Rewriting the Social Contract:
Elite Response to Labor Unrest [*]

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Last update: October 7, 2024

Abstract

We study how autocratic elites modify the social contract in response to social unrest. Elites in early 20th-century Prussia were legitimized through unequal voting rights but faced mounting threats of mass mobilization. Using labor strikes as proxy for mobilization, we find that locations with higher revolutionary pressure witnessed increased spending on redistributive public goods, public bourgeois support for suffrage reform, and parliamentary support for franchise extension—conditional on bourgeois support. This correlational evidence is bolstered with placebo checks and a shift-share instrumental variable approach that relates industry-specific international commodity price changes to Prussian regions based on industry exposure.

Keywords: Labor Unrest, Elites, Redistribution, Franchise Extension

JEL Codes: J52, D74, N33, P0

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1   Introduction

Episodes of structural transformation and technological change produce significant improvements in the standard of living. They also produce intense social conflict as the size and distribution of the economic pie changes. Historically, such social conflict generated political movements demanding changes in the social contract: around the turn of the 20th century, socialists, communists, progressives, and the labour movement (along with civil rights activists and women's rights movements) emerged and mobilized the masses to demand social and political change.

Few settings were as dramatically contested as Prussia. Following the legalization of the socialist party, a mounting wave of labor strikes emerged to articulate the demands of the people. Despite this strong labor movement with levels of mobilization above those of any other European country at the time (see Appendix Figure A.1), Prussia did not democratize until after WWI. The so-called three-class-franchise that weighed votes according to tax contributions and thereby granted disproportionately high political influence to the top income earners remained in place until 1918 (Becker and Hornung, 2020).

In this paper we study the impact of labour unrest on the Prussian social contract. We find that higher regional intensity of strikes produced a reallocation of resources: local public spending shifted toward education and health—priorities of the Social Democrats. We do not find evidence of substantial local crackdown: local security spending did not increase in response to strikes. We find evidence that labor mobilization changed elites' perception of the adequate social contract: bourgeois support for an expanded franchise significantly increased in response to labour unrest. Where unrest and bourgeoisie support coincide, politicians, too, voted for franchise extension.

We use detailed data on the intensity of all labor strikes across Prussian localities during the heyday of the labor movement in 1899–1905. While strikes ostensibly protested labor issues, political elites associated them with revolutionary tendencies. Rightly so, as the Social Democratic Party, in particular, viewed labor strikes as a political tool for achieving broader objectives, including expanding the franchise, as advocated by Rosa Luxemburg.

To identify exogenous variation in strike intensity, we generate a shift-share instrumental variable that maps industry specific changes in international commodity prices to Prussian regions, depending on their exposure to this industry. We use commodity price changes in global markets,

which are arguably exogenous to local economic conditions in Prussia and map these price shocks into Prussian regions by the relative prevalence of each industry in the respective Prussian locality, compared to the industry's importance in other Prussian localities.

First, we study whether strike intensity is associated with redistribution using data on expenditures across 103 Prussian cities for 1898 and 1908. Public goods that could be classified as redistributive were largely provided in cities, where local councils, elected via the three-class-franchise, commanded over taxes and expenditures. We find that cities with higher strike intensity had stronger increases in the expenditure share for redistributive purposes.

Second, we study whether bourgeois support for franchise extension was stronger in regions with higher strike intensity. In 1909, the liberal newspaper 'Berliner Tagesblatt' issued a proclamation to abolish the three-class franchise. This plea received empire-wide support and was signed by 813 well regarded individuals from 159 cities, largely consisting of industrialists and intellectuals. This bourgeois support for franchise extension is significantly higher in regions with higher strike intensity.

Third, we study political support for franchise extension in parliament. While voting rights were not extended until after WWI, there were several attempts to abolish the three-class-franchise through the political process in parliament. We use a roll-call vote from 1912 to estimate the effect of mass mobilization on support for the reform. Different than support for franchise extension expressed in the newspaper, this vote constitutes binding support for voting reform. We find that members of the Prussian parliament did not respond to higher strike intensity. However, in regions with higher level of unrest *and* bourgeois support, the likelihood of voting in favor of franchise reforms is significantly increased.

Our findings contribute to our understanding of the role of social movements in shaping policy outcomes. Most closely related work by Ellman and Wantchekon (2000) and Archibong, Moerenhout and Osabuohien (2022), however, study how protests affect policy outcomes in democratic settings, contexts that sharply deviates from ours. In this paper we show that protests shape policies and the views of the powerful even in autocratic settings, where protesters are not enfranchised. We also deviate from literature focusing on protest-induced political and institutional change that do not focus on policies such as Madestam et al. (2013), Aidt and Franck (2015), and Mazumder (2018).

By showing that protest induce redistribution without altering the franchise we move beyond standard models in the spirit of Meltzer and Richard (1981) and relate more closely models in the spirit of Acemoglu and Robinson (2000). In such models, threatened elites extend the franchise only if their commitment to future redistribution is not credible, i.e., if the threat of mass mobilization is permanent. Our paper thus relates to a literature studying how franchise systems are adjusted in response to revolutionary threats (Aidt and Jensen, 2014; Lehmann-Hasemeyer, Hauber and Opitz, 2014; Aidt and Franck, 2015; Ziblatt and Dasgupta, 2015; Castañeda Dower et al., 2018; Seghezza and Morelli, 2019).[1] We add to this literature by examining a setting with high mobilization capacity and study the elite's response for a much broader set of outcomes that define the social contract.

Finally, we relate to literature arguing that elites relinquish power and political representation because they find it beneficial. According to these, franchise extension occurs when elite interests partly align with mass interests, e.g., when capitalist elites benefit from mass investment in human capital and health of workers or when they can direct public goods to swing voters (Lizzeri and Persico, 2004; Doepke and Zilibotti, 2005; Galor and Moav, 2006; Galor, Moav and Vollrath, 2009; Hollenbach, 2021; Krieger, 2022). In our setting, demand for voting reforms by the workers finds more support from intellectuals than from capitalists indicating that political alignment plays a more important role than personal gain or fear of revolution.

2 Historical background and data

2.1 German labor movement and strike activity

Following the repeal of 'Socialist Laws' that constituted an effective ban of unions in the German Empire in 1890, the labor movement gained momentum improving the conditions of the working class (Kittner, 2005). This period saw a tenfold increase in strike activity between 1891 and 1899, peaking in 1905 with half a million active strikers in more than 2,500 individual strikes, despite legal restrictions such as penalties for inciting strikes and the informal blacklisting of agitators by

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[1]Castañeda Dower et al. (2018) find that the relationship between redistribution and unrest is weaker in districts without representation, which contradicts the idea that redistribution and democratic participation are substitutes.

employers (Boll, 1992; Tenfelde, 1984). Notably, there were 1.9 arrests per 1,000 strikers during 1899–1904, underscoring the state's efforts to suppress this surge in labor unrest (Volkmann, 1978).

While the strikes officially focused on improving wages and working conditions, they were strategically exploited for political purposes by the Social Democrats. Highlighting the labor movement's strategic use of strikes, August Bebel (founder and chairman of the Social Democrats) remarked, "The political mass strike [. . .] should and must be used if necessary," while Rosa Luxemburg pointedly added, "This shameful franchise can only give way to a franchise storm by the great masses," together advocating for strikes as a means to challenge and potentially overthrow the Prussian electoral system.[2] The elite's fear of revolution was apparent, with Robert von Puttkamer, the Prussian Secretary of the Interior, interpreting labor disputes as precursors to "preparing the sentiment for a violent revolution" (Saul, 1981). This concern led Wilhelm II to authorize extreme measures, ordering the shooting of strikers who resisted government forces (Kittner, 2005).

To capture the publicly perceived threat to elite rule and the franchise system, we use newly digitized administrative data on all 10,714 strikes in the German Empire from 1899 to 1905 (Kaiserliches Statistisches Amt, 1900). We derive regional variation in threat intensity, our primary variable of interest, by geo-locating each strike and calculating the average annual number of participants in a given location.[3] Figure 1 panel (a) depicts strike intensity across the 110 Prussian cities with more than 25,000 inhabitants, while panel (c) depicts strike intensity at the constituency-level, illustrating the geographical distribution of labor unrest.

2.2 Prussian Franchise System and Elite response

Prussia's highly unequal three-class franchise limited political participation by weighting votes according to tax contributions, resulting in the top 4% of income earners holding as much voting power as the bottom 82%—a suppression of the working classes political voice by design (Schneider, 1989; Peter, 2000). Due to this system, the SPD only broke into the Prussian Parliament in 1908,

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[2]Rosa Luxemburg's views were highly influenced by the Belgian and Swedish general strikes that demanded universal and equal suffrage in 1902 and especially the 1905 Russian Revolution where spontaneous mass strikes led to the adoption of the constitutional monarchy.

