European
Historical
Economics
Society

EHES Working Paper | No. 227 | September 2022

Welfare Reform and Repression in an Autocracy: Bismarck and the Socialists

Felix Kersting,
HU Berlin

EHES Working Paper | No. 227 | September 2022

Welfare Reform and Repression in an Autocracy: Bismarck and the Socialists*

Felix Kersting[1],
HU Berlin

Abstract

Can autocratic governments gain support by implementing a welfare reform and a repressive law? This paper studies a famous case – Bismarck's policies of social insurance and the anti-socialist law in late 19th century Germany. The socialist party, I find, increases its vote share in constituencies more affected by Bismarck's policies. For identification, I exploit local and industry-specific variation in treatment intensity due to ex-ante existing local healthcare and detailed lists on forbidden socialist organizations. This variation allows me to use a flexible difference-in-differences as well as a shift-share approach. As mechanisms, I highlight that the socialist party evaded the repression by reallocating their activity and gained from the social insurance by claiming the credits for the welfare reform and providing a local cooperative alternative.

JEL Codes: D74, N44, P16

Keywords: welfare reform, repression, social democracy, opposition, voting, autocracy

[1]Corresponding Author: Felix Kersting, (f.kersting@hu-berlin.de)

* This paper benefited greatly from discussions with Thilo Albers, Charlotte Bartels, Adam Brzezinski, Eric Chaney, Antonio Ciccone, Francesco Cinnirella, Guido Friebel, Claudia Goldin, Theocharis Grigoriadis, Erik Hornung, Kalle Kappner, Christoph Koenig, Sonja Kovacevic, Julian Langer, Sibylle Lehmann-Hasemeyer, Jonas Löbbing, Cathrin Mohr, Chantal Pezold, Ulrich Pfister, Thomas Piketty, Moritz Schularick, Georg Simmerl, Timo Stieglitz, Jochen Streb, Joachim Winter, Nikolaus Wolf, and Yanos Zylberberg. I wish to thank the participants at conferences and seminars at Bonn (MacroHistory Seminar), Bristol (Applied Micro Brownbag), Frankfurt (Applied Microeconomics and Organization Seminar), the International Macro History Online Seminar, Lund (Economic History Seminar), LSE (Graduate Economic History Seminar), Mannheim (Research Seminar Economic History), Muenster (Research Seminar Economic and Social History), PSE (Applied Economics Seminar), Trier (Empirical Economics Seminar), the Congress for Economic and Social History (2021, virtual), CRC Summer School "Science-Based Policy Advice" (2021, virtual), the EEA (2021, virtual), the EHES (2022, Groningen), the EHS (2021, virtual), HEDG Workshop "Growth and Conflict" (2022, Odense), and the VfS (2021, virtual) for valuable comments. Patrick Brock, Luzia Bruckamp, Christopher Prömel, and Iris Wohnsiedler provided excellent research assistance. Financial support by Deutsche Forschungsgemeinschaft through CRC TRR 190 and the Joachim Herz Foundation is gratefully acknowledged.

Notice
The material presented in the EHES Working Paper Series is property of the author(s) and should be quoted as such. The views expressed in this Paper are those of the author(s) and do not necessarily represent the views of the EHES or its members

1 Introduction

More than two thirds of the world's population live in an autocratic country (Boese et al., 2022). In recent years, we observe a new wave of autocratization. At the same time, the number of pro-democracy protests is increasing considerably (Lührmann et al., 2020). Rulers facing protests seek to weaken their opposition and stay in power – also with the help of welfare reforms (Acemoglu and Robinson, 2000). Recent examples include the PiS government in Poland launching the programme "Family 500+" in 2016 and the Chinese government expanding health insurance with "Healthy China 2020" in 2009. However, there is lack of evidence whether autocratic governments can reduce the support for the opposition by implementing a welfare reform and on how the opposition reacts to it.

This paper aims at filling this gap by investigating the political effects of Bismarck's policies against the socialist party in late 19th century Germany. After German unification in 1871, vote shares for the socialist party hiked, employers experienced unforeseen levels of strike activities, and the authorities feared a socialist revolution. In response, Bismarck's government introduced the anti-socialist law in 1878, which banned socialist organizations and led to countless imprisonments. To complement this repressive policy with an integrative one, five years later the government introduced the world's first public social security scheme specifically targeted at blue-collar workers. Health insurance, including sick pay and free medical care and co-financed by employers and employees, was the core of the reform. Historians have long argued that the social insurance fostered the integration of the working class (Wehler, 2006) and understood Bismarck's social insurance as blueprint for successful social integration (Eichengreen, 2018) and a paradigm for the organization of welfare states (Ritter, 2010). What is more, Acemoglu and Robinson (2000, p.1885) discuss this case as their main example for a ruler opting for a welfare reform in times of social unrest.

In spite of its canonical status in the social sciences, the political success of Bismarck's policies has thus far, to my knowledge, not been empirically investigated. My hypothesis for the effects of the welfare reform is based on the seminal model by Acemoglu and Robinson (2000). In their model, the government aims to prevent a revolution and can only credibly commit to welfare reform (instead of democratization) if the opposition is strong. This prediction implies that the opposition should remain strong to make the commitment to the reform credible, but not be able to carry out a revolution. Stable vote shares for the opposition would indicate a new equilibrium. In my empirical analysis, I find some evidence for this prediction: the social reform led not a decline in the vote share for the socialist party and there was clearly no revolution in Germany. The increasing vote shares for the party caused by the welfare reform, however, require further explanations. Here, I focus on the reaction of the socialist party as key. Specifically, I provide quantitative and qualitative evidence that claiming credits for the reform, i.e., dominating the narrative on the welfare reform, and providing a local cooperative alternative were crucial for the party's success. My findings suggest that the narrative about reforms is a key complementarity for the political success of social reforms.

In analyzing the political effects of Bismarck's reform, the main empirical challenge is to distinguish between the specific effect of the social insurance and the general role of blue-collar workers

for the increase in support for the socialist party, which is hard because only blue-collar workers were eligible for the social insurance and at the same time formed the core group of voters for the socialist party. To tackle this obstacle, I exploit the fact that local and industry-specific health insurance schemes existed already before the introduction of Bismarck's public scheme. Thus, the reform had greater "bite" in constituencies with a lower share of ex-ante insured workers. A similar strategy has been used in other settings.[1] To account for this variation, I rely on a detailed and previously unused firm census of 1876. Around 35% of all blue-collar workers already had health insurance before Bismarck's reform. These schemes are seen as a role model for Bismarck's policies and became redundant with the introduction of the public insurance scheme. Bismarck's reform in 1883 extended health insurance to 100% of all blue-collar workers.[2] My treatment variable is the share of newly insured workers. I employ this variable in an event-study and difference-in-differences framework, in which I compare changes in votes in constituencies where Bismarck's health insurance lead to large additional insurance coverage with regions with less of a coverage increase over eight elections between 1871 and 1890 – the end of Bismarck's reign as chancellor. Crucially, I allow for flexible effects for the share of blue-collar workers. Common pre-treatment election trends corroborate the validity of the identification strategy. Concerns about violations of the parallel-trend violation are alleviated by implementing an approach by Rambachan and Roth (2022).

The empirical results show that Bismarck's social reform causally let to increasing votes for the socialist party. The magnitude of the effects of social insurance are quite large: An increase in one standard deviation explains around 65% of the average increase in votes for the socialist party when comparing the elections directly before and after the introduction of the social insurance and 25% of one standard deviation in the votes for the socialist party.

To account for regional unobservable characteristics that might drive the share of ex-ante existing health insurance, I construct a shift-share instrument as second empirical approach. For this, I rely on industry-specific variation in the share of ex-ante insured workers. The company census and other sources allow me to calculate the share of ex-ante insured workers in ten industries. I combine these shares and the local sector shares to build my shift-share instrument. This exercise confirms my main finding.

The last step of my analysis of the welfare reform helps me to deal with one other identification concern: Local industry shares that form the basis of my treatment variable could predict votes for the socialist parties through channels other than the health insurance. I follow an approach of Goldsmith-Pinkham et al. (2020) and construct pre-trend figures by industry to preclude other channels. I do not find evidence for systematic and significant pre-trends for the different industries in the change of votes for the socialist party. What is more, my findings suggest that indeed industries with a low share of ex-ante insured workers drive my results. To provide one example, I find a notable difference in votes for the socialist party between the otherwise similar industries of textiles and

[1] See, e.g., Card (1992), Acemoglu and Johnson (2007), Finkelstein (2007), Derenoncourt and Montialoux (2021), and Acemoglu et al. (2021).

[2] To alleviate the concern that domestic migration between 1876 and 1883 could bias my results, I present evidence that constituencies with a higher share of ex-ante insured workers do not attract more workers due to migration before Bismarck's reform.

clothing after the introduction of social insurance. I do not find a correlation between blue-collar workers in textiles (with a high share of ex-ante insured workers) and votes for the socialist party after the introduction of Bismarck's policies. However, I do find a positive correlation between blue-collar workers in clothing (with a low share of ex-ante insured workers). This supports my claim that, indeed, the introduction of health insurance is the main channel for the rising support for the socialist party.

To account for the effect of anti-socialist laws introduced in 1878, I compare electoral constituencies with and without banned socialist organizations based on a newly digitized data set on all forbidden socialist organizations. Historical accounts highlight that the ban on their organizations hit the socialist party hardest. However, if anything, I find small positive effects on vote shares for the socialist party. In addition, the interaction of the carrot and the stick is positive, i.e., the socialist party particularly gained in constituencies with a forbidden socialist organization *and* a higher share of newly insured workers.

Why did social reform and repression spark more support for the socialist party? The key challenge in analyzing the reaction of the opposition is the lack of data, which is due to the risk linked to illegal activities and their documentation. In the case of Bismarck's Germany, I can use two sources of archival material: Parts of the material were collected abroad, from where the socialist party organized the distribution of its illegal newspaper. In addition, I rely on the internal reports by the police in Berlin, who was in charge of the supervision of the anti-socialist laws. With this material, I, first, show how the socialist party reached its voters despite the anti-soclaist law. The party evaded the anti-socialist law by reallocating their activity and circulating a forbidden newspaper, for which detailed subscription lists exist. Second, I analyze how the socialist party was able to attract more voters despite the social insurance. The socialist party successfully claimed responsibility for the welfare reforms. They dominated the narrative about the welfare reform by criticizing its limitations, demanding more reforms and building upon the lack of trust in the government. Even Bismarck admitted in parliament: "If there were no social democracy, and if a lot of people were not afraid of it, the modest progress we have made so far in social reform would not exist" (Bismarck, 1885b, own translation). Empirically, I show that the party particularly gained in constituencies with a higher share of newly insured workers *and* readers of their newspaper, the latter as proxy for their potential dominance in the narrative about the social reform. In addition, the party was able to offer a local solidary alternative by exploiting one loophole in the health insurance, so-called mutual health funds. Joining the latter was propagated by the socialist party and used as form of local political organization. Even though employers did not have to contribute financially in contrast to all other health insurance schemes, i.e., higher costs for the workers, membership in the mutual health funds flourished and translated into more votes for the socialist party.

I contribute to three strands of literature. First, I add to the literature in political economy on how autocratic rulers deal with revolutionary threats. In the seminal study by Acemoglu and Robinson (2000), autocratic rulers can choose between democratic reform and redistribution. Existing empirical research focuses on the determinants of the rulers' decision, e.g., revolutionary threats (Aidt and

Jensen, 2014; Aidt and Franck, 2015; Dower et al., 2018; Mohr, 2021) or negative economic shocks (Brückner and Ciccone, 2011).[3] There is a related broader literature in economics and political science on the political effects of reforms and repression.[4] For instance, regions more affected by peasant reforms experienced more rebellion afterwards in 19th century Russia (Finkel et al., 2015). Hager and Krakowski (2022) provide evidence that physical repression in communist Poland led to more revolt. Bautista et al. (2021) come to similar conclusions for Chile under and after Pinochet. Relative to the existing literature, I contribute to these studies in two ways. First, I investigate the *consequences* rather than the *determinants* of the decision by the rulers in power under revolutionary threats. The results indicate more support for the opposition after the welfare reform. Second, I offer an in-depth analysis of the different activities by the socialist party to strengthen their political support. Thereby, I extend the analysis of such a reform by exploring the reaction of the opposition. Specifically, I stress the complementarity between implementing a social reform and dominating the narrative about the reform for its political success.

