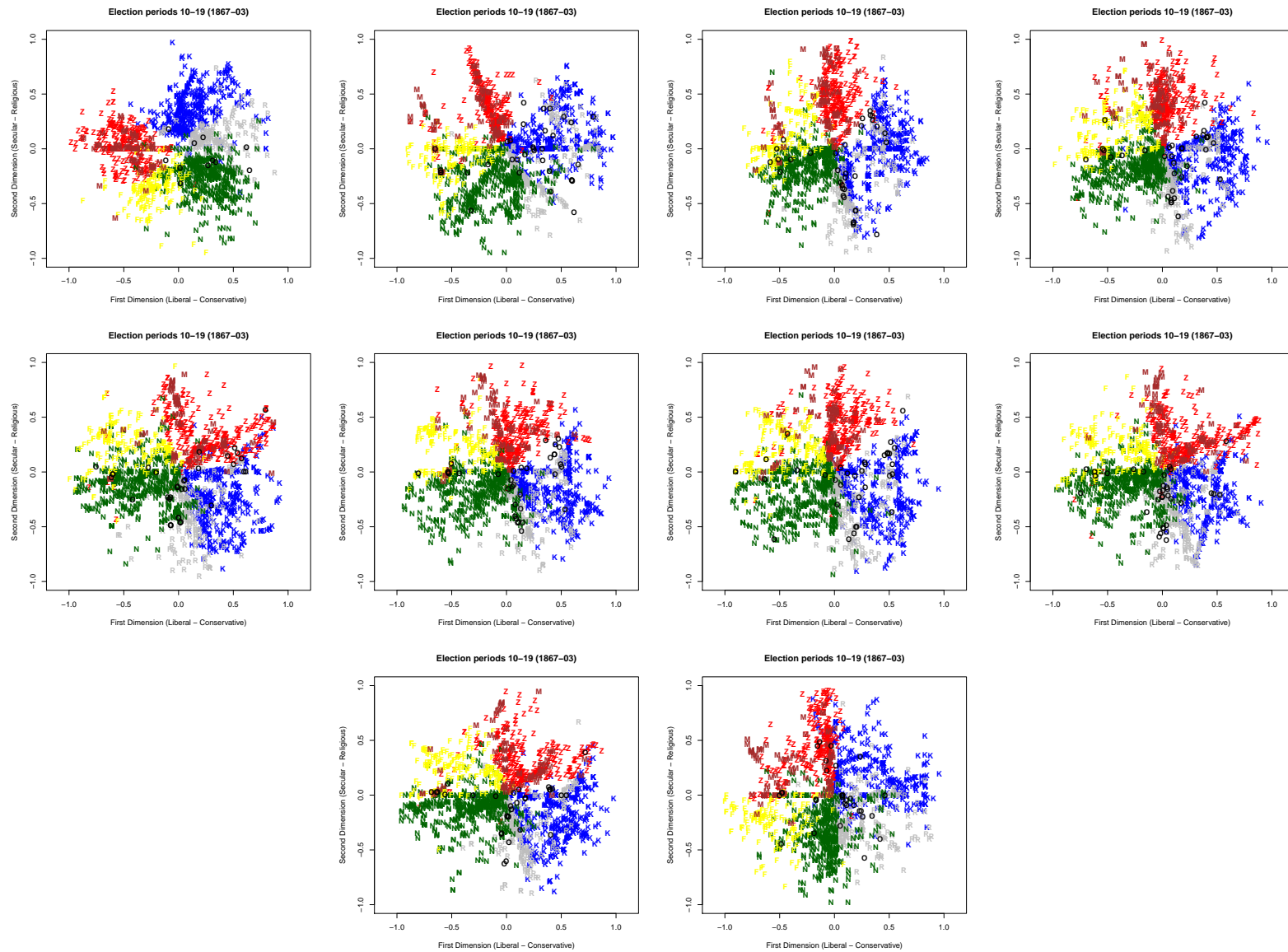


Figure E.2: The Prussian policy space, sequentially dropping election periods.

*Positions of MPs in the Prussian House of Representatives. Each shape represents the political orientation of an MP based on his voting behavior during roll calls in the period 1867–1903. In each shape, we dropped RCVs for one election period, starting with period 10 in the upper left panel.*

Table E.1: Pre-treatment controls only

	Liberal-conservative orientation			Secular-religious orientation		
	Pre-treatment (1)	Geo coord. (2)	District FE (3)	Pre-treatment (4)	Geo coord. (5)	District FE (6)
Vote inequality 1861	-1.069* (0.553)	-1.349*** (0.518)	-1.518*** (0.563)	0.184 (0.472)	-0.109 (0.438)	-0.222 (0.438)
Landownership inequality 1849	0.265 (0.216)	0.270 (0.249)	-0.262 (0.164)	-0.353*** (0.101)	-0.306*** (0.116)	-0.333*** (0.094)
Indu. employment (share) 1849	-2.172*** (0.763)	-1.776** (0.785)	-0.591 (0.591)	-0.989** (0.401)	-0.533 (0.384)	-0.488 (0.447)
Urbanization (share) 1849	-0.282* (0.165)	-0.236 (0.163)	-0.428*** (0.162)	-0.310*** (0.106)	-0.270** (0.107)	-0.182* (0.105)
Protestants (share) 1849	0.091** (0.036)	0.015 (0.064)	-0.141* (0.074)	-0.264*** (0.028)	-0.339*** (0.049)	-0.501*** (0.067)
Non-German language speakers (share) 1861	-0.099 (0.065)	-0.155* (0.082)	-0.147* (0.088)	-0.098* (0.052)	-0.119** (0.060)	-0.025 (0.067)
Primary school enrollment (share) 1849	0.521*** (0.165)	0.695*** (0.211)	0.675*** (0.219)	0.105 (0.115)	0.284 (0.174)	0.199 (0.162)
Longitude and latitude	No	Yes	Yes	No	Yes	Yes
District FE	No	No	Yes	No	No	Yes
Observations	1497	1497	1497	1497	1497	1497
R-squared	0.09	0.09	0.19	0.15	0.15	0.21

This table reports results of OLS regressions. *Columns 1–3*: Positive values of the dependent variable are interpreted to reflect higher levels of conservative orientation; negative values reflect liberal orientation. *Columns 4–6*: Positive values of the dependent variable are interpreted to reflect higher levels of adherence to the church; negative values reflect secular orientation. Standard errors, clustered at the constituency level, in parentheses. \*\*\* denotes statistical significance at the 1% level, \*\* at the 5% level, and \* at the 10% level.