[3]The data not only provides detailed insights into the date, duration, and demands of each strike but also enables the creation of various alternative measures of intensity?such as frequency and duration of strikes, and distinctions between offensive/defensive and successful/unsuccessful strikes?for robustness checks.
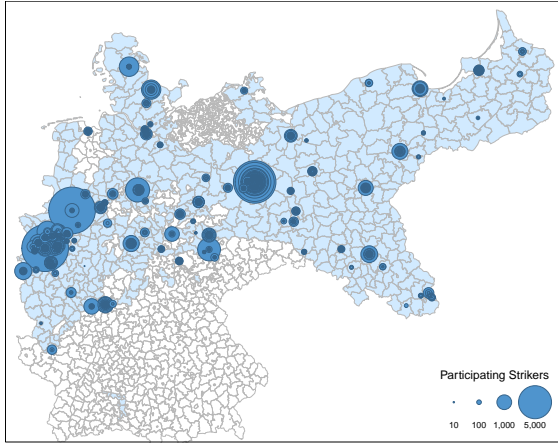
(a) Strike intensity 1899–1905, city level
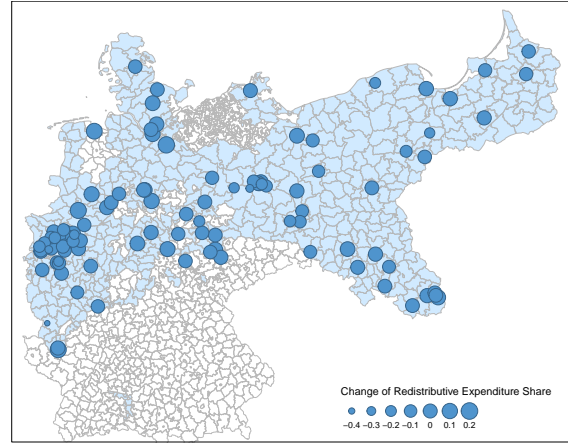
(b) Δ redistribution 1898–1908
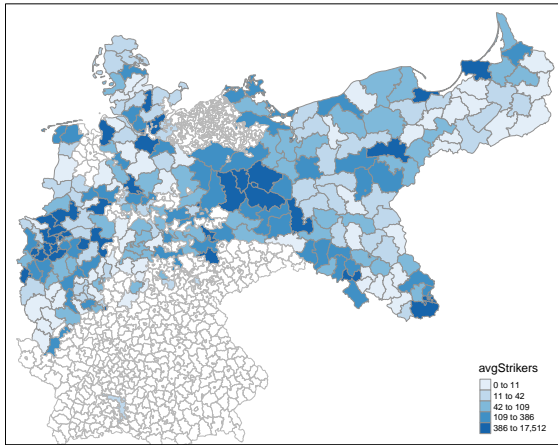
(c) Strike intensity 1899–1905, constituency level
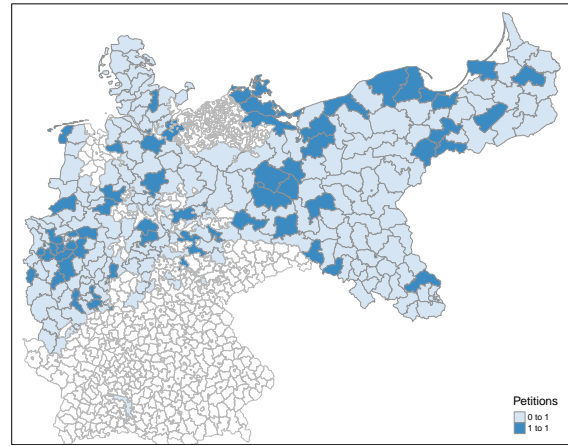
(d) Bourgeois support 1908
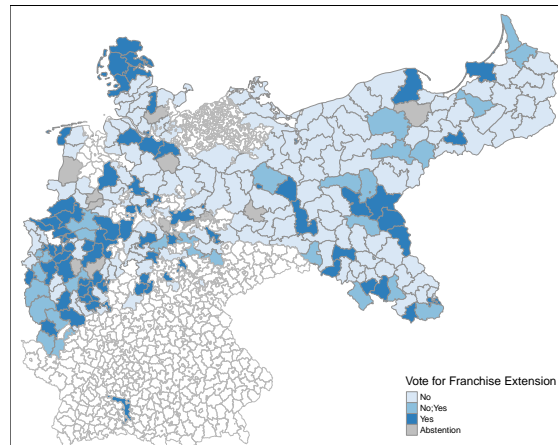
(e) Roll call vote on franchise extension 1912

Figure 1: Regional Variation in Labor Unrest and Elite Reaction

Notes. Panels (a) and (c) depict city/constituency-level strike intensity, i.e., the average annual number of workers participating in strikes in a location (1899–1905). Panel (b) depicts city-level changes in redistribution, i.e., the difference in the expenditure share of public funds spent on education and health between 1908 and 1898. Panel (d) depicts constituency-level bourgeois support, i.e., an indicator that is equal to one if a newspaper petition to abolish the franchise was signed by a resident of this constituency. Panel (e) depicts results from a roll call vote on franchise extension in the Prussian parliament in 1912 (for more details see main text).

contrasting sharply with their success in the German Empire's parliament where an equal voting system allowed them to secure the largest vote share already by 1890. Franchise reform was a recurring topic in Prussia's public debate and a major objective of the SPD. Yet, attempts to reform were repeatedly blocked by the landowning elites in parliament (Ziblatt, 2008). The resulting political landscape left the working class with minimal influence over politics, leaving unrest as their primary recourse to convince the elite to devise a more equitable social contract.

Redistribution   To study changes in redistribution prior to franchise reforms in 1918, we focus on shifts in city budgets. Domestic policy was the responsibility of the German states and public goods including health, education, and poor relief were determined at the municipality level. City councils, elected via the three-class franchise had the autonomy to set taxes and allocate funds (Marcinowski and Hoffmann, 1890; Spoerer, 2002, 2004; Wehler, 2007; Hollenbach, 2021).

We use newly digitized budget data from the 110 Prussian cities with more than 25,000 inhabitants from Silbergleit (1908). We argue that, among ten predefined expenditure categories, budgets for education (incl. institutes for fine arts) and health (including poor relief and orphan care) specifically benefit the working class, thus classifying them as redistributive following the literature (Minkoff, 2009; Craw, 2006). The other categories—treasury, general administration, tax administration, public safety, utilities, construction, public debts, and miscellaneous—are labeled non-redistributive. The dataset spans 1888, 1898, and 1908, allowing us to compute changes in the share of expenditures by category c relative to changes in total spending cross cities i as follows: $\Delta ExpendShare_{c,i,1898--1908} = (\frac{Expend_{c,i,1908}}{ExpendTotal_{i,1908}} - \frac{Expend{c,i,1898}}{ExpendTotal_{i,1898}}) * 100$. The use of fractions allows us to compare relative spending shifts, neutralizing the effect of absolute expenditure differences across cities, and to exploit changes in spending potentially linked to labor unrest occurring during the period of observation. Figure 1 panel (b) shows changes expenditures used for redistributive public goods between 1898 and 1908 across Prussian cities.

Bourgeois support   On December 7 and 11, 1909, the liberal newspaper 'Berliner Tageblatt' published a proclamation to abolish the three-class franchise signed by the German elite in science, industry, and culture. This plea aimed at "breaking the agrarian-conservative domination of Prussia" and showing that there was indeed a "wish to reform the franchise system among parts of

the elite". It was endorsed by 813 signees, including prominent figure such as Gerhart Hauptmann, Engelbert Humperdinck, Georg Simmel, and Max Weber. XY Noam: please check if you know any of these figures and delete the rest!

We digitized name, location, and occupation of signees and geolocated 504 of them in Prussia, 302 in other German regions, and 7 outside of the Empire. In regression analysis, we use an indicator for Prussian constituencies with at least one signee. Results will, however, be robust to using a count variable. We further distinguish signees as 'capitalists' (123 signees) and 'intellectuals' (370 signees) based on occupation and use the corresponding indicator in the analyses.[4] Figure 1d panel (d) indicates constituencies with signee presence, depicting the reform's bourgeois support base.

Franchise reform voting   On May 20, 1912, a vote in the Prussian House of Representatives on replacing the three-class franchise with general, direct, and secret elections fell short by 30 votes: 158 in favor, 188 against, and 91 abstentions, including 47 unexcused (see Figure A.3 in the Appendix). While all yea and nay votes were in party-line, unexcused abstentions were arguably used strategically by members of parliament belonging to parties voting in favor of the reform to prevent the new legislation from passing. If the 47 unexcused absentees had participated and voted according to party line, the vote could have led to the franchise's abolition.

We code parliamentary support for franchise reform as an indicator that assumes the value one, if delegate j in constituency i voted in favor of the reform and against as zero. Abstentions and excused absences are excluded from this coding, but unexcused absences are considered opposition to the party line, following Ziblatt (2008). Figure 1e panel (d) shows the regional distribution of votes. Due to multi-member constituencies, the map includes an additional category for constituencies with opposing votes.

2.3   Control Variables

The relationship between labor unrest and various aspects of the social contract will be conditioned on a host of controls for local geographical conditions and socio-economic development derived from

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[4]We categorize a signee as intellectual if their occupation is (university) teacher, artist, physician, legal practitioner, cleric, or public administrator. We drop five signees who indicated landowner as occupation in regressions distinguishing capitalist and intellectuals.

raster data and historical censuses. Driven by the dependent variable's level of observation, right-hand side variables may reflect characteristics of the county surrounding a city or are aggregated from the county level to the constituency level, where a Prussia constituency contains three counties on average. For details on the construction of controls, see Online Appendix B.

Geographical controls Latitude, longitude, altitude, as well as monthly temperature (Source and level of detail?) and precipitation levels from DWD Climate Data Center (2019) (level of detail?) aim to capture spatial trends in Germany economic development. Distance to nearest navigable river based on a historical map by IEG (2010) and distance to nearest carboniferous rock strata based on a shapefile by Asch (2005) aim to capture spatial variation in the location of trade and industry.

Development controls In our preferred specifications, we condition on a number of characteristics that potentially confound the relationship between strike intensity and the outcomes variables. These variables were obtained from Thome (2006) include the population share of workers employed in the industrial sector in 1895, the population share of Protestants in 1900, the urban population share in 1900, a gini coefficient for landownership inequality in 1895, and the population share of non-German speakers in 1900.

Table 1: Summary statistics

Variable	Obs.	Min	Mean	Max	SD
Strike intensity	103	0.00	525.73	16464.57	1899.83
arcsinh(Strike intensity)	103	0.00	5.48	10.40	1.70
Δ redistributive expenditure share	103	-42.51	-3.77	18.08	10.13
Strike intensity	259	0.00	369.66	17512.00	1646.38
arcsinh(Strike intensity)	259	0.00	4.59	10.46	2.15
Signee indicator	259	0.00	0.27	1.00	0.44
Strike intensity	391	0.00	824.60	17512.00	3073.92
arcsinh(Strike intensity)	391	0.00	4.95	10.46	2.30
Reform voting (Yea/nay+unexcused)	391	0.00	0.40	1.00	0.49

Notes: Table shows summary statistics for main variables at the city level (103 obs.), constituency level (259 obs.), and at the MP level (391 obs). XY: Let's discuss how to add controls...which level of observation?

3 Empirical strategy

To assess whether labor affected various aspects of the social contract, we estimate versions of the following equation:

$$Y_i = \beta_0 + \beta_1 Strike\ intensity_{i,1899-1905} + \gamma X_i' + \epsilon_i \tag{1}$$

where Y_i are the various outcomes described in Section 2.2. Depending on the outcome, subscript i reflects variables measured at the city- (redistribution), constituency- (bourgeois support), or MP-level (franchise reform voting). $Strike\ intensity_{i,1899-1905} = \frac{1}{7}\sum_{t=1899}^{1905} Strikers_{i,t}$ is the average annual number of workers participating in strikes between 1899 and 1905. We sum over all strikers in a city when the dependent variable is measured at the city level and over all strikers in a constituency when the dependent variable is measured at the constituency or MP level.[5] X_i' is a vector of geographical and development controls described in Section 2.3, defined at the county-level if the dependent variable is measured at the city level or at the constituency level when the dependent variable is measured at the constituency or MP level.