Second, my paper is related to the literature on nation-building. Bismarck's policies were an attempt to strengthen the link between the workers and the nation state as stressed, for instance, by Kocka (2016). The existing empirical literature often finds evidence for successful nation-building through propaganda (Blouin and Mukand, 2019), foreign intervention (Dell and Querubin, 2018), intergroup contact (Bazzi et al., 2019), leadership (Assouad, 2021), public spending (Caprettini and Voth, 2022; Voigtländer and Voth, 2021), sport (Depetris-Chauvin et al., 2020) or education (Cinnirella and Schueler, 2018; Blanc and Kubo, 2021).[5] Nation-building can also backfire as shown by Fouka (2020) for an assimilation policy. To this strand of literature, I add an empirical analysis where the government attempts to win over the "hearts and minds" of their strongest opposition with a welfare reform. The results indicate that in this case nation-building can fail, despite the material benefits, and even strengthen the opposition.

Third, my study is related to a literature in economic history on Bismarck's social insurance. Existing studies analyze the effect on mortality (Guinnane and Streb, 2015; Bauernschuster et al., 2020), savings (Lehmann-Hasemeyer and Streb, 2018), fertility (Scheubel, 2013; Fenge and Scheubel, 2017; Guinnane and Streb, 2021), and out-migration (Khoudour-Casteras, 2008). There is a consensus in this literature that the introduction of the social insurance led to social improvements.[6] However, we lack a thorough quantitative analysis of the political effects of Bismarck's reform, which is my core contribution to this literature.[7] Note that there is no clear consensus on the political effects of Bismarck's reforms in the qualitative historical literature, e.g., Wehler (2006) and Ritter (1983).

The rest of the paper is organized as follows. Section 2 provides the historical background and

[3] Murtin and Wacziarg (2014) explore the role of economic factors driving democratization in general.

[4] A substantial literature studies this question for democracies, e.g., Manacorda et al. (2011), Huet-Vaughn (2019), Galiani et al. (2019), Kogan (2021), Caprettini et al. (2021), and Acemoglu et al. (2021).

[5] Bandiera et al. (2019) and Alesina et al. (2020, 2021) study the determinants of nation-building by states from a theoretical and empirical point of view.

[6] See Jopp and Streb (2021) for a recent overview on the social and economic effects of the social insurance.

[7] Thomson (2022) is a notable exception by analyzing one aspect of the anti-socialist law, the possibility to expell socialist leaders from cities. In contrast to this study, I capture the anti-socialist law in its core aspect, the ban of organizations, and also take the social insurance into account.

my hypothesis on the political effects of Bismarck reforms. In Section 3, I describe my data and explain how I capture the social insurance and the anti-socialist laws. Section 4 presents the empirical strategy as well as my main results. In Section 5, I explore the mechanisms. Section 6 concludes.

2 Bismarck and the socialists

2.1 Historical background

In the 1870s, after the German unification in 1871, the socialist movement gained in popularity among the German society. In 1875, the *Sozialistische Arbeiterpartei Deutschlands* (SAP; Socialist Workers' Party of Germany) was founded as a coalition of the previous workers' parties in Germany, the *Sozialdemokratische Arbeiterpartei* (SDAP; Social Democratic Workers' Party) and the *Allgemeine Deutsche Arbeiterverein* (ADAV; General German Workers' Association). In the next general election in 1877, the party received 9.1% of the votes after only 3.2% six years earlier. Their core demands laid down in the *Gothaer Programm* were the introduction of a 10-hour-working day, the prohibition of Sunday-work, more rights for trade unions, and more education, especially for younger workers (Bartel et al., 1980, p.30ff).

Anti-socialist law Support for the Paris Commune and unseen levels of strike activity (at least 530 strikes between 1871 and 1873) increased the bourgeoisie's fear of a socialist revolution. Chancellor Bismarck, for instance, fuelled the bourgeoisie's fears by spreading rumors that supporters of the SAP formed a kind of army in the middle of Germany that even limited the economic recovery after the *Gründerkrise* (Bismarck, 2004, original from 1878). August Bebel, the leader of the socialist party, triggered the fears by famously claiming in parliament "that before a few decades pass, the battle cry of the Parisian proletariat 'War to the palaces, peace to the huts, death to misery and idleness!' will become the battle cry of the entire European proletariat" (Bebel, 1911, p.184, own translation, original from 1871).

After two failed assassinations of the emperor, for which the socialist party (without clear evidence for it) was held responsible, Bismarck's government reacted harshly to the growing socialist movement by introducing the so-called *Sozialistengesetze* (anti-socialist laws) in 1878. The anti-socialist laws prohibited most activities of the SAP and trade unions. Bismarck aimed to conduct a "war of extermination" with laws against the "red enemies of the empire" (Bismarck, 2004, original from 1878). Overall, the anti-socialist laws led to a ban on more than 200 associations and 400 publications within a year. The implementation was harsh and did not differentiate between social entertainment clubs as well as trade unions with a strong focus on local economic assistance on the one hand, and socialist agitators on the other hand (Lidtke, 1966, p.80). However, supporters of the banned party were still allowed to run for parliament as private persons. Centralized party activities like campaigning were forbidden.

These laws were a strong blow to the socialist party, and led to numerous discussions on how to react. To circumvent the prohibition by law, the party directly dissolved all official party structures.

However, the party's leadership was in disagreement about how to further react to the anti-socialist laws and divided into three main camps (Engelberg, 1959). Reformists suggested following the rules to achieve an early repeal of the anti-socialist laws while anarchists distanced themselves from the party and rejected participation in elections. The Marxists, however, suggested a dual strategy of legal and illegal activity. In the early 1880s, the Marxist approach became the official guideline of the party also because the government decided to prolong the anti-socialist laws. Bebel and Karl Liebknecht were the leading figures behind this strategy. This strategy will be part of the discussion of the mechanisms.

Social insurance To complement the repressive policy, Bismarck's government introduced a new social policy to reduce the support for socialist candidates in 1883. Bismarck formulated his goal bluntly: "Give the worker the right to work as long as he is healthy, give him care when he is sick, give him care when he is old. When you do that [...], then I believe that the gentlemen of the Wydener program [the SAP] will blow their whistle in vain." (Bismarck, 1885a, own translation).

The social insurance built upon three pillars: Health insurance, accident insurance, and pension insurance. The *Gesetz betreffend die Krankenversicherung der Arbeiter* enacted June 15, 1883, and implemented December 1, 1884, provided public health insurance coverage for blue-collar workers in non-agricultural sectors. It covered sick pay (up to 13 weeks, at least 50% of the local wage), doctor appointments and expenditures for medicine with employers paying one-third of the contributions and employees two-thirds. The health insurance stood at the core of the social insurance reform. One year later, the government provided accident insurance targeted at the same workers group. The pension insurance was implemented in 1889, shortly before Bismarck's reign as chancellor ended, and had strict eligibility criteria, especially regarding the age requirement. Overall, these policies targeted the workers and not the working poor, and, thus, the core voters of the socialist party (Ritter and Tenfelde, 1992, p.702). In this paper, I focus on the health insurance as the first key part of the reform that also was by far the biggest one in terms of financial volume (Jopp and Streb, 2021, p.274).

What were the aspects of the health insurance that made it a carrot? The health insurance led to a common public insurance scheme with minimum standards for all blue-collar workers. The level of sick pay, however, was hardly sufficient to subsist while being sick at home. Still, as previous research on Bismarck's reform has shown (Bauernschuster et al., 2020), life expectancy of blue-collar workers increased after the implementation of the health insurance. Moreover, the social insurance led to higher "indirect wages" consisting of the benefits of the social insurance (Khoudour-Casteras, 2008). However, it is unclear whether the social insurance had redistributive effects because the employers and employees co-financed the insurance. Without any doubt, the health insurance brought blue-collar workers substantial social improvements.

Before Bismarck's reform, insurance coverage existed but was dependent on local and industry-specific decisions. In some cases, the insurances were founded in the 16th century (Jopp and Streb, 2021). For instance, *Knappschaften* (miners' guilds) offered health insurance for miners, and *Fabrikkassen* covered health insurance for the employees of firms. Employers often contributed to the

financing of these insurance programs. These existing health insurance schemes will later be crucial part of my empirical strategy.

It was important for the socialist party to take a clear position on the new social security policies. On the one hand, better coverage corresponded to their demands, on the other hand there was a risk of losing votes. Indeed, contemporaries and potential voters interpreted the social reforms as 'socialist'. Therefore, the socialist party needed a sharp distinction from Bismarck's policies to not lose ground. Consequently, they rejected the public social insurance. How they still managed to dominate the narrative about the social reform will be one key explanation for their electoral success in Section 5.

When it comes to the political evaluation of Bismarck's policies against the socialist party, the historical literature remains inconclusive. Some historians (most notably Wehler, 2006, p.915) claim that Bismarck's introduction of social insurance – at least in the long-run – successfully integrated the working class in the new German nation-state. Others argue that the opposite was the case because of the small distributional effect (Ritter, 1983, p.50ff). There is a broad consensus, however, that the introduction of the anti-socialist laws was not successful for Bismarck. Wehler (2006, p.906) argues that the anti-socialist laws led to increasing solidarity among the SAP voters and not to deterrence effects. Nipperdey (1992, p.400) concludes that the anti-socialist laws were too excessive because they solely relied on violence and coercion and made supporters of the SAP enemies of the state. Interestingly, Lidtke (1966, p.71) argues that the lack of success of the social insurance was due to the sharp anti-socialist laws. Essentially, the qualitative literature is undecided and there are multiple narratives on Bismarck's politics of *Zuckerbrot und Peitsche* (carrot and stick). I propose a novel approach based on an implication of the model by Acemoglu and Robinson (2000) and a quantitative evaluation to shed new light on this issue.

2.2 Bismarck's reform in light of Acemoglu and Robinson (2000)

From a theoretical point of view, we should expect to find no decline in support for the socialist party: In Acemoglu and Robinson (2000), authoritarian rulers face the threat of a revolution. To prevent the revolution from happening, the ruler can either put forward a reform or democratize. The model's key parameter for this decision is the strength of the opposition. This is where the credible commitment[8] to the reform enters the picture: Only the existence of a strong opposition, denoted by q in the model, allows the government to credibly commit to a reform. In the words of Acemoglu and Robinson (2000, p.1176): "perhaps paradoxically, a high q makes franchise extension less likely. A high q corresponds to an economy in which the poor are well organized, so they frequently pose a revolutionary threat. A naive intuition may have been that in this case franchise extension would be more likely. This is not the case, however, because with a frequent revolutionary threat, future redistribution becomes credible." Democratization is a commitment mechanism that is exploited only when the authoritarian ruler otherwise cannot credibly commit to reform.

[8] Acemoglu and Robinson (2006, p.133) describe the commitment problem as follows:"In essence, those with political power cannot commit not to use it to renege the promises made in the past."

Note that Acemoglu and Robinson (2000, p.1185) discuss Bismarck's reform as their prime example in which the elite opted for a reform: "While there were no strong socialist parties in Britain and France and trade unions were of little importance, the Social Democratic Party in Germany was by far the largest left-wing party in Europe at that time, and labor movement was strong. At first sight, one might expect franchise extension in Germany rather than in Britain and France. Our model, in contrast, predicts that the German elite should have had more flexibility in dealing with social unrest by promising future redistribution, which was the pattern in practice." This quote shows it is worthwhile to apply their model to this case. There are further reasons: First, Bismarck argued that preventing a revolution by social policy would be cheaper than a redistribution of property in case of a revolution (Wehler, 2006, p.910). Exactly this reasoning – preventing a revolution by using a reform – is in line with the trade-off suggested by Acemoglu and Robinson (2000). Second, the reform was a common interest of the elites in Germany, for instance, the business elites heavily supported the social reform (Paster, 2013). Of course, the model of Acemoglu and Robinson (2000) abstracts from several key features that are worth pointing out: Bismarck also used repression to reduce the support for the opposition. I will control for the repression in my econometric analysis. Moreover, the reaction of the opposition is not an endogenous part of the model. The strength of the opposition is assumed to be constant and there is no room for political strategies. Exactly at this point, I aim to go beyond the model in discussing the mechanisms.

Summarizing, based on an implication of Acemoglu and Robinson (2000), I hypothesize that support for the socialist party would stay constant without a revolution happening. This result would indicate not only a new equilibrium, but also a well organized opposition – a high q – and, thus, a credible commitment to the reform. The underlying assumption I make here is that increasing support for the socialist party is a good proxy for q.

3 Data

My empirical analysis builds on several new datasets. Data from authoritarian countries are often not trustworthy. In the case of Imperial Germany, however, the data quality is regarded as quite high, and different datasets have often been used for empirical analysis in economic history. As some of my sources, most crucially those on the ex-ante existing health insurances, are only available for Prussia, I restrict my analysis to this part of Germany. Prussia was by far the biggest state in Imperial Germany and covered roughly two thirds of the population.