3.1 Identification

Any of our results may be subject to omitted variable bias since labor unrest is not exogenous to local socio-economic conditions that correlate with our outcomes. While the control variables aim to capture such heterogeneity, there likely remains unobserved heterogeneity. When inspecting a city's expenditures, we partly address this issue by using the first difference in expenditures, thus holding expenditure levels fixed. Furthermore, we use expenditure data from 1888 in a placebo check. However, since this is not possible for other outcomes, we resort to an instrumental variable approach, to test the robustness of our results. This approach resembles a shift-share or Bartik IV instrumental setup that combines time-series variation in global commodity prices with spatial variation in the exposure of Prussian locations to industries using the respective commodities as inputs.

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[5]Because $Strike\ intensity_{i,1899-1905}$ is a skewed count variable that has a number of zeros (XY: how many?) at the constituency level, we always transform it using the inverse hyperbolic sine (arcsinh).

To map price changes across Prussian regions, we combine employment data from the occupational census of 1895, covering all Prussian counties and combine it with real annual spot prices for 40 commodities between 1899 and 1905 from Jacks (2019). Following Autor, Dorn and Hanson (2013), we use the concordance of industries and product classes by Pierce and Schott (2009) as a baseline for matching prices into industry categories, adjusting for differences in industry categorization in the historical employment data. Out of the 107 available industry categories, we were able to match the price data of 38 commodities to 50 industries, which employ 72.7% of industrial workers in Prussia.[6] The instrumental variable used to predict strike participation is defined as:

$$Price\ shock_i = \sum_k \frac{emp_{i,k}}{\sum_i emp_{i,k}} \frac{\frac{1}{7}\sum_{t=1899}^{1905} \frac{1}{M}\sum_m |\Delta, Price_{m,k,t}|}{emp_i} \tag{2}$$

where $|\Delta Price_{m,k,t}|$ is the absolute value of the annual price change of commodity m, reflecting that price changes in either direction may change worker's participation in strikes. For industries using multiple commodities as inputs, we take the average of these absolute price changes. To match the cross-sectional setup of our estimations, we average price changes over the period for which we have strike data. Price changes are normalized by the size of the industrial labor force emp in location i. The employment shares $\frac{emp_{i,k}}{\sum_i emp_{i,k}}$ measure the relative importance of location i as an employer in industry k, and map the price shocks into Prussian locations. Price shocks are arguably exogenous to location-specific economic and political characteristics, since prices are determined on the global market and Prussian locations are price-takers. Employment data are available only at the county level. Hence, we construct the instrument at the county level when the dependent variable is measured at the city level and aggregate to the constituency level when the dependent variable is measured at the constituency or MP level.

The first stage takes the following form:

$$Strike\ intensity_{i,1899-1905} = \pi_0 + \pi_1 Price\ shock_i + \delta X_i' + u_i \tag{3}$$

where i reflects either cities or constituencies and X_i' is the vector of controls included in equation 1.[7]

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[6]See Online Appendix C for details.

[7]$Price\ shock_i$ is transformed using the inverse hyperbolic sine transformation. (XY: confirm!)

4 Results

4.1 Results: redistribution
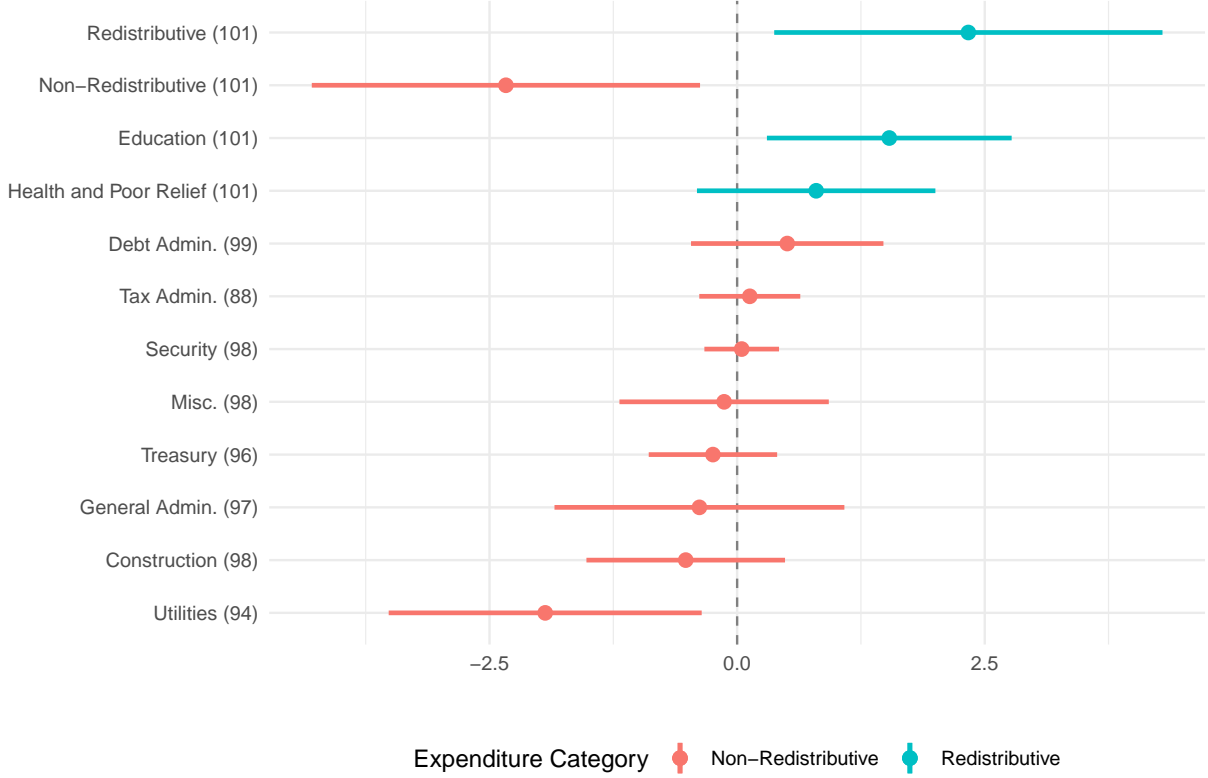
Figure 2: Labor unrest and city-level redistribution

Notes: Figure plots β_1 coefficients from estimating equation 1 at the city level using OLS. Each row replaces the outcome Y_i for one of the ten expenditure categories. 'Redistributive' expenditures comprise 'education' and 'health and poor relief'. 'Non-redistributive' comprise all others. Dependent variables and main explanatory variable (strike intensity) are standarized with zero mean and standard deviation of one. Strike intensity is transformed using the inverse hyperbolic sine (arcsinh). All regressions are conditional on geographical (longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal) and development controls (industrial employment share, Protestant share, urbanization rate, landownership inequality, non-German share). Standard errors are clustered at the county level. Bars indicate 95% confidence intervals.

Figure 2 plots β_1 coefficients showing how strike intensity affects changes in a city's expenditure categories. We highlight categories that are considered as redistributive in green and those that are non-redistributive in orange. The distinct pattern in expenditures is apparent. A one standard deviation in strike intensity increases the expenditure share by more than two standard deviations for the combined redistribution outcome, by 1.X for education, and by 0.X for health and poor relief. On the other hand, cities reduced their non-redistributive expenditure share by 3.X standard

deviations for every standard deviation increase in strike intensity. These results indicate that the city council apparently decided to shift funds towards public goods more beneficial to workers in response to labor unrest. Using alternative definitions of strike intensity generates qualitatively similar results (see Figure D.3 in the Online Appendix.)

An alternative margin of response could have been to confront the threat with force and to increase spending on policing and public security. However, Figure 2 shows are relative precisely estimated lack of a change in security spending.

To ensure that our findings are not merely reflecting trends in redistributive expenditure shifts that might have occurred in the absence of labor unrest, we conduct placebo regressions using expenditure share changes between 1888 and 1898 as the dependent variables (see Table **??** in the Online Appendix). Given that labor unrest from 1899 to 1905 should not affect spending in this earlier period, the absence of significant coefficients in these placebo tests supports our hypothesis by showing common trends in spending for redistributive purposes before 1898.

We further demonstrate the robustness of our findings using the instrumental variable approach outlined previously. Table **??** confirms the positive association between labor unrest and redistributive spending in cities, with the OLS and IV results displaying similar magnitudes. The first stage presented in Table **??** suggests that, larger shocks increase strike intensity.[8] The assumption here is that price shocks impact expenditure share changes solely via their effect on strike activity, thereby satisfying the exclusion restriction.

Aside: wages It may be interesting to see whether labor unrest affected aggregate wages, representing another potential margin of response for the (capitalist) elite. However, it is important to note that strikes could both demand wage increases and oppose wage cuts, which complicates the interpretation of changes in aggregate wages resulting from strikes. Furthermore, the available wage data pertains to day laborers, i.e., unskilled workers who typically do not engage in strike activity. Bearing these caveats in mind, our examination of average day-laborer wage changes across cities from 1892 to 1910 (Source?) reveals only modest wage increases in response to higher strike

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[8]The Kleibergen-Paap first stage F-Statistic suggests that the instrument is sufficiently strong, however, the wide Anderson-Rubin confidence interval prevents outright dismissal of the null hypothesis that strike intensity has no effect (see Montiel Olea and Pflueger, 2013).

intensity, which becomes significant when using the instrumental variable approach (see Table **??** in the Online Appendix.)

Aside: local taxes   XY Should we include tax stuff here?

4.2   Results: bourgeois support

Table 2: Labor unrest and bourgeois support for franchise reform

	Dependent variable: signee indicator				
	Prussia				Non-Prussia
	All		Capitalists	Intelligentsia	All
	OLS	IV	OLS	OLS	OLS
	(1)	(2)	(3)	(4)	(5)
Strike intensity	0.047***	0.102***	0.036***	0.049***	0.038***
	(0.013)	(0.030)	(0.009)	(0.012)	(0.008)
Geographic Controls	YES	YES	YES	YES	YES
Development Controls	YES	YES	YES	YES	YES
Kleibergen Paap F-statistic		97.72			
Anderson Rubin CI		0.04–0.17			
Observations	267	267	267	267	528
Adjusted R^2	0.300	0.260	0.302	0.300	0.187

Notes: Table shows results from estimating equation 1 at the constituency level. Dependent variable is one if constituency has at least one signee. Strike intensity is average annual number of strikers in a constituency transformed using the inverse hyperbolic sine (arcsinh). Geographical controls: longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal. Development controls: industrial employment share, Protestant share, landownership inequality, urbanization rate, non-German language share. Robust standard errors in parenthesis.

Table 2 shows higher levels of bourgeois support for franchise reform in constituencies with higher strike intensity. The positive and significant *beta*-coefficient suggests that doubling the strike intensity in a constituency is associated with a 3.5 percentage point increase in the probability of local reform support. The instrumental variable estimates presented in Column 2 suggest that the OLS estimates may understate the true effect: specifically, the same increase in strike intensity increases the probability 10.1 percentage points.[9]

There may be various reasons underlying the bourgeois support of workers' causes, including a perceived threat, personal benefits from franchise extension, or a desire to signal virtue and convictions. We aim to better discern the motivations of signees by analyzing their occupations, which potentially provide insights into their incentives. The 'capitalist bourgeoisie,' consisting of firm owners, might have supported reforms to benefit from enhanced worker health and human capital, protect their assets from revolutionary threats, or express solidarity with workers' causes, reflecting enlightened ideals. The 'intellectual bourgeoisie,' largely consisting of professors, artists,

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[9]Given that motives for bourgeois support may be directly related economic fluctuations the exclusion restriction may be violated. This appears to be less of a concern if bourgeois support reflects a deeply held ideological alignment.

and writers arguably supported reforms due to their progressive and liberal ideals, rather than immediate benefits or threats to their economic status.

Columns 3–4 reveal no significant differences in the probability of support between the capitalist and intellectual bourgeoisie in response to labor unrest. By controlling for the industrial employment share, we determine that capitalists are not primarily motivated by potential improvements in workers' conditions. However, it is not possible to distinguish their motives further between fear and ideological alignment. In contrast, as the intellectual bourgeoisie is less likely to be threatened by labor unrest, we conclude that their support for workers' causes in areas of high strike intensity reflects ideological alignment.

The newspaper call garnered support from the bourgeoisie across Germany, not just within Prussia, where most regions had already adopted more universal franchise systems. Outside Prussia, bourgeois support for franchise reform is less likely driven by local threats but rather by a desire to support the workers' cause in Prussia, signaling their own convictions, which are partly shaped by their experience with broader democracy. Column 5 indicates that bourgeois support for reform in response to labor unrest is slightly higher in regions outside Prussia. This finding suggests that ideological alignment, rather than the fear of revolution, is the primary driver of their support.

4.3 Results: franchise reform voting

Table 3: Labor unrest and roll-call voting on franchise reform

	Dependent variable: voting (yea/nay+unexcused)						
	OLS	IV	OLS	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Strike intensity	0.051***	0.144***		0.046***	0.139***	0.025*	0.047
	(0.014)	(0.025)		(0.014)	(0.027)	(0.015)	(0.031)
Bourgeois support			0.153**	0.118**	0.049	−0.625***	−0.575***
			(0.060)	(0.059)	(0.063)	(0.126)	(0.159)
Strike intensity × Bourgeois support						0.134***	0.122***
						(0.023)	(0.029)
Geographic Controls	YES	YES	YES	YES	YES	YES	YES
Development Controls	YES	YES	YES	YES	YES	YES	YES
Kleibergen Paap F-statistic		133.56			125.47		81.54
Anderson Rubin CI		0.09–0.21			0.08–0.21		
Observations	386	386	386	386	386	386	386
Adjusted R^2	0.219		0.205	0.226		0.274	

Notes: Table shows results from estimating equation 1 at the MP level. Dependent variable is one if an MP voted yea on the reform bill and zero if an MP voted nay or is absent without excuse during vote. MPs that abstained or were absent with excuse are excluded. *Strike intensity* is average annual number of strikers in a constituency transformed using the inverse hyperbolic sine (arcsinh). *Bourgeois support* is one if constituency has at least one signee. Geographical controls: longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal. Development controls: industrial employment share, Protestant share, landownership inequality, urbanization rate, non-German language share. Bars indicate 95% confidence intervals. Standard errors, clustered at the constituency level, in parenthesis.

Table 3 analyzes whether individual roll-call voting on franchise reform responded to labor unrest. OLS results presented in column 1 suggest that Prussian MPs were slightly more likely to vote for reform if their constituency experienced higher strike intensity. When using the instrumental variable approach in column 2, the likelihood of a yea vote becomes marginally significant, increasing by 4.4 percentage points with each doubling of the strike intensity. In column 3, we show that MP's voting behavior did not respond to support signals by the local bourgeoisie. These results are confirmed in columns 4 and 5 where both variables are included at the same time.

Columns 6 and 7 report results of a regression adding an interaction term between strike intensity and bourgeois support. Here, the baseline effect of strike intensity in the absence of bourgeois support is precisely estimated as zero. Conversely, the interaction term is positive and significantly different from zero, suggesting that labor unrest influenced MPs' reform voting behavior only when supported by the bourgeoisie.[10] We conclude that labor unrest alone was insufficient to alter the voting behavior of MPs.[11] In constituencies where workers and the bourgeoisie united in their demand for franchise reform, MPs either followed their demands or had already been replaced by delegates more favorable to reform in earlier elections.

In this analysis, MPs who were absent without excuse during the vote are classified as delegates supporting franchise reform but unwilling to vote against their party line. The robustness of our results, when relaxing this assumption and applying various other coding schemes, is demonstrated in Figures G.2a–G.2b in the Online Appendix.

5   Conclusion

At the turn of the 20th century, Prussia was the European country with the highest mobilization capacity. In 1905 alone, there were XX strikers per 100,000 workers. This labor unrest posed an

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[10]Note that the coefficient on the baseline effect of bourgeois support is estimated for locations with any bourgeois support but zero strike intensity—a rare situation.

[11]The existence of both a positive interaction effect (where labor unrest influences votes differently with bourgeois support) and a positive mediation effect (labor unrest enhancing bourgeois support, which in turn affects voting behavior) complicates the interpretation of our findings. Specifically, the interaction effect presented in column 5 may be underestimated because it does not account for how increased labor unrest directly boosts bourgeoisie support, which then further influences voting due to the positive interaction term (see Vanderweele, 2015). Accurately isolating these effects would require imposing strict assumptions about the exogeneity of both labor unrest and bourgeoisie support, beyond the mediated variation by exogenous labor unrest. Since we do not have a separate instrument to independently identify bourgeois support, we refrain from separately estimating the mediation and interaction effects.

inherent revolutionary threat to the autocratic elite in Prussia, who were elected via unequal voting rights, heavily favoring wealthy voters. In this paper, we study how the elite reacted to increased labor unrest. We first inspect the local reaction at the city level, focusing on expenditures for redistributive purposes. City councils had discretionary choice over taxes for income generation and city budgets, and were also elected via the unequal three-class-franchise. We find that cities responded to mass mobilization by increasing their share of spending towards redistributive public goods, including spending on healthcare facilities, poor relief and education. In a second step, we evaluate whether the workers' movement was able to sway public opinion of elites in favor of a more democratic political process. We use data from a public newspaper call for franchise reform, which was signed by over 800 individuals who can be described as the bourgeoisie elite of the German Empire, including professors, writers, artists and capitalists. We find that these elites reacted to mass mobilization with an increase in their demand for franchise extension. This appears to be driven more so by an alignment in political views rather than an imminent fear due to the revolutionary threat, as response to increased labor unrest is stronger for those who have less personal gain from avoiding revolution and improving workers' conditions. In terms of actual political support, we find that also members of the Prussian parliament were more likely to vote in favor of an extension of voting rights if they faced higher levels of revolutionary threat in their electoral district. This effect is strongest when it is paired with support of voting reform by the bourgeoisie elite.

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Appendix A   Historical background and data

FIGURE 7.1: Annual Number of Striking Workers Per Capita, 1899–1912
Data Source: Mitchell 2003, 3–8, 172–85

Figure A.1: Annual number of striking workers per capita, 1899–1912

Notes: The figure compares strike activity across European countries (Source: Ziblatt (2017, p. 228)).

Figure A.2: Call for suffrage reform in the "Berliner Tageblatt" 1909

Notes: The figure shows the call for suffrage reform on page 1 of the "Berliner Tageblatt" dating December 7, 1909.

PRUSSIA'S 1912 LEGISLATION ON REFORMING THE SUFFRAGE[a]

Party	Total Reps	Yes	No	Abstain
Conservative (K)	152	0	139	12 (0)
National Lib (N)	65	45	0	20 (13)
Center (Z)	102	58	0	44 (33)
Reichspartei (R)	59	0	49	11 (0)
Left Liberals (F)	36	33	0	3 (0)
Polish Party (P)	15	14	0	1 (1)
Social Dem (S)	6	6	0	0 (0)
Danes (D)	2	2	0	0 (0)
All	437	158	188	91 (47)

[a]Data for this are drawn from the minutes of the Prussian parliament. See Verhandlungen des Hauses der Abgeordneten 77. Sitzung, 21. Legislative Period, May 20, 1912, 6428–6432. In the abstentions column, the figures in parentheses refer to the number of delegates who "abstained without excuse."

Figure A.3: Roll call vote on franchise reform in Prussia 1912

Notes: The figure shows results from a roll call vote on franchise reform in the Prussia parliament in 1912 (Source: Ziblatt (2008, p. 228)).