3.1 Health insurance

To capture the effect of Bismarck's social insurance, I focus on the public health insurance scheme.[9] For my analysis, I collected new data from multiple sources to calculate health insurance coverage before Bismarck's reform and subsequently the share of newly insured workers via the public health

[9]In 1884, the accident insurance was introduced. Hence, the health insurance overlaps with this reform. However, I capture the accident insurance by controling for the share of blue-collar workers.

insurance. Three groups must be taken into account: firstly, employees in (larger) factories, secondly, employees in handcrafts, and thirdly, employees in the mining industry who play a special role. In the following, I describe how I calculate the share of already insured employees for each of these three groups.

To take employees in larger companies into account, my main source is an official firm census conducted by the Minister für Handel, Gewerbe und öffentliche Arbeiten (1876a). From this census, I obtain information on every firm with more than 30 workers that offered health insurance to its workers before Bismarck's reform in Prussia.[10] The census aimed to provide a detailed report on the social and economic situation of the workers and was conducted because of the growing concerns over the rising popularity of trade unions, the socialist party, and strikes. The data includes information on the number of workers employed and their sector. Information on the location of the firm helps me to link the data with electoral constituencies. In total, 2.067 firms offered health insurance for 361.574 employees in 1876.

While this firm census provides a complete picture for larger factories, also workers in smaller factories were already covered by health insurances (around 142.000 workers). Here, I rely on official data on the district-level provided by the Minister für Handel, Gewerbe und öffentliche Arbeiten (1876b). I distribute workers and firms from the district level to constituencies and sectors using the share of insured workers for each industry from the firm census and the share of workers for each industry in a constituency within one district. Moreover, some handcrafts (*Handwerk*) already provided health insurance as well. To cover health insurance in handcrafts, I again rely on official data on the district-level provided by the Minister für Handel, Gewerbe und öffentliche Arbeiten (1876b). These insurances cover 157.000 workers. I distribute these already insured workers proportionally according to the proportion of workers in handcrafts in a constituency relative to all workers in workshops in a district. Hence, I have to assume that the share of workers in handcrafts with ex-ante existing health insurance is the same within one district. Given that only about 15% of all ex-ante insured workers were employed in handcrafts and that I still use the variation between 36 districts, this assumption seems rather marginal.

Finally, I take into account that miner guilds (*Knappschaften*) provided mandatory health insurance for all workers in mining (Jopp, 2011). In 1878, 85 miner guilds provided health care for 261.118 workers in more than 3.000 mines, smelting works, and salt works. It is noteworthy that the miner guilds were heavily concentrated in the coal regions in the Ruhr area, Silesia, and Saxony. Following Guinnane and Streb (2021), I assume that all blue-collar workers in mining already had health insurance. The data on blue collar-workers in mining as of 1882 is provided by Galloway (2007).

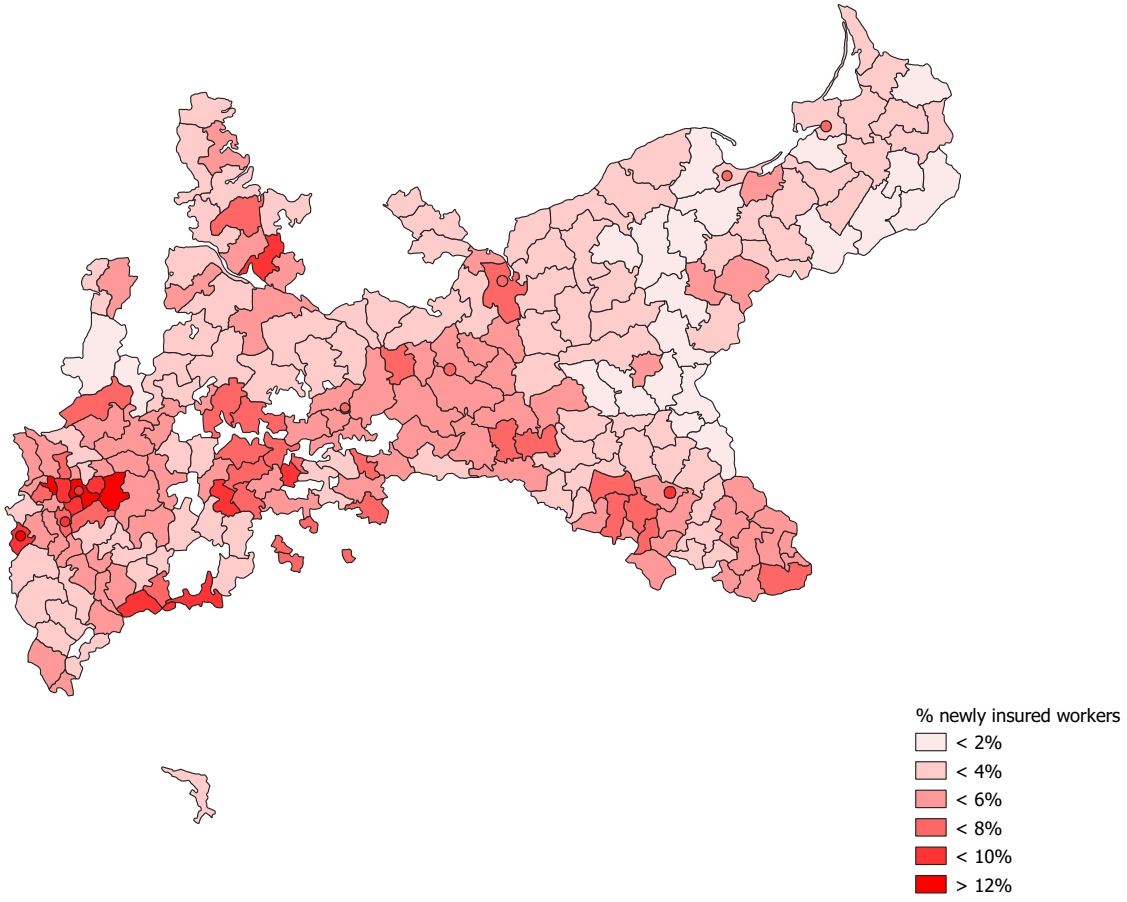
Based on these sources, I estimate that around 35% of all blue-collar workers were already insured. Note that this share varied significantly between different sectors (see Appendix Table B1). While about 60% of all blue-collar workers in textiles already benefited from ex-ante existing health insurance, only 18% of all blue-collar workers employed in the construction and timber industry were covered by health insurance. I use these differences across industries for the validation of my

[10] Appendix Figure A1 shows how the original source looks like.

empirical strategy.

As a final step, I calculate the share of newly insured workers at the level of electoral constituencies. I combine data on ex-ante existing coverage of health insurance with information on blue-collar workers as of 1882 from Galloway (2007). The number of blue-collar workers captures the share of the workforce that was eligible for public health insurance. I subtract the number of workers with ex-ante existing health insurance from blue-collar workers in each constituency and weigh this number by population of each constituency.[11] The share of newly insured workers was, on average, around 5% of the local population (see Appendix Table B3). Figure 1 shows the share of newly insured workers for each constituency. Broadly speaking, the share is higher in constituencies of industrialized regions.

Figure 1: Newly insured workers



Notes: Map of share of newly insured workers (in the population) in Prussia. More red constituencies experienced a higher share of newly insured workers.
Sources: Own calculation based on Minister für Handel, Gewerbe und öffentliche Arbeiten (1876a), Minister für Handel, Gewerbe und öffentliche Arbeiten (1876b), and Galloway (2007).

Firms had several reasons to support health insurance (Frevert, 1984, p.185-219). Importantly, there were economic arguments, e.g., potential productivity increases due the provision of health insurance. In addition, firms hoped to strengthen the loyalty and discipline of the workers in times of

[11] The population data available in Galloway (2007) is as of 1880, the closest population census.

high levels of turnover. These *Fabrikkassen* and similar forms of health insurance had a long tradition in Germany, which went back to the beginnings of the industrialization. Thus, the amount of ex-ante existing health insurance does not reflect an immediate reaction of employers to the growing popularity of the socialist party in the 1870s. This is also shown by the fact that the development of such health insurance before 1876 was quite flat (Bauernschuster et al., 2020, p.2571). To validate the claim that political reasons were not driving the share of ex-ante insured workers, I collect additional data indicating the organizational strength by sector prior to the anti-socialist laws based on Knaack and Schröder (1981). I rely on sectoral newspaper circulation organized by unions in 1877 as measure of organizational strength prior the anti-socialist law. Unfortunately, these data are only available at the national level. The descriptive overview in Appendix Table B12 indicates no positive correlation between the union newspaper circulation and the share of ex-ante insured workers. Thus, the share of ex-ante insured workers is arguably exogenous to the increase in votes for the socialist party during the 1870s.

Relying on these sources implies one assumption: The German parliament introduced the public health insurance in 1884 and the data for ex-ante existing health insurance is from 1876. Thus, I must assume that the share of already insured workers remains stable between 1876 and 1883. Given the flat development of membership in ex-ante existing health share in the years before 1876 (Minister für Handel, Gewerbe und öffentliche Arbeiten, 1876b and Bauernschuster et al., 2020, p.2571), this assumption seems plausible.

Still, a related concern is the role of domestic migration. More specifically, constituencies with a higher share of ex-ante insured workers could attract more workers in the years between 1876 and 1883. This would bias my findings. To alleviate this concern, I test whether the share of newly insured workers is correlated with net-migration during this period. To capture net-migration, I decompose total population growth into its components, first, migration and, second, "natural" population growth. I calculate the difference between the reported "natural" population growth based on births and deaths for each year and the actual population growth between two censuses conducted every five years provided by Galloway (2007). The results in Appendix Table B4 show that the share of newly insured workers does not predict net-migration in the years prior to Bismarck's reform.

3.2 Anti-socialist laws

To quantitatively operationalize the anti-socialist laws, I collect data on all forbidden organizations (in total 245) after the introduction of the anti-socialist law in 1878 until 1879. Historical accounts highlight that the ban on their organizations hit the socialist party hardest (Tennstedt, 1983, p.284). By focusing on forbidden organizations, I aim to capture those constituencies in which the laws especially hit members of the socialist party.

My source is information published in the official *Reichsanzeiger* and collected by Teich (1879).[12] This list includes the type and location of the organization. All of these associations were prohibited

[12] Appendix Figure A2 shows how the original source looks like.

on the basis of the anti-socialist law, i.e., they had links with the socialist party or the trade union. There was a wide range of forbidden associations: explicitly political associations (27%), so-called workers' associations and electoral associations, but also social associations (33%), including singing associations, as well as other groups of associations (see Appendix Table B2). Based on this information, I construct a dummy variable for all constituencies with at least one forbidden organization. Overall, 29 of all 228 electoral constituencies in Prussia were affected.

There are at least three caveats. Certainly, this variable does not capture every aspect of the anti-socialist laws. For instance, the anti-socialist laws led to a ban of most socialist newspapers and magazines, which probably affected more constituencies. Unfortunately, data on the distribution of these newspapers do not exist. Moreover, I cannot rule out that members of banned organizations lived in neighboring constituencies. However, given that constituencies often consist of a city and the surrounding area, this potential issue should be less problematic. In addition, in some cases the socialist party "voluntarily" dissolved their organizations and newspapers before the administration could do so. Thus, I potentially miss some of the socialist activity.

To address these caveats, I use a second measure for the anti-socialist laws, namely party membership as of 1875. Arguably, members of the socialist party were affected by the anti-socialist law and membership. Crucially, this measure accounts more broadly for activity of the socialist party before the anti-socialist law. I digitize data listed by Zwahr (1987) on membership in the socialist party in 1875 when the two predecessors of the socialist party – the ADAV and the SAPD – united. Based on this membership data, I construct a dummy variable for each constituency with at least one member.