Appendix B   Variable definitions

Appendix C   Matching industry categories with commodity price data

Appendix D Robustness: redistribution

Table D.1: Labor unrest and redistribution: robustness

	Dependent variable:									
	ChangeExpendRedisShare								ChangeExpendRedisShare First Stage	ChangeExpendRedisShare IV
	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
arcsinh(avgStrikers)	1.300**	2.275***	2.283***	2.238***	2.237***	2.413***	2.437***	2.335***		4.574***
	(0.634)	(0.702)	(0.714)	(0.686)	(0.679)	(0.817)	(0.817)	(0.826)		(1.453)
arcsinh(PriceShock)									0.814***	
									(0.169)	
lat		−1.993	−2.092	−1.773	−1.476	−1.310	−1.014	−1.587	0.112	−3.602
		(2.832)	(2.759)	(2.588)	(2.620)	(2.596)	(2.443)	(2.435)	(0.515)	(2.892)
lon		−0.645	−0.640	−1.293***	−1.454***	−1.406***	−1.458***	−1.629***	−0.080	−1.730***
		(0.478)	(0.507)	(0.485)	(0.477)	(0.481)	(0.533)	(0.529)	(0.079)	(0.600)
ele		−0.012	−0.014	−0.011	−0.009	−0.007	−0.004	−0.012	−0.004	−0.027
		(0.036)	(0.034)	(0.032)	(0.032)	(0.031)	(0.030)	(0.029)	(0.006)	(0.033)
temp		−7.557	−7.656*	−10.116**	−11.278***	−10.722**	−10.803**	−11.153***	0.145	−14.790***
		(4.614)	(4.554)	(4.370)	(4.319)	(4.263)	(4.335)	(4.313)	(0.739)	(5.070)
precip		0.024	0.023	−0.157	−0.268**	−0.260**	−0.276**	−0.269**	−0.008	−0.235*
		(0.089)	(0.095)	(0.097)	(0.122)	(0.122)	(0.118)	(0.115)	(0.019)	(0.137)
log(distRiver)			0.118	0.149	0.185	0.148	0.119	0.202	0.029	0.254
			(0.763)	(0.694)	(0.714)	(0.701)	(0.712)	(0.724)	(0.070)	(0.721)
arcsinh(distCoal)			−0.030	−0.057	−0.164	−0.188	−0.200	−0.109	0.018	−0.129
			(0.215)	(0.216)	(0.240)	(0.246)	(0.238)	(0.217)	(0.033)	(0.236)
indempShare				215.539***	225.114***	220.992***	221.216***	220.775***	3.203	210.180***
				(61.456)	(57.212)	(56.935)	(56.835)	(55.337)	(7.576)	(59.104)
landIneq					−0.114*	−0.118**	−0.119**	−0.119**	−0.001	−0.127**
					(0.059)	(0.059)	(0.058)	(0.058)	(0.007)	(0.061)
urbShare						−3.397	−3.363	−2.682	1.724***	−8.693
						(4.350)	(4.368)	(4.236)	(0.628)	(5.692)
protShare							−1.067	1.920	1.508*	−1.175
							(3.617)	(4.871)	(0.858)	(5.147)
foreignShare								9.989	3.013**	5.804
								(7.289)	(1.224)	(8.790)
Kleibergen Paap F-Statistic									23.3	
Anderson Rubin CI										0.8–10.25
Observations	103	103	103	103	101	101	101	101	101	101
Adjusted R²	0.038	0.089	0.070	0.151	0.178	0.173	0.164	0.164	0.447	0.072

Note: *p<0.1; **p<0.05; ***p<0.01

Notes: Table shows results from estimating equation 1 at the city level. Dependent variable is XY. Strike intensity is average annual number of strikers in a constituency transformed using the inverse hyperbolic sine (arcsinh). Robust standard errors in parenthesis.

Figure D.1: Labor unrest and city-level redistribution: IV results

Notes: Figure plots β_1 coefficients from estimating equation 1 at the city level using the price shock from equation 2 as an instrumental variable. Each row replaces the outcome Y_i for one of the ten expenditure categories. 'Redistributive' expenditures comprise 'education' and 'health and poor relief'. 'Non-redistributive' comprise all others. Dependent variables and main explanatory variable (strike intensity) are standarized with zero mean and standard deviation of one. Strike intensity is transformed using the inverse hyperbolic sine (arcsinh). All regressions are conditional on geographical (longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal) and development controls (industrial employment share, Protestant share, urbanization rate, landownership inequality, non-German share). Standard errors are clustered at the county level. Bars indicate 95% confidence intervals.
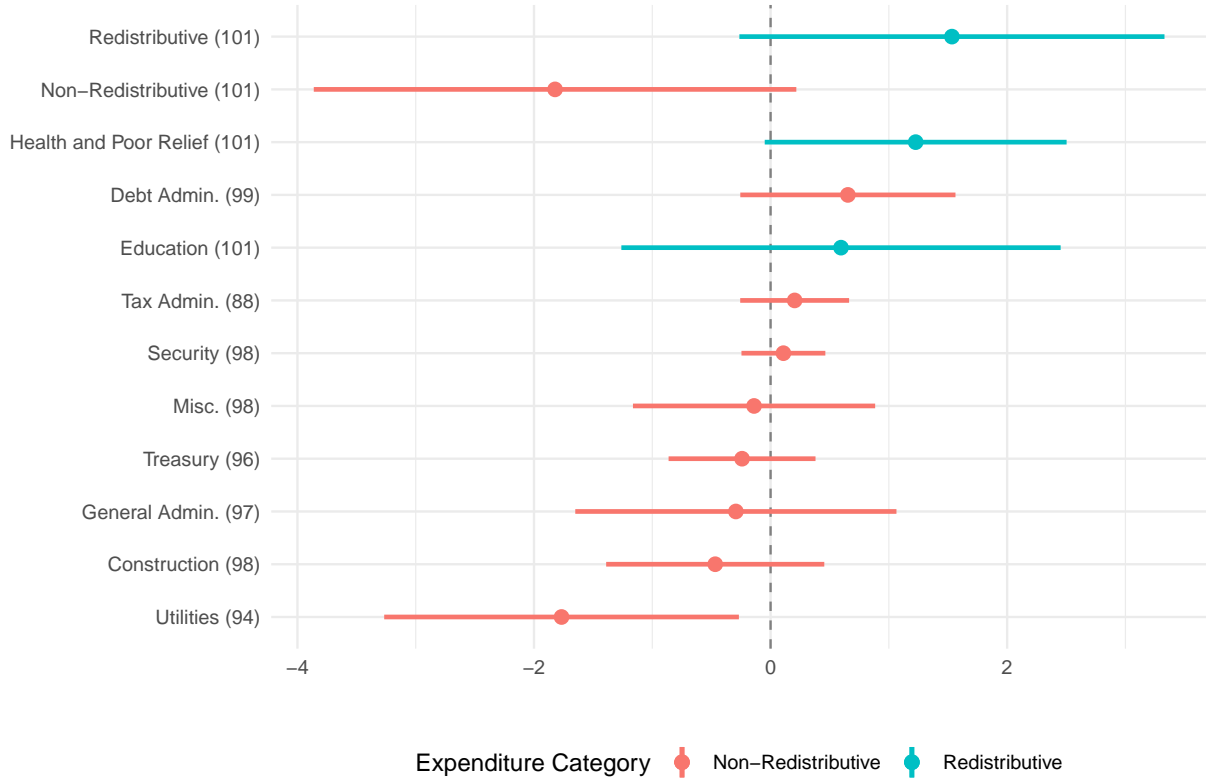
Figure D.2: Labor unrest and city-level redistribution: placebo results (1888-1898)

Notes: Figure plots β_1 coefficients from estimating equation 1 at the city level using OLS, where the dependent variable is measured as the difference in expenditures between 1888 and 1898. Each row replaces the outcome Y_i for one of the ten expenditure categories. 'Redistributive' expenditures comprise 'education' and 'health and poor relief'. 'Non-redistributive' comprise all others. Dependent variables and main explanatory variable (strike intensity) are standarized with zero mean and standard deviation of one. Strike intensity is transformed using the inverse hyperbolic sine (arcsinh). All regressions are conditional on geographical (longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal) and development controls (industrial employment share, Protestant share, urbanization rate, landownership inequality, non-German share). Standard errors are clustered at the county level. Bars indicate 95% confidence intervals.
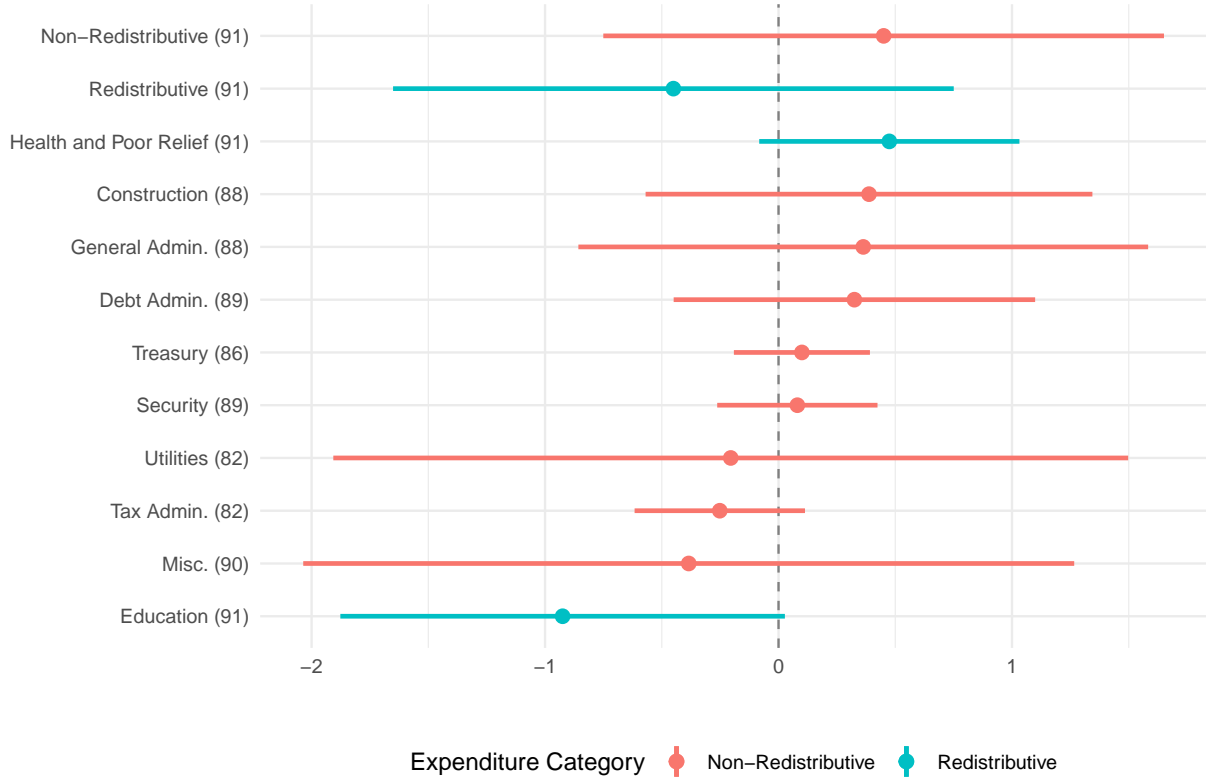
(a) OLS Results

(b) IV Results

Figure D.3: Labor unrest and redistribution, measuring strike intensity in various ways

Note: Dependent variable is change in city-level share of expenditures for redistributive public goods between 1898 and 1908. Explanatory variables are various constituency-level measures of strike intensity 1899–1905 (arcsinh transformed): average strikers (average annual number of strikers), strike frequency (average annual number of strikes), strike duration (average annual number of working days lost due to strikes), defensive strikers (average annual number of strikers with demands against wage decrease or working time increases), offensive strikers (average annual number of strikers with demands for wage increase or working time reductions), successful strikers (average annual number of strikers whose demands were met), unsuccessful strikers (average annual number of strikers whose demands were not met), political strikers (average annual number of strikers in wildcat strikes), non-political strikers (average annual number of strikers in union-approved strikes). Controls: longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal, industrial employment share, Protestant share, urbanization rate, landownership inequality, non-German share.