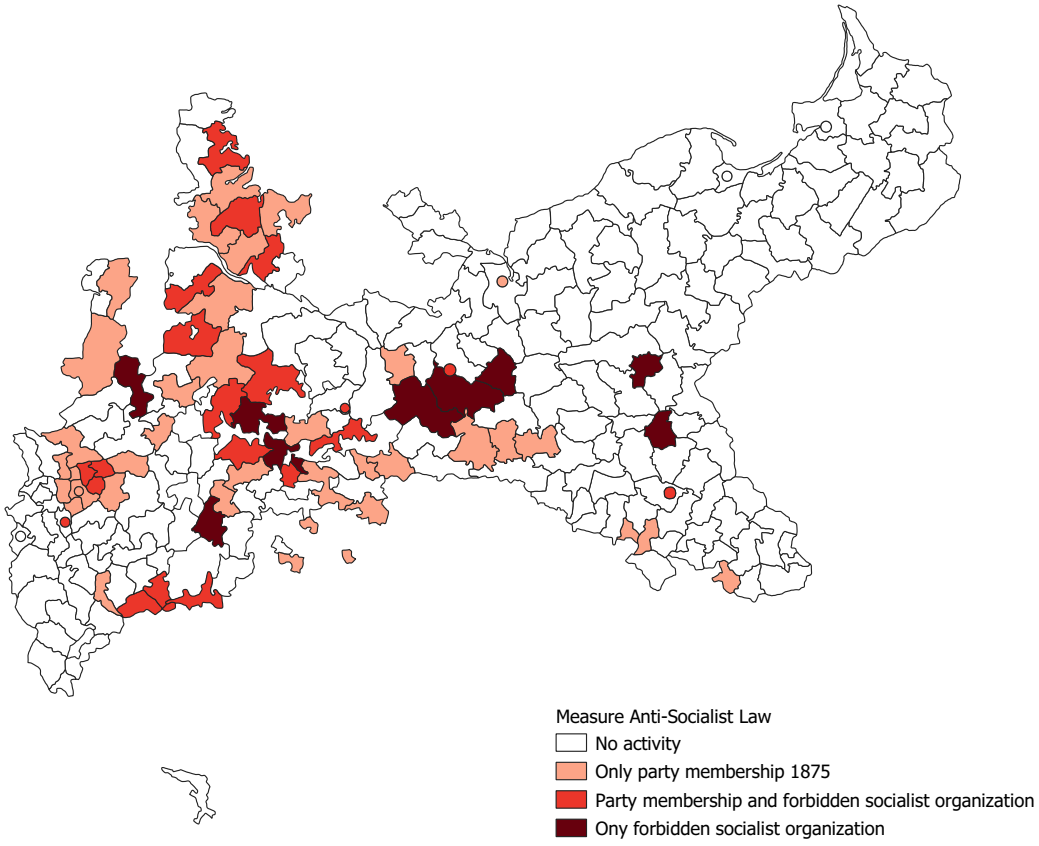
In Figure 2, constituencies with forbidden socialist organizations and or party members are marked in shades of red. Constituencies around Berlin, parts of Saxony, and northern Germany experienced bans of socialist organizations. In most of these constituencies, the socialist party also had active members in 1875. In some other constituencies there were active members in 1875, especially in the Ruhr area and northern Germany, where no socialist organization was forbidden.

Figure 2 and 1 reveal some positive correlation between my measure for the anti-socialist law and the social insurance. To be more precise, the correlation between the share of newly insured workers and the dummy for forbidden socialist organizations is 0.267. The average share of newly insured workers in constituencies with at least one forbidden socialist organization is 6.58, whereas this share is about 4.73 in constituencies with no forbidden socialist organization.

3.3 Legal support for the socialist party: Votes in elections

The main dependent variable of all baseline regressions is vote shares for the socialist party in general elections made available by Caramani (2004). Given the prohibition of other legal activities, e.g., party membership, voting behavior is among the best available measurements for legal support for the SAP. Despite the overall monarchic character of the German *Kaiserreich*, the general elections were important for the government and the socialist party. The government needed a majority to enact laws. Bismarck, for instance, even dissolved the parliament to get a majority for the anti-socialist

Figure 2: Forbidden socialist organizations and party membership



Notes: Map of forbidden socialist organizations at the beginning of the anti-socialist laws (dummy variable) and party membership as of 1875 (dummy variable).
Sources: Own calculation based on Teich (1879) and Zwahr (1987).

laws. For the socialist party, electoral successes remained their main public stage. Because the other parties often formed coalitions against the SAP in the runoff elections in the majority voting system, the SAP rarely won seats in the parliament despite quite high vote shares (Ritter and Niehuss, 1980, p.29). To account for this, I focus on the vote share and not whether the SAP won a seat in an electoral constituency.

The vote shares for the socialist party increased until 1877. Afterwards, the vote shares declined following the introduction of the anti-socialist laws but recovered in 1884 and 1887 and experienced a sharp increase in 1890, the last election before the anti-socialist laws were abolished. The SAP even got the most votes in this election (see Appendix Figure B2 and Appendix Table B3).

4 Empirical strategy and results

In this section, I present evidence on the effect of the introduction of social insurance on changes in vote shares for the SAP. Subsequently, I investigate the effect of the anti-socialist laws before I also consider the interaction of the two policies. Later, I discuss the main threats to identification and

present several robustness checks.

4.1 The effect of the social insurance

Before explaining the empirical strategy, let us take a descriptive look at the main variables of interest. Here, I plot the vote share for the socialist party over time for constituencies below and above the median in the treatment variable share of newly insured workers. Figure B2 shows quite parallel movements (despite different levels) until 1881. In the following elections, the socialist party gained in constituencies with a share of newly insured workers above the median, while their vote share remained constant in other constituencies and only started to increase again in 1890. For a more systematic econometric analysis, I employ three different approaches. First, I exploit spatial variation of health insurance rates before Bismarck's reform as described in Section 3. Second, I construct a shift-share instrument. Third, I make use of between-industry variation in terms of ex-ante existing health share.

Event-study approach For the first step, I compare changes in voting shares for the SAP in constituencies where Bismarck's health insurance led to large additional insurance coverage to constituencies where there was less additional insurance coverage conditional on the share of blue-collar workers. I estimate the following event-study approach

$$\text{SAP}_{it} = \alpha_i + \theta_t + \sum_{t=1871}^{t=1890} \gamma_t(\text{Treatment}_i \cdot \text{Year}_t) + \sum_{t=1871}^{t=1890} \delta_t(\text{BlueCollar}_i \cdot \text{Year}_t) + X_{it}\beta + \epsilon_{it}, \quad (1)$$

where the dependent variable SAP_{it} is the vote share for the SAP in electoral constituency i and year t. α_i captures electoral constituency fixed effects, θ_t election year fixed effects, and X_{it} various time-varying control variables like population provided by Galloway (2007). The key variables of interest are the interactions of year dummies with the impact of Bismarck's health insurance. The coefficients of this interaction (γ_t) show the difference in vote shares in constituencies where Bismarck's insurance led to a one percentage point larger increase in newly-insured workers relative to the last election before the reform in 1881. Success for Bismarck's politics means a declining share of votes in constituencies with a higher share of workers affected by his policies after the health insurance is in place.

In my preferred specification, I also allow for a flexible effect of the share of blue-collar workers as of 1882 to make sure to capture the *specific* effect of the introduction of the health insurance and not *general* correlation between blue-collar workers and votes for the socialist party. The empirical approach is, therefore, to control for the share of blue-collar workers and to look at whether there is a break in any pre-existing differences in the trend of election outcomes *after* the introduction of Bismarck's public health insurance in 1884. The identifying assumption is that without Bismarck's reform any pre-treatment differences would have continued on the same trends.

As further controls, I allow for flexible effects for the share of Protestants to capture the religious cleavage in Imperial Germany. For instance, the end of the *Kulturkampf* might have led to changing

patterns how religious composition affected electoral outcomes, e.g., in the catholic *and* industrialized Ruhr area. In addition, I include interactions between a dummy variable, whether there was at least one forbidden organization, and election dummies to account for the anti-socialist law. Also, I include population (in logs) as control variable. With this set of controls, I am confident to isolate the effect of Bismarck's health insurance reform.

Two aspects of the reform are crucial for this part of the empirical analysis. First, voters could not anticipate the introduction of the health insurance in the election in 1881 because the famous *Kaiserliche Botschaft* announced the reform after the election. This speech of the *Kaiser* read by Bismarck in the German parliament was a turning point insofar that it openly addressed the potential pitfalls of rising social cleavages. Second, a key criterion for using geographic variation in existing insurance coverage for the workers to identify the political impact of Bismarck's reform is that this insurance was redundant of what the public health insurance subsequently covered. In line with this, Hänlein et al. (2009) argue that Bismarck used these existing insurance forms (for instance, so-called *Fabrikkassen*) as a blueprint for the implementation.

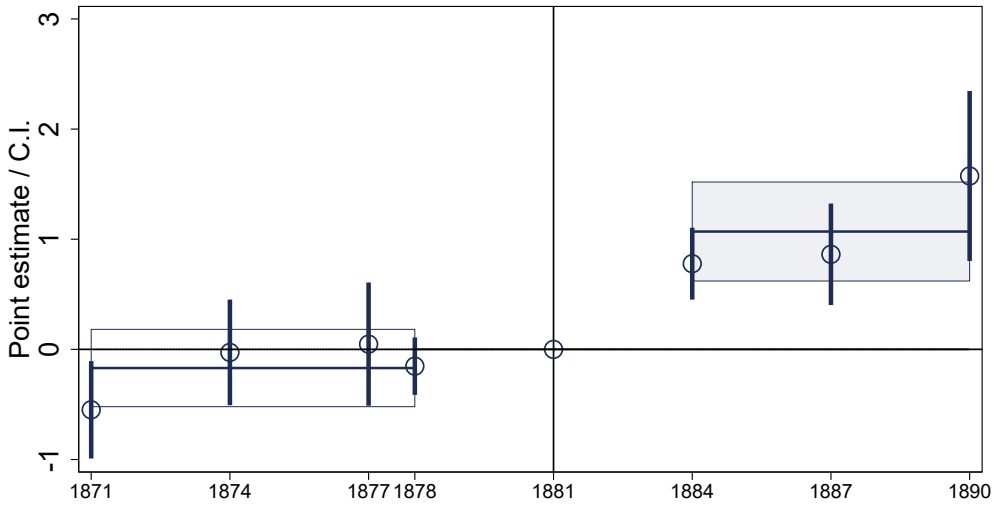
The event-study results in Figure 3 show that the socialist party gained in constituencies with a higher share of newly treated workers after the introduction of health insurance.[13] To demonstrate the economic significance of the effect, I calculate the share of the change between the election in 1881 and 1884 that can be explained by the effect of newly insured workers. On average, the socialist party gained 2 percentage points between 1881 and 1884. Multiplying the standard deviation of newly insured workers (2.15, see Appendix Table B3) and the effect size (0.77 for 1884, see column 3, Appendix Table B5) yields that the socialist party increases their vote share by 1.66 percentage points in a hypothetical electoral constituency with the same share of a blue-collar workers and a higher share of newly insured workers of one standard deviation compared to the election in 1881. Multiplying the average post-treatment effect (1.092) with one standard deviation in the share of newly insured workers explains roughly 25% of one standard deviation in votes for the socialist party.

Figure 3 shows only weak evidence for a significant pre-trend as the coefficients for the elections before 1884 remain mostly insignificant. Moreover, the point estimates do not reveal any clear trend, i.e., the pre-trend is not due to large standard errors. The pre-trends looks highly stable in Figure 3, where the coefficients are basically zero starting in 1874. This absence of a pre-trend is reassuring for my identifying assumption. The coefficient for the first election in 1871 is statistically significant and negative. Note, however, that the election in 1871 was special along two major dimensions. First, the socialist party still consisted of two parties. In contrast to the later elections, one of these socialist parties – the General German Workers' Association – even endorsed Bismarck and the German unification. Second, the election in 1871 was dominated by the end of the French/German war in 1870/71 (Sperber, 1997, p.161).[14]

[13] In Appendix Table B6, I document the results for a dummy variable approach. The dummy equals 1 for all constituencies with a share of newly insured workers above the median. The results confirm the finding in Figure 3.

[14] The election took place on March 3, while the foundation of the German Empire was less than two months earlier on January 18.