Appendix E   Aside: wages

	Dependent variable:		
	ChangeWage OLS	arcsinh(avgStrikers) First Stage	ChangeWage IV
	(1)	(2)	(3)
arcsinh(PriceShock)	0.016		0.095*
	(0.016)		(0.053)
arcsinh(avgStrikers)		0.792***	
		(0.163)	
Geographic Controls	YES	YES	YES
Development Controls	YES	YES	YES
Kleibergen Paap F-statistic		23.55	
Anderson Rubin CI			-0.01–0.27
Observations	108	108	108
Adjusted R^2	0.119	0.444	−0.024

Note: *p<0.1; **p<0.05; ***p<0.01
Robust Standard Errors.

Table E.1: Income Tax Change 1898 - 1908 – IV weighted with popshcity

	Dependent variable:		
	ChangeIncTax OLS	arcsinh(avgStrikers) First Stage	ChangeIncTax IV
	(1)	(2)	(3)
log(PriceShock)		0.631***	
		(0.143)	
arcsinh(avgStrikers)	0.131		−1.400
	(1.517)		(2.932)
Geographic Controls	YES	YES	YES
Industry Controls	YES	YES	YES
First Stage F-Stat		19.34	
Anderson Rubin CI			-10.89–7.14
Observations	105	105	105
Adjusted R^2	0.071	0.424	0.062

Note:	*p<0.1; **p<0.05; ***p<0.01
	Standard Errors are clustered at the county level.

Appendix F   Robustness: bourgeois support

Table F.1: Labor unrest and bourgeois support for franchise reform

	OLS (1)	OLS (2)	OLS (3)	FranchiseDemand OLS (4)	OLS (5)	OLS (6)	OLS (7)	OLS (8)	FranchiseDemand First Stage (9)	FranchiseDemand IV (10)
arcsinh(avgStrikers)	0.095*** (0.008)	0.080*** (0.011)	0.081*** (0.011)	0.081*** (0.011)	0.080*** (0.011)	0.047*** (0.012)	0.046*** (0.012)	0.047*** (0.013)		0.102*** (0.030)
arcsinh(PriceShock)									1.246*** (0.126)	
lat		0.209** (0.083)	0.192** (0.086)	0.185** (0.087)	0.176** (0.087)	0.132 (0.085)	0.112 (0.089)	0.113 (0.089)	1.274*** (0.365)	0.002 (0.115)
lon		0.031* (0.016)	0.031* (0.016)	0.031* (0.016)	0.028 (0.017)	0.008 (0.018)	0.011 (0.018)	0.016 (0.018)	0.078 (0.070)	0.003 (0.020)
ele		0.002** (0.001)	0.002** (0.001)	0.002** (0.001)	0.002** (0.001)	0.002 (0.001)	0.002 (0.001)	0.001 (0.001)	0.015*** (0.005)	−0.00003 (0.001)
temp		0.387** (0.163)	0.372** (0.164)	0.361** (0.167)	0.350** (0.167)	0.154 (0.171)	0.154 (0.172)	0.154 (0.172)	2.108*** (0.663)	−0.061 (0.220)
precip		−0.0004 (0.004)	0.0002 (0.004)	0.0003 (0.004)	0.001 (0.004)	−0.003 (0.004)	−0.002 (0.004)	−0.001 (0.004)	−0.022 (0.015)	0.001 (0.004)
log(distRiver)			−0.001 (0.005)	−0.001 (0.005)	−0.001 (0.005)	−0.002 (0.005)	−0.002 (0.005)	−0.001 (0.005)	−0.039* (0.022)	0.002 (0.006)
arcsinh(distCoal)			0.005 (0.006)	0.005 (0.006)	0.005 (0.006)	0.009 (0.006)	0.010* (0.006)	0.009 (0.006)	−0.018 (0.024)	0.010* (0.006)
indempShare				−0.088 (0.121)	−0.092 (0.122)	0.069 (0.120)	0.074 (0.121)	0.040 (0.124)	0.712* (0.387)	−0.001 (0.124)
landIneq					0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.004 (0.007)	0.001 (0.002)
urbShare						0.600*** (0.124)	0.608*** (0.125)	0.572*** (0.128)	2.134*** (0.527)	0.333* (0.179)
protShare							0.076 (0.089)	0.014 (0.098)	0.809* (0.477)	−0.047 (0.108)
foreignShare								−0.193* (0.112)	1.386** (0.589)	−0.238** (0.118)
Kleibergen Paap F-Statistic									97.72	
Anderson Rubin CI										0.04–0.17
Observations	270	269	269	269	269	267	267	267	267	267
Adjusted R^2	0.244	0.248	0.245	0.244	0.242	0.299	0.298	0.300	0.608	0.260

Note: *p<0.1; **p<0.05; ***p<0.01

Notes: Table shows results from estimating equation 1 at the constituency level. Dependent variable is one if constituency has at least one signee. Strike intensity is average annual number of strikers in a constituency transformed using the inverse hyperbolic sine (arcsinh). Geographical controls: longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal. Development controls: industrial employment share, Protestant share, landownership inequality, urbanization rate, non-German language share. Robust standard errors in parenthesis.

Table F.2: Labor unrest and bourgeois support for franchise reform

	Dependent variable:							
				FranchiseDemand				
	OLS	OLS	OLS	OLS	OLS	OLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
arcsinh(avgStrikers)	0.051***	0.044***	0.045***	0.043***	0.043***	0.036***	0.037***	0.038***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
lat		0.063**	0.064**	0.061**	0.077***	0.060**	0.037	0.040
		(0.026)	(0.027)	(0.027)	(0.027)	(0.029)	(0.033)	(0.034)
lon		0.002	0.001	0.001	0.005	0.004	0.006	0.006
		(0.010)	(0.010)	(0.011)	(0.010)	(0.011)	(0.011)	(0.011)
ele		0.001***	0.001***	0.001***	0.001***	0.001**	0.001**	0.001**
		(0.0003)	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
temp		0.158***	0.157***	0.150**	0.152**	0.122**	0.102	0.107*
		(0.057)	(0.058)	(0.059)	(0.059)	(0.059)	(0.063)	(0.064)
precip		−0.003***	−0.003***	−0.003***	−0.003**	−0.003***	−0.003***	−0.003***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
log(distRiver)			−0.002	−0.001	−0.003	0.007	0.003	0.004
			(0.010)	(0.011)	(0.010)	(0.010)	(0.010)	(0.011)
arcsinh(distCoal)			0.004	0.005	0.006	0.002	0.002	0.002
			(0.005)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
indempShare					−0.002	−0.001*	−0.001	−0.001
					(0.001)	(0.001)	(0.001)	(0.001)
Observations	575	574	574	551	551	548	539	528
Adjusted R^2	0.136	0.149	0.147	0.145	0.149	0.178	0.189	0.187

Note: *p<0.1; **p<0.05; ***p<0.01

Notes: Table shows results from estimating equation 1 at the county level for counties outside of Prussia. Dependent variable is one if constituency has at least one signee. Strike intensity is average annual number of strikers in a constituency transformed using the inverse hyperbolic sine (arcsinh). Geographical controls: longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal. Development controls: industrial employment share, Protestant share, landownership inequality, urbanization rate, non-German language share. Robust standard errors in parenthesis.
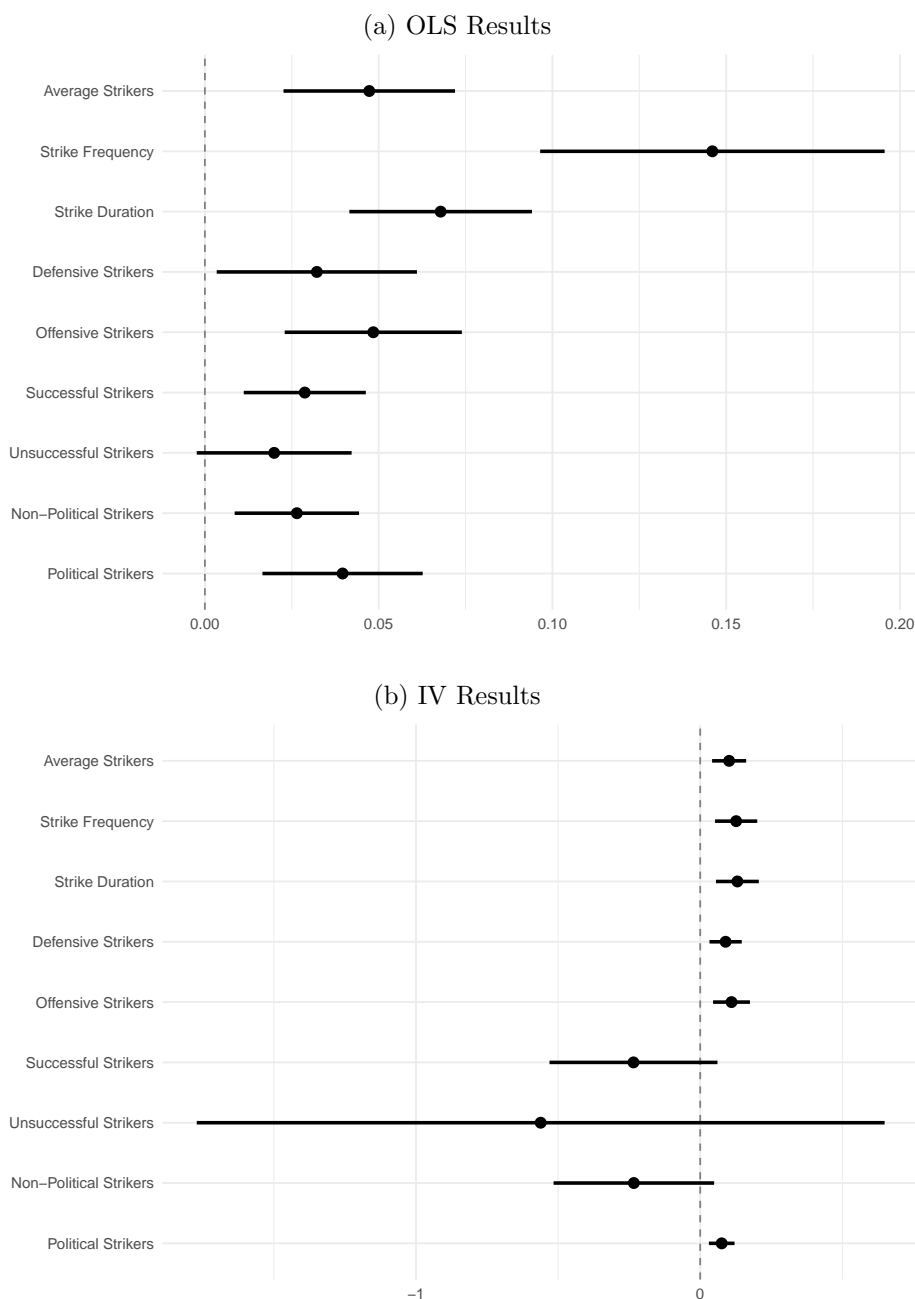
Figure F.1: Labor unrest and bourgeois support, measuring strike intensity in various ways

Note: Dependent variable is one if constituency has at least one signee in 1909. Explanatory variables are various constituency-level measures of strike intensity 1899–1905 (arcsinh transformed): average strikers (average annual number of strikers), strike frequency (average annual number of strikes), strike duration (average annual number of working days lost due to strikes), defensive strikers (average annual number of strikers with demands against wage decrease or working time increases), offensive strikers (average annual number of strikers with demands for wage increase or working time reductions), successful strikers (average annual number of strikers whose demands were met), unsuccessful strikers (average annual number of strikers whose demands were not met), political strikers (average annual number of strikers in wildcat strikes), non-political strikers (average annual number of strikers in union-approved strikes). Controls: longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal, industrial employment share, Protestant share, urbanization rate, landownership inequality, non-German share.

Appendix G   Robustness: franchise reform voting

Table G.1: Labor unrest and roll-call voting on franchise reform: robustness

	Dependent variable:		
	\multicolumn{8}{c}{voting (yea/nay+unexcused)}	voting (yea/nay+unexcused) First Stage	voting (yea/nay+unexcused) IV
	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
arcsinh(avgStrikers)	0.053*** (0.012)	0.049*** (0.014)	0.053	0.052	0.052*** (0.015)	0.045*** (0.015)	0.054*** (0.013)	0.051*** (0.014)		0.144*** (0.025)
arcsinh(PriceShock)									1.420*** (0.123)	
lat		0.041 (0.084)	0.006 (0.084)	−0.008 (0.082)	−0.023 (0.086)	−0.031 (0.082)	0.058 (0.085)	0.063 (0.084)	1.164*** (0.279)	−0.102 (0.100)
lon		0.021 (0.017)	0.020 (0.015)	0.019 (0.017)	0.013 (0.015)	0.007 (0.016)	−0.006 (0.015)	−0.013 (0.017)	0.041 (0.056)	−0.032* (0.018)
ele		0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.014*** (0.004)	−0.001 (0.001)
temp		0.203 (0.156)	0.171 (0.148)	0.147 (0.153)	0.128 (0.160)	0.077 (0.156)	0.076 (0.155)	0.070 (0.154)	1.689*** (0.513)	−0.243 (0.183)
precip		0.012*** (0.004)	0.012*** (0.003)	0.012*** (0.004)	0.014*** (0.003)	0.013*** (0.003)	0.008*** (0.003)	0.007** (0.004)	−0.026** (0.012)	0.011*** (0.004)
log(distRiver)			0.005 (0.006)	0.005 (0.005)	0.006 (0.005)	0.005 (0.005)	0.002 (0.006)	0.001 (0.005)	−0.044** (0.018)	0.006 (0.006)
arcsinh(distCoal)			0.007 (0.005)	0.007 (0.005)	0.007 (0.005)	0.007 (0.005)	0.001 (0.005)	0.002 (0.005)	−0.017 (0.020)	0.004 (0.006)
indempShare				−0.241* (0.133)	−0.251	−0.213* (0.126)	−0.252	−0.193 (0.129)	1.128*** (0.347)	−0.294** (0.129)
landIneq					0.003	0.003* (0.002)	0.003	0.002 (0.002)	0.004 (0.006)	0.002 (0.002)
urbShare						0.140 (0.145)	0.087	0.163 (0.145)	1.995*** (0.483)	−0.288 (0.184)
protShare							−0.368	−0.270*** (0.096)	0.675* (0.375)	−0.373*** (0.113)
foreignShare								0.284* (0.146)	1.398*** (0.491)	0.204 (0.169)
Kleibergen Paap F-Statistic									133.56	
Anderson Rubin CI										0.09–0.21
Observations	390	390	390	390	390	386	386	386	386	386
Adjusted R²	0.059	0.166	0.167	0.172	0.174	0.171	0.212	0.219	0.600	0.123

Note: \hfill *p<0.1; **p<0.05; ***p<0.01

Notes: Table shows results from estimating equation 1 at the MP level. Dependent variable is one if an MP voted yea on the reform bill and zero if an MP voted nay or is absent without excuse during vote. MPs that abstained or were absent with excuse are excluded. *Strike intensity* is average annual number of strikers in a constituency transformed using the inverse hyperbolic sine (arcsinh). *Bourgeois support* is one if constituency has at least one signee. Geographical controls: longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal. Development controls: industrial employment share, Protestant share, landownership inequality, urbanization rate, non-German language share. Bars indicate 95% confidence intervals. Standard errors, clustered at the constituency level, in parenthesis.

Table G.2: Labor unrest and franchise reform voting: OLS, city sample

	Dependent variable:
	Voting (Yes/Unexcused+No)
	OLS
arcsinh(avgStrikers)	0.148***
	(0.041)
Geographic Controls	YES
Industry Controls	YES
Observations	84
Adjusted R^2	0.350

Note: *p<0.1; **p<0.05; ***p<0.01

Standard Errors are clustered at electoral district level.
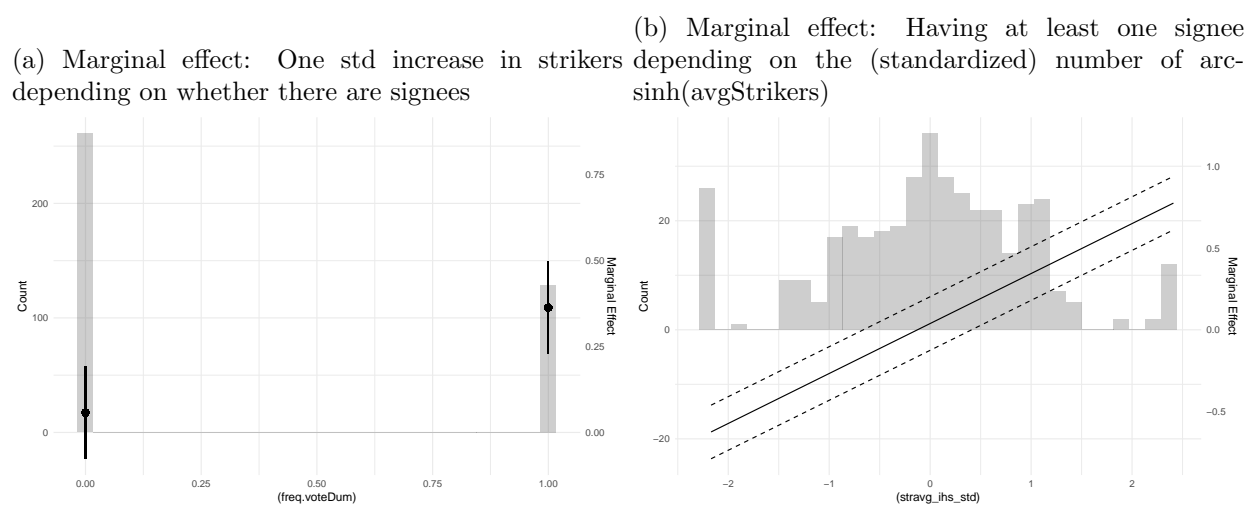
Notes:

(a) Marginal effect: One std increase in strikers depending on whether there are signees

(b) Marginal effect: Having at least one signee depending on the (standardized) number of arc-sinh(avgStrikers)

Figure G.1: Marginal Effects
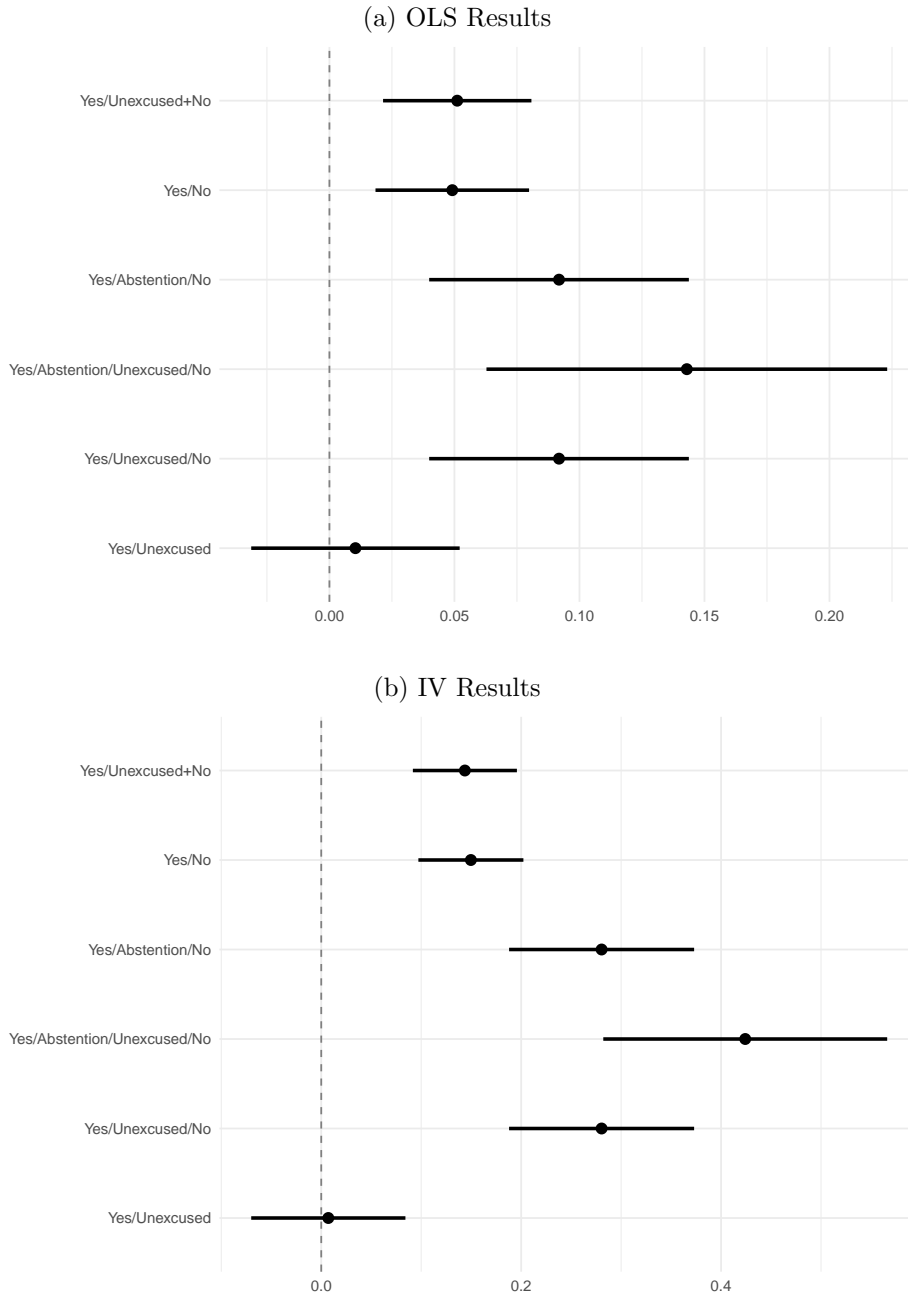
(a) OLS Results