Figure 3: Effect of the social insurance on votes for the socialist party



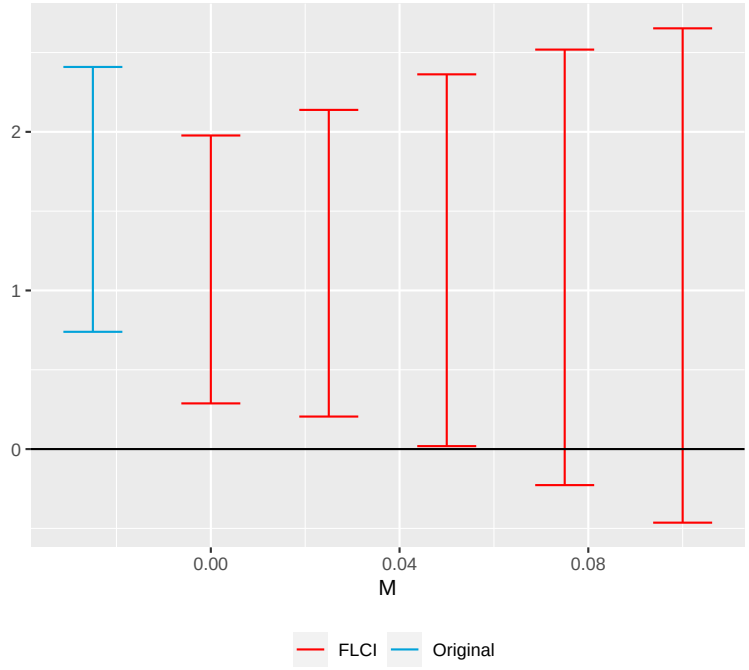
Notes: The figure presents the effect of newly insured workers on the vote share of the socialist party. Regressions are estimated using OLS, and include constituency and year fixed effects. Yearly regression coefficients of interest are interactions between the share of newly insured workers and year fixed effects and are estimated relative to the omitted interaction with 1881, the last election before the reform. In the aggregate specification, coefficients of interest are interactions between the share of newly insured workers and a 1871-1878 dummy ($\beta = -0.169; p = 0.421$) and between the share of newly insured workers and a 1884-1890 dummy ($\beta = 1.070; p = 0.000$). Coefficient estimates on the election interactions are plotted as dots with their 95% confidence intervals indicated with vertical lines. Coefficient estimates on the aggregate interactions are shown with horizontal lines, and their 95% confidence intervals are indicated as boxes. Controls include: Share blue-collar workers $\times$ election dummies, share Protestants $\times$ election dummies, dummy forbidden socialist organization $\times$ election dummies, and population (in log). The results shown in this Figure correspond to column (3) in Appendix Table B5. Standard errors are clustered at the district level.
Sources: Appendix Section A.

Still, to alleviate further concerns regarding the parallel trends assumption, I follow a recent approach by Rambachan and Roth (2022) which tests how sensitive post-treatment violations of parallel trends can be from pre-treatment violations in trends. One specific concern would be that the socialist party targeted constituencies with a lower share of ex-ante insured workers, and that this phenomenon was amplified throughout the elections. Given that the concern is about trends (and not about specific shocks to constituencies with a lower share of ex-ante insured workers in the pre-treatment and post-treatment period), smoothness restrictions seem the correct choice in this context; see the discussion in Rambachan and Roth (2022, section 6). Concretely, this procedure imposes boundaries to which differential trends may change.[15] The plausibility of different values for M depends on the context. Relevant for this paper are arguably persuasion rates on political outcomes found in other studies, particular for autocratic countries (DellaVigna and Gentzkow, 2010). For instance, Enikolopov et al. (2011) find a persuasion rate for independent Russian media of about

[15] Rambachan and Roth (2022) denote these boundaries with M, i.e., $M = 0$ allows for linear violations of parallel trends. Larger values of M correspond to larger deviations.

7.7% for the 1999 election. It would require a deviation from linear parallel trends from election to election of this size in order to get insignificant effects for the post-period in Figure 4. Given the limited room for political activity of the socialist party, this seems to be a very strong assumption against my findings.

Figure 4: Sensitivity analysis



Notes: The graph is produced with the R-package *HonestDiD* provided by Rambachan and Roth (2022). In blue, I report the result for the interaction of "% Newly insured × 1890" reported in Appendix Table B5, column 3. In red, I report for fixed length confidence intervals for values of M between 0 and 0.1.
Sources: Appendix Section A.

The results so far suggest that with the introduction of social insurance the socialist party – contrary to Bismarck's intention – won more votes in those areas where more people were affected by social insurance. The exercise based on Rambachan and Roth (2022) alleviates concerns about the parallel-trend assumptions. To further validate the causal interpretation of my findings, I present two additional approaches: First, a shift-share approach, second, a analysis by industry.

Shift-share approach Regional (unobservable) characteristics may play a role. For example, I cannot rule out the possibility that more health insurance was introduced during the 1870s in regions with more socialist activity (although the historical literature points to older traditions that determine health insurance). To address this concern, I implement a shift-share instrument based on national shares in ex-ante existing health insurance shares by sector and local sector shares.

To construct a shift-share instrument, I decompose the treatment variable into its parts:

$$\text{Treatment}_i = \text{BlueCollar}_i - \text{ExAnteInsured}_i = \sum_j \text{BlueCollar}_{ij} - \text{ExAnteInsured}_{ij} \tag{2}$$

The number of newly insured workers in constituency i consists of the sum (over all sectors j) of the difference between blue-collar workers and ex-ante insured workers.

This sum, in turn, can be instrumented with a shift-share instrument of the following form

$$\sum_j \alpha_{ij}(\text{BlueCollar}_{\text{Prussia},j} - \text{ExAnteInsured}_{\text{Prussia},j}) \tag{3}$$

where α_{ij} denotes the share of blue-collar workers in sector j and constituency i relative to total blue-collar employment in sector j.

Recent contributions on shift-share analysis (for instance, Goldsmith-Pinkham et al., 2020) suggest differentiating between research designs relying on shocks and research designs relying on shares. In my setting, the shares in employment for different industries lead to different exposure to the common shock of public health insurance. The idea is to ask whether differential exposure to public health insurance leads to differential changes in the outcome. Note that this empirical strategy does not assume the shares themselves to be uncorrelated with the political outcomes (Goldsmith-Pinkham et al., 2020, p.2588).

I implement this shift-share instrument in the event-study regression used in equation 1. The results in Table 1 overall confirm the results from Figure 3. The share of newly insured workers shows a strongly positive effect on votes for the socialist party after the introduction of the public health insurance in the second stage (column 1). The coefficients are larger compared to the OLS results in column 2. Note that I include flexible effects for the share of blue-collar workers throughout. Moreover, there is only weak evidence for significant pre-trends. All coefficients are insignificant (except for 1877, but only significant at the 10% level). The results of the shift-approach further validate my empirical strategy.

Between-sector comparison The central remaining concern is that the sector shares that form the basis of my treatment variable predict votes for the socialist parties through channels other than the health insurance. To address these worries, I follow the analysis by industry as proposed by Goldsmith-Pinkham et al. (2020). The main idea is to check whether industries with a low share of ex-ante insured workers indeed drive my overall positive effect.

Therefore, I analyze the pre-trends for all sectors separately in Figure 5. More specifically, I keep blue-collar shares for 10 industries constant at the 1882 values and report the effect of these blue-collar shares on *changes* in votes for the socialist party. In the regressions, I control for population (in logs), the overall share of blue-collar workers interacted with elections dummies, as well as time and constituency fixed effects. To allow comparability, I standardize the coefficients. In most cases, the pre-trends look satisfying with one exception: for some industries (clothes, food, and print/art), I observe a negative coefficient for 1871. However, this negative and significant coefficient is only visible for one year and the coefficients for the remaining years prior to the election remain stable and insignificant.

For the effects after the introduction of public social insurance, evidence in favor of my identifi-

Table 1: Effect of social insurance, shift-share IV

Votes SAP (in %)	Second stage (1)	OLS (2)	Reduced form (3)
% Newly insured × 1871	-0.484	-0.549**	
	(0.329)	(0.244)	
% Newly insured × 1874	-0.281	-0.028	
	(0.394)	(0.265)	
% Newly insured × 1877	0.244	0.048	
	(0.362)	(0.310)	
% Newly insured × 1878	0.127	-0.152	
	(0.137)	(0.144)	
% Newly insured × 1884	1.177***	0.778***	
	(0.204)	(0.180)	
% Newly insured × 1887	1.321***	0.863***	
	(0.265)	(0.255)	
% Newly insured × 1890	2.474***	1.574***	
	(0.486)	(0.427)	
% Newly insured instrument × 1871			-0.445
			(0.308)
% Newly insured instrument × 1874			-0.260
			(0.376)
% Newly insured instrument × 1877			0.227
			(0.343)
% Newly insured instrument × 1878			0.118
			(0.128)
% Newly insured instrument × 1884			1.091***
			(0.167)
% Newly insured instrument × 1887			1.222***
			(0.230)
% Newly insured instrument × 1890			2.290***
			(0.412)
Mean dep. var.	5.18	5.18	5.18
F-Stat excluded instrument	.		
Controls	✓	✓	✓
Constituency FE	✓	✓	✓
Time FE	✓	✓	✓
Observations	1824	1824	1824
Constituencies	228	228	228
Elections	8	8	8
R-squared within		0.50	0.51
R-squared overall		0.40	0.41

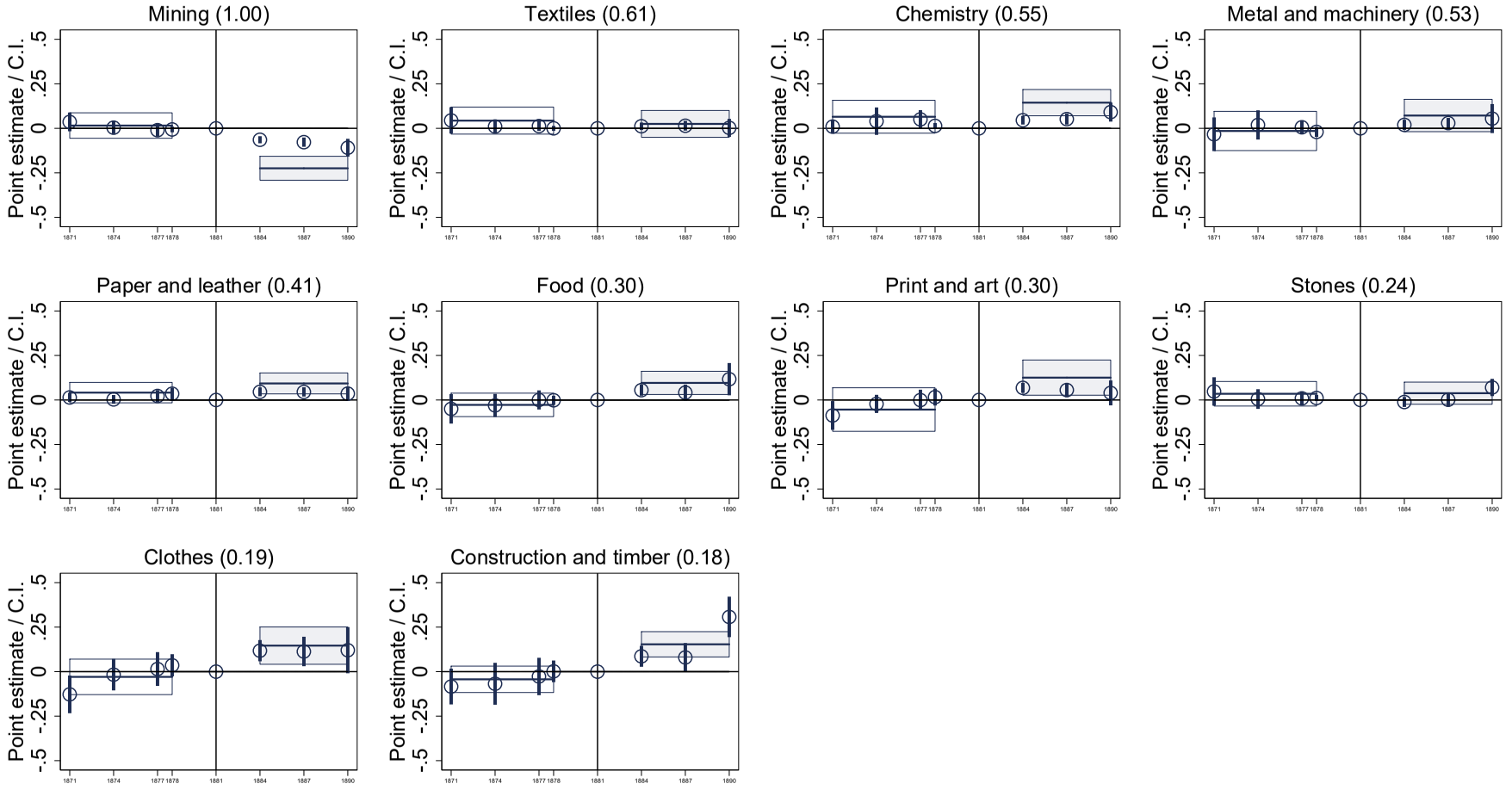
Notes: Unit of analysis: Constituency. The omitted election is 1881. The dependent variable measures the share of votes for the social democratic party. Treatment variables: share of newly insured population in 1884, interacted with election dummies. Controls include: Share blue-collar workers × election dummies, share Protestants × election dummies, dummy forbidden socialist organization × election dummies, and population (in log). Standard errors, clustered at the district level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Sources: Appendix Section A.

cation strategy would show positive and significant effects for sectors with a lower share of ex-ante insured workers. The results in Figure 5 overall support this reasoning. I document the share of ex-ante insured workers in parentheses next to the sector. Clothes and construction/timber – two sectors with a low share of ex-ante insured workers – show the strongest standardized effects. The positive effects for blue-collar workers in print/art and food are smaller in magnitude, but still supportive of my overall case. Note that the effects of textiles with a high share of ex-ante insured workers (around 60%) remain almost constant. This finding is particularly interesting in comparison to clothes as both have a similar structure of employees, but differ in their share of ex-ante insured workers. The even adverse effects of mining also support my argument. These pattern illustrate that sectors with an ex-ante low share of insured workers drive my result. Overall, the pre- and post-trends provide sound support that the introduction of health insurance is the primary channel through which the socialist party gained votes.

Another related concern could be that industries with a lower share of ex-ante insured workers grow faster than industries with a high share of ex-ante insured workers. To rule out this concern, I calculate the growth in employment by industry between the two censuses of 1882 and 1895. Overall, the pattern is in favor of my argument. Industries with a low share of ex-ante insured workers (stones, food, clothing, construction and timber, print and art) grow on average on an almost identical rate (38.18%) as industries (mining, metal and machinery, chemistry, textiles, paper and leather) with a high share of ex-ante insured workers (39.15%).

Figure 5: Pre-trend and post-trend by sector

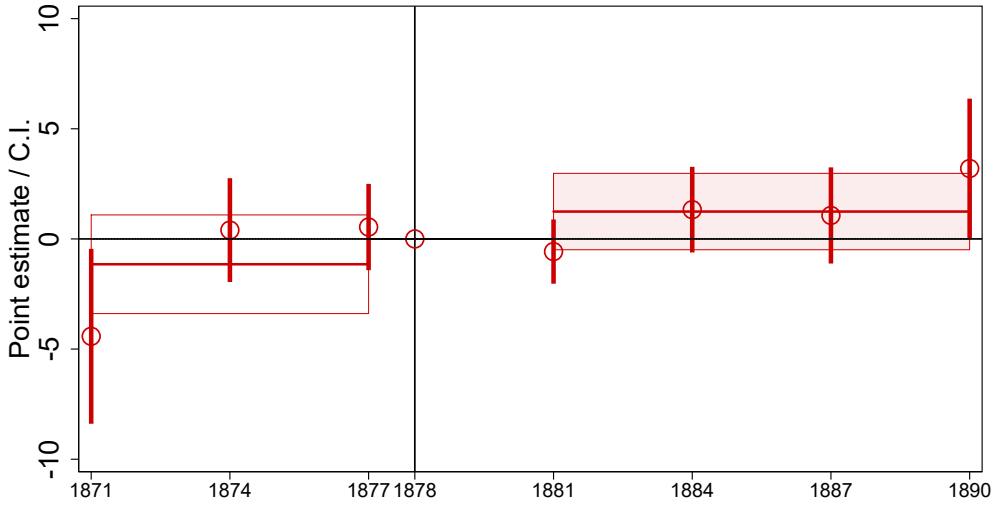


Notes: The results present the flexible effect for the share of blue-collar workers (relative to the population) for different industry sectors on the vote share of the socialist party. Regressions are estimated using OLS, and include constituency and year fixed effects. Yearly regression coefficients of interest are interactions between the share of blue collar workers in a sector (listed above each figure) and year fixed effects and are estimated relative to the omitted interaction with 1881, the last election before the reform. In the aggregate specification, coefficients of interest are interactions between the share of blue collar workers in a sector and a 1871-1878 dummy and between the share of blue collar workers in a sector and a 1884-1890 dummy. Coefficient estimates on the election interactions are plotted as dots with their 95% confidence intervals indicated with vertical lines. Coefficient estimates on the aggregate interactions are shown with horizontal lines, and their 95% confidence intervals are indicated as boxes. Controls include: Share blue-collar workers $\times$ election dummies, share Protestants $\times$ election dummies, dummy forbidden socialist organization $\times$ election dummies, and population (in log). In parentheses next to the sector, I report the share of already insured workers. Standard errors are clustered at the district level.
Sources: Appendix Section A.

4.2 The effect of the anti-socialist laws

In addition to social insurance, Bismarck's policy also included the repressive anti-socialist laws. To account for this, I rely on the approach outlined in equation 1 and focus on a dummy variable whether there was at least one forbidden organization as my key independent variable. Again, I am interested in whether the coefficient for the interaction between dummy variable and election years changes.

Figure 6: Effect of the anti-socialist law on votes for the socialist party



Notes: The figure presents the differential probability on the vote share of the socialist party in constituencies with eventually at least one forbidden socialist organization, relative to constituencies with eventually no forbidden socialist organization. Regressions are estimated using OLS, and include constituency and year fixed effects. Yearly regression coefficients of interest are interactions between the forbidden socialist organizations (dummy) and year fixed effects and are estimated relative to the omitted interaction with 1878, the last election before the reform. In the aggregate specification, coefficients of interest are interactions between the share of newly insured workers and a 1871-1877 dummy ($\beta = -1.149; p = 0.392$) and between the share of newly insured workers and a 1881-1890 dummy ($\beta = 1.242; p = 0.234$). Coefficient estimates on the election interactions are plotted as dots with their 95% confidence intervals indicated with vertical lines. Coefficient estimates on the aggregate interactions are shown with horizontal lines, and their 95% confidence intervals are indicated as boxes. Controls include: Share blue-collar workers $\times$ election dummies, share Protestants $\times$ election dummies, share newly insured workers $\times$ election dummies, and population (in log). The results shown in this Figure correspond to column (3) in Appendix Table B7. Standard errors are clustered at the district level.
Sources: Appendix Section A.

In Figure 6, I present the results on the impact of the anti-socialist laws, which are overall mixed. Before the introduction of the anti-socialist laws in 1878, the socialist party gained votes in constituencies, in which the anti-socialist laws later prohibited socialist organizations. This result is plausible as one would expect more votes in constituencies with more socialist organizations. Still, the effect is insignificant. With the anti-socialist laws in place, this trend stops and the coefficient turns negative.

This pattern again changes in 1884 and the following elections. Interestingly, this change coincides with the introduction of social insurance. The difference between treated and untreated constituencies increases in comparison to the trend before the introduction of the anti-socialist laws in 1884 and the following elections.[16] Note, however, that the anti-socialist laws were less strict enforced in 1890. Overall, I find that the anti-socialist laws led not to a decline in votes for the socialist party despite the harsh measures. In contrast, the aggregate specification even indicates a positive, but insignificant effect. This result is in line with the historical literature. In the next step, I explore the interaction of anti-socialist laws and social insurance.

4.3 The interaction of the carrot and the stick

One of Bismarck's motives for introducing social security was to complement the harsh measures of the anti-socialist laws with social insurance to appease workers. It is therefore particularly interesting to analyze whether there are interaction effects between the two policies. To capture the interaction of the carrot (social insurance) and stick (anti-socialist law), the following difference-in-differences equation captures not only the net-effect of social insurance and the anti-socialist law but also the interaction of the two.

$$\begin{aligned} \text{SAP}_{it} = \alpha_i + \theta_t + \gamma \cdot \text{SocialInsurance}_i \cdot \text{Post1884}_t + \delta \cdot \text{AntiSocialist}_i \cdot \text{Post1878}_t \\ + \rho \cdot \text{SocialInsurance}_i \cdot \text{AntiSocialist}_i \cdot \text{Post1884}_t \\ + \theta_{1878} \cdot \text{Post1878} + \theta_{1884} \cdot \text{Post1884} + X_{it}\beta + \epsilon_{it} \end{aligned} \tag{4}$$

The results in Table 2 capture the effects separately, as well as the interaction of the two policies. Column 1 shows that the SAP overall gained in constituencies where at least one organization was banned. Next, I find that the introduction of the carrot strengthened support for the socialist party (column 2). The results remain similar if I include both policies in column 3. Interestingly, the interaction of carrot and stick is strongly positive and highly significant in column 4. Here, the effect of the stick itself becomes insignificant. Thus, the socialist party gained in constituencies with at least one forbidden socialist organization and a higher share of additionally treated workers. The effect size of the carrot declines, but stays highly significant. I come back to this interaction effect when exploring the mechanisms in Section 5.

4.4 Robustness checks

Other parties and turnout Where do the vote gains for the socialist party come from? Although a precise analysis of voter migration is not possible here, the data allow an analysis of the effect of carrot and stick on the share of votes for other parties and on voter turnout. Here, I follow the regression model in equation 4. The results in Appendix Table B8 are mixed. Apparently, the *Zentrum* – the Catholic party – lost votes in regions that were more affected by the introduction

[16] I observe similar patterns when I rely on party membership as of 1875 as my indicator for the anti-socialist laws (see Appendix Table B7, columns 4-6).

Table 2: Interaction of carrot and stick

Dep. var.: Votes SAP (in %)	Stick (1)	Carrot (2)	Both (3)	Interaction (4)
Forbidden organization × post1878	1.687**		1.272*	-0.677
	(0.672)		(0.660)	(0.926)
% Newly insured × post1884		1.283***	1.261***	1.152***
		(0.152)	(0.153)	(0.157)
% Newly insured × post1884 × forbidden organization				0.433***
				(0.145)
Mean dep. var.	5.18	5.18	5.18	5.18
Controls	✓	✓	✓	✓
Constituency FE	✓	✓	✓	✓
Time FE	✓	✓	✓	✓
Observations	1824	1824	1824	1824
Constituencies	228	228	228	228
Elections	8	8	8	8
R-squared within	0.38	0.41	0.41	0.41
R-squared overall	0.28	0.31	0.31	0.31

Notes: The dependent variable measures the share of votes for the social democratic party. Treatment variables: share of newly insured population in 1884; dummy variable for at least one forbidden organization in the wake of the anti-socialist law. Controls: Share protestants × post1884, share blue collar workers × post1884, and population (log). Standard errors, clustered at the district level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1. *Sources*: Appendix Section A.

of the health insurance. For the other parties, there are also negative signs, though insignificant. Furthermore, turnout did not increase significantly in constituencies with a higher share of newly insured workers.

Serial autocorrelation To account for possible serial autocorrelation and the possibility of downward biased standard errors, I provide additional results where I collapse the data into pre- and post-period following Bertrand et al. (2004) in Appendix Table B9. The results are qualitatively and quantitatively almost identical.

Sample restrictions In addition, I allow for several sample restrictions. I drop the main industrial provinces as well as the the top and bottom quarter in terms of newly insured workers. The effect of the social insurance on votes for the socialist party remains highly significant throughout the different restrictions I apply in Appendix Table B10. This result indicates that my effect is indeed not driven by specific regions or constituencies with a rather low or high share of newly insured workers.

Province×year fixed effects To account for potential regional trends in electoral changes, I include province×year fixed effects in Appendix Table B11. Thereby, I control for time trends on the level of provinces. The results confirm my previous findings.

Accounting for other social conflicts Next to economic and religious cleavages, which I already control for, rural/urban and ethnic cleavages also mattered in Imperial Germany. Hence, I control

for flexible effects for ethnicity (most notable Germans vs Poles) by including the share of German speakers. The increasing tensions along ethnic lines in Germany could potentially overlap with my treatment variable, especially in Silesia. In addition, I allow for flexible effects for the share of urban population to account for potential changes in the rural/urban cleavage. The results in Appendix Table B11 also confirm my previous findings with highly stable effect sizes.

Overall, the empirical results suggest that Bismarck was not able to reduce the votes for the socialist party. On the contrary, the results even provide evidence that the socialist party became particularly successful in the constituencies, where Bismarck's policies affected more workers and voters. The result is partially consistent with the theoretical framework by Acemoglu and Robinson (2000), in which rulers can only credibly commit to social reform if there is a well-organized opposition. I analyze how the socialist party became more successful in the next section.

5 Organizing the opposition

In the last step of my empirical analysis, I investigate the mechanisms by which the socialist party was able to extend their success at the polls despite Bismarck's carrot and stick strategy. In a first step, I analyze how the party was able to reach its voters despite the anti-socialist law. In a second step, I focus on the strategy of the party to attract more voters and the effects thereof.

5.1 Evading the stick: The illegal newspaper *Der Sozialdemokrat*

Without any doubt, the anti-socialist law substantially reduced the room for political activities for the socialist party. Newspapers were one key example. This becomes evident given that 6 out of 26 paragraphs of the anti-socialist law addressed the press. More than 400 newspapers were forbidden. Providing an alternative was crucial for the socialist party and is key to understanding the unsuccessful stick. The main outlet of the party became *Der Sozialdemokrat*. The Prussian minister of the interior Robert Viktor Puttkamer described this newspaper as "one of the most dangerous attacks on the security and inner peace of the German Reich" (cited after Engelberg, 1959, p.51, own translation).