(b) IV Results

Figure G.2: Labor unrest and franchise reform voting, coding votes in various ways

Note: Dependent variables are variations on voting on the reform bill. Yes/No excludes any abstentions or absent MPs; Yes/Abstention/No codes 1/0/-1; Yes/Abstention/Unexcused/No codes 4/3/2/1; Yes/Unexcused+No codes unexcused abstentions as No; Yes/Unexcused/No codes 1/0/-1; Yes/Unexcused codes 1/0. Explanatory variable is strike intensity, i.e., the (arcsinh transformed) average annual number of strikers in a constituency. Controls: longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal, industrial employment share, Protestant share, landownership inequality, urbanization rate, non-German language share.
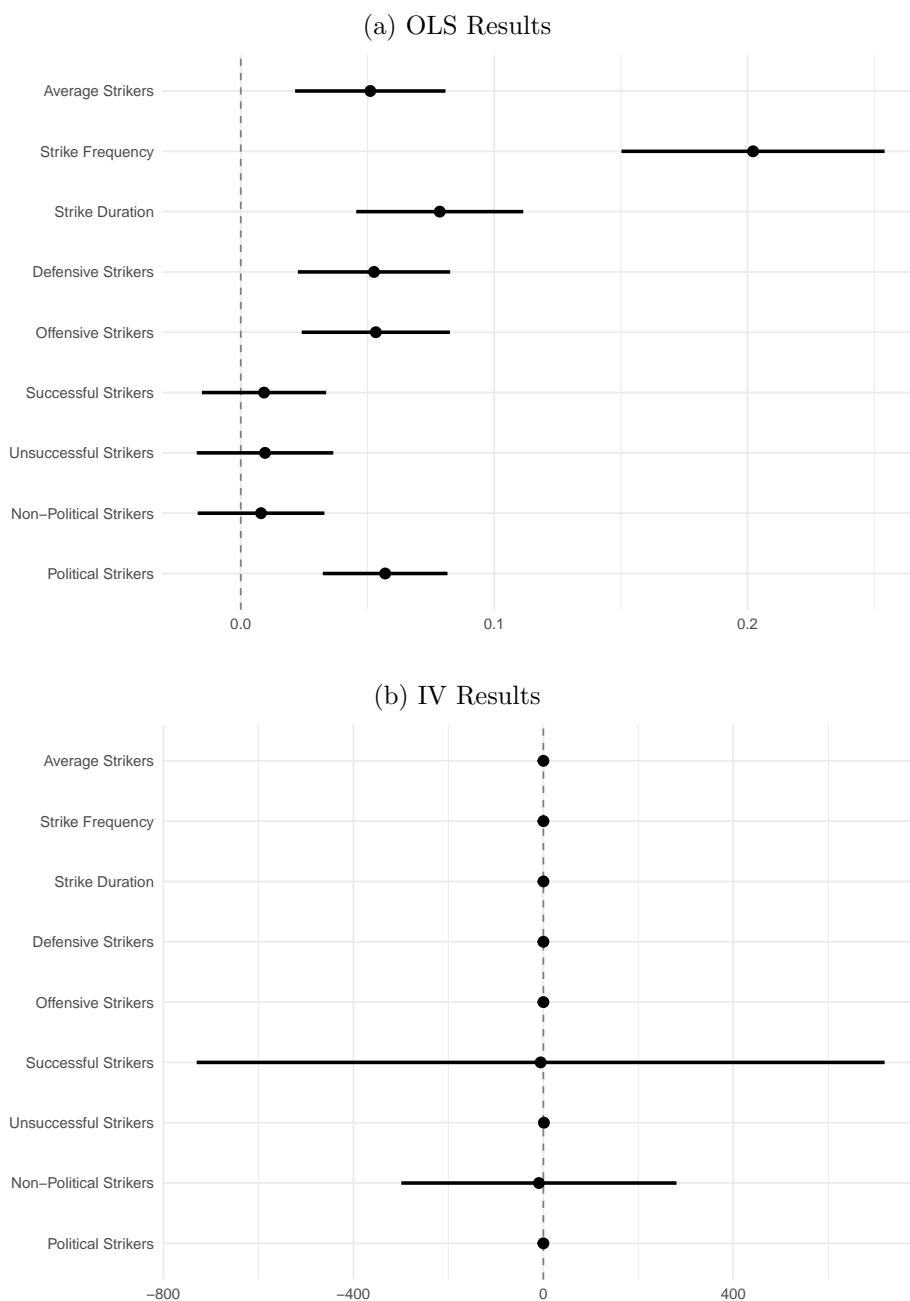
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(a) OLS Results

(b) IV Results

Figure G.3: Labor unrest and franchise reform voting, measuring strike intensity in various ways

Note: Dependent variable is one if an MP voted yea on the reform bill and zero if an MP voted or is absent without excuse during vote. MPs that abstained or were absent with excuse are excluded. Explanatory variables are various constituency-level measures of strike intensity 1899–1905 (arcsinh transformed): average strikers (average annual number of strikers), strike frequency (average annual number of strikes), strike duration (average annual number of working days lost due to strikes), defensive strikers (average annual number of strikers with demands against wage decrease or working time increases), offensive strikers (average annual number of strikers with demands for wage increase or working time reductions), successful strikers (average annual number of strikers whose demands were met), unsuccessful strikers (average annual number of strikers whose demands were not met), political strikers (average annual number of strikers in wildcat strikes), non-political strikers (average annual number of strikers in union-approved strikes). Controls: longitude, latitude, altitude, temperature, precipitation, distance to navigable river, distance to coal, industrial employment share, Protestant share, landownership inequality, urbanization rate, non-German language share.

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Appendix H   Overview of results

Table H.1: Main Findings: OLS Regressions

	WageChange OLS (1)	IncomeTaxChange OLS (2)	ExpendRedisShareChange OLS (3)	ExpendSecShareChange OLS (4)	ExpendSecShare OLS (5)	arcsinh(Policemen) OLS (6)	arcsinh(FranchiseDemand) OLS (7)	OLS (8)	arcsinh(CapitalistDemand) OLS (9)	arcsinh(EnglightDemand) OLS (10)	VoteFranchise OLS (11)	OLS (12)
						Dependent variable:						
stravg_ihs	0.003 (0.007)	0.131 (1.517)	2.093*** (0.712)	0.056 (0.150)	0.001*** (0.0004)	0.150** (0.066)	0.059*** (0.016)	0.014 (0.011)	0.032*** (0.010)	0.052*** (0.015)	0.021 (0.013)	0.010 (0.013)
freq.voteDum								1.366*** (0.081)				
stravg_ihs:asinh(freq.vote)												0.019*** (0.006)
Level of Obs	County	City	City	City	County	City-Counties	County	County	County	County	Elect Distr	Elect Distr
Geographic Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Population Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	468	105	103	100	483	44	555	555	555	555	398	398
Adjusted R^2	0.180	0.071	0.141	0.051	0.382	0.280	0.285	0.697	0.139	0.260	0.281	0.296

Note: *p<0.1; **p<0.05; ***p<0.01

Table H.2: Main Findings: IV Regressions

	WageChange IV (1)	IncomeTaxChange IV (2)	ExpendRedisShareChange IV (3)	ExpendSecShareChange IV (4)	ExpendSecShare IV (5)	arcsinh(Policemen) IV (6)	arcsinh(FranchiseDemand) IV (7)	IV (8)	arcsinh(CapitalistDemand) IV (9)	arcsinh(EnglightDemand) IV (10)	VoteFranchise IV (11)	IV (12)
						Dependent variable:						
stravg_ihs	0.016 (0.025)	−1.400 (2.932)	2.571** (1.267)	0.245 (0.274)	0.001 (0.002)	0.766** (0.315)	0.406*** (0.114)	0.285** (0.120)	0.255*** (0.096)	0.364*** (0.111)	0.044* (0.024)	−0.011 (0.030)
freq.voteDum								1.023*** (0.183)				
stravg_ihs:asinh(freq.vote)												0.014** (0.007)
Level of Obs	County	City	City	City	County	City-Counties	County	County	County	County	Elect Distr	Elect Distr
Geographic Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Population Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
First Stage F-Stat	48.81	19.34	16.76	15.66	41.17	4.91	44.21	34.06	44.21	44.21	113.49	50.18
Observations	466	105	103	100	483	44	555	555	555	555	398	398
Adjusted R^2	0.176	0.062	0.137	0.033	0.379	−2.029	−0.772	0.078	−1.304	−0.802	0.275	0.290

Note: *p<0.1; **p<0.05; ***p<0.01

Appendix References

Ziblatt, Daniel. 2008. "Does Landholding Inequality Block Democratization?: A Test of the "Bread and Democracy" Thesis and the Case of Prussia." *World Politics* 60 (4): 610–641.

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