How did the socialist party distribute this newspaper? Julius Motteler and a group of supporters of the socialist party were responsible for managing the complex and illegal distribution of *Der Sozialdemokrat*, which ran from Zurich (and later London) to different German cities. Within Germany, the newspaper was handed to a net of local confidential people, passing the issues to the subscribers. Of course, the police tried to prevent its distribution and, for instance, incarcerated a socialist for six months after they were able to connect his handwriting to the delivery of 600 issues (Belli, 1956, p.125). To limit this risk, the group around Motteler used different strategies: Packaging methods had to be constantly changed and adapted, just like the addresses used. For example, fruit and vegetable baskets or plaster figures and tin cans served as packages (Engelberg, 1959, p.180). Furthermore, the addresses were always written in a different handwriting (Belli, 1956, p.177). Apparently, the smuggling was successful – at least based on the internal reports of the police in Berlin:

the socialist party "learned to systematically evade crucial regulations of the law [the anti-socialist law]" (von Madai, 1983a, p.240, own translation, original from 1884). Later, police chief Guido von Madai de facto resigned: "Effectively countering this smuggling has proved impossible" (von Madai, 1983b, p.271, own translation, original from 1885).[17]

Besides these strategies to distribute the newspaper to Germany, the success of the distribution depended on the local organization of the socialist party. Here, the party strengthened the local networks after the implementation of the anti-socialist laws. This change was necessary because the laws forbid most of the central organization. The police emphasized the "accuracy and diligence" of this system and described the details, according to which each unit is further subdivided and the smallest unit were two houses – at least in Berlin (von Madai, 1983a, p.243, original from 1884). Friedrich Engels was also aware of this system and stressed that "the anti-socialist law forced the masses to organize the movement" (Engels, 1979, p.29, own translation, original from 1883). From a theoretical point of view, the party organized their activities in line with collective action theory (Acemoglu and Robinson, 2006, p.126ff.): The party shifted their activity towards the local level and made it clear how valuable and beneficial each individuals' contributions were.

Luckily, despite its illegal status, the subscribers' lists are available in the digitized archive of Motteler. Based on Motteler (2019), I calculate the number of subscribers for each constituency between 1887 and 1890. Unfortunately, this information is not available for other years. I plot the spatial distribution in the number of subscribers in Appendix Figure B3. While there were a lot of constituencies without subscribers, constituencies around Berlin, in the Ruhr area, parts of Saxony and northern Prussia had quite numerous readership.[18]

To assess whether *Der Sozialdemokrat* was indeed a reallocation for the forbidden activities, I analyze the correlation between legal and illegal activities before and after the anti-socialist law was implemented. The newspaper found more readers in constituencies with signs of party activity before the anti-socialist law. The newspaper was read only in 16.5% of all constituencies without forbidden socialist organization, while this share was almost four times as high (65.5%) in constituencies with at least one forbidden socialist organization. Thus, the socialist party was able to use their old and forbidden infrastructure to establish an illegal newspaper alternative, which became important for the political debates on the social insruance.

5.2 Dominating the narrative

How was the socialist party able to attract more voters despite Bismarck's carrot? As reaction to Bismarck's reform to attract votes from workers, the socialist party aimed to dominate the narrative about the social reform. How did the socialist party manage to achieve this?

[17] After most attempts of the government to halt the distribution of *Der Sozialdemokrat* had failed, Bismarck decided to use the means of foreign policy to stop the editors based in Zurich. Eventually, the Swiss government bowed down to massive political and economic pressure. The editorial team moved to London. With the exception of two editions, the printing took place in Hamburg. This meant that printing plates instead of issues had to be smuggled to Hamburg.

[18] When considering the number of issues sent to a particular city, one should keep in mind that not just the individual subscribers read the issues. Motteler himself estimated, on average, around ten readers of every newspaper issued, as the subscribers handed theirs to others (Stammberger, 1979, p.37).

The party opposed the social reform and demanded far-reaching reform efforts. After the parliament approved the social insurance, an article published in *Der Sozialdemokrat* refused the legislation because it excluded workers in agriculture and it strengthened the role of *Fabrikkassen*, which allowed the employers to control the employees (Der Sozialdemokrat, 2009). Along similar lines, the party criticized the lack of changes in the working conditions in its election campaign (Sozialistische Arbeiterpartei Deutschlands, 1909, p.242ff, original from 1884). In dramatic language, they claimed in their call for vote: "Whoever wants social reform, whoever wants to prevent a social catastrophe through real social reform, and whoever does not want our fatherland to be ruined by police exceptional laws and dubious social experiments, should vote for the Social Democratic candidates in the upcoming Reichstag elections." (Sozialistische Arbeiterpartei Deutschlands, 1909, p.248, own translation, original from 1884). Their stance was credible given that they had demanded more redistribution, safer working conditions and also insurances solely organized by the workers already in their party program of 1875. Later, they often came forward with legislative proposals dealing especially with working conditions (Bebel, 1909, p.392f.). Even the police department in Berlin admitted that the party's agitation was indeed skillful by arguing against the social insurance and demanding safer working conditions (von Madai, 1983b, p.267, original from 1885).

The socialist party's position fell on fertile ground because of the luck of trust in the government. Arguably, Bismarck's sharp rhetoric against the socialists – he described them as "red enemies of the state" which he wanted to fight with a "war of extermination" – reduced the trust workers had (Bismarck, 2004, original from 1878). Significantly, the police department in Berlin was concerned about the mistrust workers had and thought that the repression of the anti-socialist laws was one key reason for this (von Madai, 1983a, p.240f, original from 1884). The socialist party tried to further strengthen the mistrust of their potential voters: In their newspaper, they denounced the social insurance as baits and criticized the social insurance as an attempt to corrupt the workers, which also the police noticed (von Madai, 1983a, p.240f, original from 1884). Their electoral campaign denounced the social insurance as "social demagogy" (Sozialistische Arbeiterpartei Deutschlands, 1909, p.241, own translation, original from 1884).

Apparently, the strategy of the socialist party worked: they managed to criticize the social insurance, demand more and be held responsible for the introduction of a social insurance in the first place. It is telling that even Bismarck and the head police admitted the latter: Bismarck acknowledged in parliament that "if there were no social democracy, and if a lot of people were not afraid of it, the modest progress we have made so far in social reform would not exist" (Bismarck, 1885b). The socialist party often mentioned this quote from Bismarck in their election campaigns. The head of police came to a similar conclusion: one reason for the party's increasing influence on the workers was that the party could credibly claim credit for the social reform. He resigned by stressing this to be a key reason why any additional effort of the government might be fruitless (von Richthofen, 1983, p.290, original from 1886).

Der Sozialdemokrat was not only the way the socialist party evaded the ban on their newspapers, but also can be seen as a proxy whether the party got the power of interpretation over the social

insurance: It is less likely that voters received their message in constituencies without the newspaper. For instance, Bebel wrote to Friedrich Engels in a letter about his strong belief that their newspaper had a great influence on their voters also because other newspapers were not available (Bebel, 1911, p.195, original from 1882). Of course, the circulation of the newspaper is not random. Still, comparing the development of vote shares for the socialist parties with and without readers of *Der Sozialdemokrat* gives some suggestive evidence whether it mattered that the socialist party arguably claimed credit for the social reforms. Therefore, I compare the change in votes for the socialist party in constituencies with and without readers of the newspapers for constituencies with and without forbidden socialist organizations between 1881 and 1890. The party gained most votes in constituencies with forbidden organizations and readers of their newspaper (21.6pp), this is 50% more than in constituencies with forbidden organizations but without readers (14.9pp). Similarly, they also gained more in those constituencies in which voters read their newspaper, when only taking constituencies without forbidden organizations into account (18.1pp vs. 6.1pp).

In addition, I provide evidence for a strong positive interaction effect between the share of newly insured workers and *Der Sozialdemokrat* after the introduction of the social insurance. Therefore, I use the following regression model:

$$\begin{aligned} \text{SAP}_{it} = \alpha_i + \theta_t + \gamma \cdot \text{SocialInsurance}_i \cdot \text{Post1884}_t + \delta \cdot \text{Newspaper}_i \cdot \text{Post1878}_t \\ + \rho \cdot \text{SocialInsurance}_i \cdot \text{Newspaper}_i \cdot \text{Post1884}_t \\ + \theta_{1878} \cdot \text{Post1878} + \theta_{1884} \cdot \text{Post1884} + X_{it}\beta + \epsilon_{it} \end{aligned} \tag{5}$$

The results in Table 3 show a strong positive interaction effect, suggesting that the socialist party particularly gained in constituencies with a higher share of newly insured workers and readers of their newspaper. The descriptive statistics and the heterogeneity analysis suggest that the newspaper helped – arguably due to the sharp rhetoric against the social reform of the government and the demand for more social reforms – the socialist party to gain the power of interpretation over the social insurance.

5.3 Using the carrot: Mutual health funds

As second part of their strategy, the party was able to offer a local cooperative alternative by exploiting one loophole in the health insurance, so-called mutual health funds. This loophole was part of the institutional structure of the health insurance. The insurance was organized in different forms at a local level, most notably local funds (*Allgemeine Ortskrankenkasse*), factory health insurance (*Fabrikkassen*), parish funds (*Gemeindekrankenversicherungen*), and mutual health funds (*Hilfskassen*). All these organizations had to provide the same service. They were self-governed by a board consisting of representatives of the contributors.

The mutual health funds were attractive for politically active workers because (in contrast to other forms of health insurance) it allowed the workers to organize themselves independently of the company owners during the anti-socialist laws (Ritter, 2010, p.86). Only employees were part of their

Table 3: Interaction effect between health insurance and *Der Sozialdemokrat*

Dep. var.: Votes SAP (in %)	(1)	(2)
% Newly insured × post1884	1.283***	1.191***
	(0.152)	(0.154)
% Newly insured × post1884 × socialist newspaper		0.482***
		(0.164)
Socialist newspaper × post1884		-0.651
		(1.140)
Mean dep. var.	5.18	5.18
Controls	✓	✓
Time FE	✓	✓
Constituency FE	✓	✓
Observations	1824	1824
Constituencies	228	228
Elections	8	8
R-squared within	0.41	0.41
R-squared overall	0.31	0.31

Notes: Unit of analysis: constituency. The dependent variable measures the share of votes for the social democratic party. Controls: population (log), share blue collar workers× post1884. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Sources: Appendix Section A.

governing board. In contrast, other forms of health insurance allowed employers to get access to the administration of the health insurance. Thereby, they were able to better control workers linked with the socialists or trade unions (Tauchnitz, 1999). A drawback was that employers did not contribute to this insurance form, i.e., employees paid more to become members of the mutual health fund.

This cost makes it not only astonishing that this form of insurance became popular, but also shows the importance workers attributed to the political freedom that the mutual health funds provided. Roughly 800.000 workers joined this type of health insurance in 1885 alone, accounting for almost 20 percent of all insured workers. This share remained stable throughout the following years.

How was the socialist party able to motivate workers to join the mutual health funds? Activists close to the socialist party organized more than 1000 events in Germany to convince workers to join the mutual health funds (Hänlein et al., 2009, p.XXXIV). In a pamphlet dealing with the social insurance, Bebel (2009, original from 1883) stressed the independence from employers as a key advantage to join the mutual health funds. In addition, he provided a list with different mutual health funds, which indicates the importance of these funds for the socialist party. Moreover, the mutual health funds represented the local social solidarity – organized by the workers themselves – that the socialist party envisioned as alternative to the state organized insurance (Collin, 2011, p.201). Providing a concrete alternative certainly helped their case in convincing voters.

Interestingly, the administration around Bismarck was well aware of this loophole. Minister of the interior von Puttkamer (2009, original from 1883) who was in charge of the central supervision of the anti-socialist laws, wrote to the local governments that they should prohibit speeches like one in Cologne by Bebel and demanded to receive notifications in case of similar events. However, the government refused to change the law although Bismarck suggested to do so. Instead, they opted

for stricter controls of the mutual health funds. This decision was potentially influenced by Theodor Lohmann, the leading advisor of Bismarck for the social insurance reform (Hänlein et al., 2009, p.XXXVIII). Lohmann was in favor of keeping the more liberal aspects of the reform. In addition, he doubted that a ban on the mutual health funds would get a majority in parliament (Tennstedt, 1983, p.334).

To further popularize the mutual health funds, the socialist party activated the "old" infrastructure forbidden by the anti-socialist law. Here, I rely on data indicating the organizational strength by sector before the anti-socialist law and data on membership in mutual health funds organized by sectoral central organizations, both listed in Knaack and Schröder (1981). The descriptive overview in Table B12 shows that more newspaper circulation was correlated with more membership in mutual health funds, especially for construction and timber as well as metal and machinery. At the same time, mutual health funds were particularly weak in sectors that seem to be less politically organized in 1877, e.g., mining, stones, chemistry, and textiles.

While I cannot attribute concrete numbers how exactly the socialist party attracted workers due to data limitations, I provide evidence that the mutual health funds mattered for the electoral success. Here, I rely on the official health insurance statistics, which differentiate between the different forms of health insurance (Kaiserliches Statistisches Amt, 1887). These statistics are only available at the district level (a geographical unit coarser than constituencies). To estimate the effect of membership in those mutual funds on SAP vote shares, I estimate the following equation.

$$\begin{aligned} \text{SAP}_{it} = \alpha_i + \theta_t + \gamma \cdot \text{MutualHealth}_i \cdot \text{Post1884}_t \\ + \theta \cdot \text{SocialInsurances}_i \cdot \text{Post1884}_t + X_{it}\beta + \epsilon_{it} \end{aligned} \tag{6}$$

The results in Table 4 support my argument: the socialist party mainly gained in districts with a higher share of mutual health funds. Note that I control for the share of newly insured workers in column 1 and for the share of blue-collar workers in column 2. Both coefficients are insignificant, while the coefficient for the share of members in mutual health funds is positive and highly significant.

5.4 Outmigration

There is at least one alternative explanation for the lack of success of Bismarck's carrot. Khoudour-Casteras (2008) presents some evidence that the introduction of social insurance led to a decline in outmigration due to an increase in the relative real wage in comparison to the United States. The fall of the emigration of workers could, thereby, strengthen the potential electorate of the socialist party. To account for this explanation, I collected new detailed data on outmigration from the port of Hamburg to the United States. In contrast to the data by Khoudour-Casteras (2008), the data published by the Statistisches Bureau der Deputation für direkte Steuern (1872-1895) includes information on the sector in which the migrants worked. This source does not cover the complete outmigration, but still provides some tentative evidence on the sectoral structure of migrants in this period.

Table 4: Mutual health funds and votes for the socialist party

Dep. var.: Votes SAP (in %)	(1)	(2)
Mutual health funds × post1884	0.995***	1.013***
	(0.358)	(0.353)
Newly insured × post1884	-0.076	
	(0.182)	
Blue collar × post1884		0.099
		(0.139)
Mean dep. var.	6.01	6.01
Controls	✓	✓
District FE	✓	✓
Time FE	✓	✓
Observations	288	288
Districts	36	36
Elections	8	8
R-squared within	0.66	0.66
R-squared overall	0.15	0.17

Notes: Unit of analysis: district. The dependent variable measures the share of votes for the social democratic party. Controls: population (log). Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Sources: Appendix Section A.

Analyzing this data, I can check whether and how the sectoral composition of emigrants changes over time. The hypothesis following Khoudour-Casteras (2008) predicts that the introduction of social insurance is associated with a decline in out-migrating workers. While I find a decrease in the share of migrants employed in the industry sector in Appendix Figure B4, this decline starts already in 1880 and stagnates after the introduction of social insurance. Also, the absolute number of out-migrating industry workers stagnates.

6 Conclusion

Can autocratic governments gain support by implementing a welfare reform and a represive law? Examining Bismarck's famours attempt in 19th century Germany, my results suggest that the oppositon – in contrast to the intention of the government – can actually benefit from the policies. My empirical analysis is based on event-study and difference-in-differences approaches exploiting different levels of treatment intensity for the social insurance policies and treatment exposure for the anti-socialist laws. To address concerns regarding my key identification assumptions, I provide evidence that the results also hold with a shift-share approach and that industry sectors with a low share of ex-ante insured workers show the strongest positive correlation with vote shares for the socialist party after the introduction of the social insurance. I interpret this result as evidence that, indeed, the introduction of health insurance is the key driver.

Coming back to the main argument of Acemoglu and Robinson (2000): It was in Germany that the welfare state was invented (and not in France or the UK), because here the socialists were strongest and thereby allowed the government to credibly commit to reform. My results partially support this commitment mechanism and extend the political economy of such a reform by focusing on the

reaction of the opposition. For the opposition to remain strong, I provide evidence that the socialist party, first, evaded the anti-socialist law by distributing an illegal newspaper, second, gained support despite the welfare reform by claiming the credits for the reform and offering a local cooperative alternative.

However, this paper does not analyze the long-term consequences of Bismarck's policies. The social insurance was at least partially also a co-optation strategy to link the socialist party to the state. One prime example for this are the numerous jobs in the public insurances, which contemporary critiques of the party described as the alleged "rule of the social democrats in the German health insurance" (Möller, 1910). What is more, the debate about the party position on social security can be seen as a precursor to the revisionism debate and the associated question of the role of reforms versus revolution starting in the late 1890s (Gronow, 2016). It was precisely this question (in addition to the evaluation of the First World War) that later divided the social democrats into two camps. Thus, the long-run consequences of Bismarck's policies on electoral success of socialist parties remain an important question to be tackled by future research.

Can the historical case study of 19th century Germany inform modern-day autocracies? The debate about the political effects of welfare reforms in autocracies is still very much relevant, also given the recent wave of autocratization. Autocratic governments still attempt to strengthen their position using welfare reforms and repression. This suggests that modern day autocratic governments and their opposition face similar constellations. The results of this paper show that the opposition can actually benefit from the repression and the welfare reform when – at least in the case of Bismarck's reform – they are able to evade the repression, to claim the credits for reform and to offer a local cooperative alternative.

References

Acemoglu, Daron and James A. Robinson, "Why Did the West Extend the Franchise? Democracy, Inequality, and Growth in Historical Perspective," *The Quarterly Journal of Economics*, 2000, *115* (4), 1167–1199.

_ **and** _ , *Economic origins of dictatorship and democracy*, Cambridge: Cambridge University Press, 2006.

_ **and Simon Johnson**, "Disease and Development: The Effect of Life Expectancy on Economic Growth," *Journal of Political Economy*, 2007, *115* (6), 925–985.

_ **, Tuomas Pekkarinen, Kjell G Salvanes, and Matti Sarvimäki**, "The Making of Social Democracy: The Economic and Electoral Consequences of Norway's 1936 Folk School Reform," *NBER Working Paper No. 29095*, 2021.

Aidt, Toke S. and Peter S. Jensen, "Workers of the World, Unite! Franchise Extensions and the Threat of Revolution in Europe, 1820–1938," *European Economic Review*, 2014, *72*, 52–75.

_ **and Raphaël Franck**, "Democratization under the Threat of Revolution: Evidence from the Great Reform Act of 1832," *Econometrica*, 2015, *83* (2), 505–547.

Alesina, Alberto, Bryony Reich, and Alessandro Riboni, "Nation-building, Nationalism, and Wars," *Journal of Economic Growth*, 2020, *25* (4), 381–430.

_ **, Paola Giuliano, and Bryony Reich**, "Nation-Building and Education," *The Economic Journal*, 2021, *131* (168), 2273–2303.

Assouad, Lydia, "Charismatic Leaders and Nation-Building," *Paris School of Economics Mimeo*, 2021.

Bandiera, Oriana, Myra Mohnen, Imran Rasul, and Martina Viarengo, "Nation-building through compulsory schooling during the age of mass migration," *The Economic Journal*, 2019, *129* (617), 62–109.

Bartel, Horst, Wolfgang Schröder, and Gustav Seeber, *Das Sozialistengsetz 1878–1890. Illustrierte Geschichte des Kampfes der Arbeiterklasse gegen das Ausnahmegsetz*, Berlin: Dietz Verlag, 1980.

Bauernschuster, Stefan, Anastasia Driva, and Erik Hornung, "Bismarck's Health Insurance and the Mortality Decline," *Journal of the European Economic Association*, 2020, *19* (5), 2561–2607.

Bautista, María Angélica, Felipe Gonzalez, Luis Martínez, Pablo Muñoz, and Mounu Prem, "The Geography of Repression and Opposition to Autocracy," *American Journal of Political Science*, 2021, *forthcoming.*

Bazzi, Samuel, Arya Gaduh, Alexander D Rothenberg, and Maisy Wong, "Unity in diversity? How intergroup contact can foster nation building," *American Economic Review*, 2019, *109* (11), 3978–4025.

Bebel, August, "Die Tätigkeit des Deutschen Reichstages von 1887–1889," in August Bebel, ed., *Due Sozialdemokratie im Deutschen Reichstag. Tätigkeitsberichte und Wahlaufrufe aus den Jahren 1871 bis 1893*, Berlin: Buchhandlung Vorwärts, 1909, pp. 285–418.

_ , *Aus meinem Leben*, Berlin: Dietz Verlag, 1911.

_ , "Wie verhalten sich die Arbeiter gegenüber dem neuen Kranken-Versicherungsgesetz?," in Andreas Hänlein, Florian Tennstedt, and Heidi Winter, eds., *Quellensammlung zur Geschichte der deutschen Sozialpolitik 1867 bis 1914. Von der Kaiserlichen Sozialbotschaft bis zu den Februarerlassen Wilhelms II (1881-1890). 5. Band. Die gesetzliche Krankenversicherung und die eingeschriebenen Hilfskassen*, Mainz: Akademie der Wissenschaften und Literatur, 2009, pp. 257–258.

Belli, Joseph, *Die rote Feldpost unterm Sozialistengesetz*, Berlin: Dietz Verlag, 1956.

Bertrand, Marianne, Esther Duflo, and Sendhil Mullainathan, "How Much Should We Trust Differences-in-Differences Estimates?," *The Quarterly Journal of Economics*, 2004, *119* (1), 249–275.

Bismarck, Otto, "Reichstagsrede; 23. Sitzung 09.05.1884," in "Stenographische Berichte über die Verhandlungen des Reichstags. V. Legislaturperiode, IV. Session 1884, Erster Band," Berlin: Verlag der Buchdruckerei der „Norddeutschen Allgemeinen Zeitung", 1885.

_ , "Reichstagsrede; 3. Sitzung 26.11.1884," in "Stenographische Berichte über die Verhandlungen des Reichstags. VI. Legislaturperiode, I. Session 1884/85, Erster Band," Berlin: Verlag der Buchdruckerei der „Norddeutschen Allgemeinen Zeitung", 1885.

_ , "Sitzung des Kronrats im Kronprinzen-Palais, Berlin, Unter den Linden, am 5. Juni 1878," in Jürgen Kocka and Wolfgang Neugebauer, eds., *Die Protokolle des Preußischen Staatsministeriums*, Hildesheim: Olms-Weidmann, 2004.

Blanc, Guillaume and Masahiro Kubo, "Schools, Language, and Nations: Evidence From a Natural Experiment in France," *Brown University Mimeo*, 2021.

Blouin, Arthur and Sharun W Mukand, "Erasing ethnicity? Propaganda, nation building, and identity in Rwanda," *Journal of Political Economy*, 2019, *127* (3), 1008–1062.

Boese, Vanessa A, Martin Lundstedt, Kelly Morrison, Yuko Sato, and Staffan I Lindberg, "State of the world 2021: autocratization changing its nature?," *Democratization*, 2022, pp. 1–31.

Brückner, Markus and Antonio Ciccone, "Rain and the Democratic Window of Opportunity," *Econometrica*, 2011, *79* (3), 923–947.

Caprettini, Bruno and Hans-Joachim Voth, "From Welfare to Warfare: New Deal Spending and Patriotism during World War II," *Quarterly Journal of Economics*, 2022, *Forthcoming*.

_ **, Lorenzo Casaburi, and Miriam Venturini**, "The Electoral Impact of Wealth Redistribution: Evidence from the Italian Land Reform," *CEPR Discussion Paper No. 15679*, 2021.

Caramani, Daniele, *Elections in Western Europe since 1815: Electoral Results by Constituencies*, Basingstoke: Palgrave Macmillan, 2004.

Card, David, " Using Regional Variation in Wages to Measure the Effects of the Federal Minimum Wage," *Industrial and Labour Relations Review*, 1992, *46* (1), 22–37.

Cinnirella, Francesco and Ruth Schueler, "Nation building: The role of central spending in education," *Explorations in Economic History*, 2018, *67*, 18–39.

Collin, Peter, "Optionen und Kontinuitäten regulierter Selbstregulierung in der frühen Kranken- und Altersversicherung," *Rechtsgeschichte*, 2011, *18*, 186–212.

Dell, Melissa and Pablo Querubin, "Nation building through foreign intervention: Evidence from discontinuities in military strategies," *The Quarterly Journal of Economics*, 2018, *133* (2), 701–764.

DellaVigna, Stefano and Matthew Gentzkow, "Persuasion: empirical evidence," *Annu. Rev. Econ.*, 2010, *2* (1), 643–669.

Depetris-Chauvin, Emilio, Ruben Durante, and Filipe Campante, "Building nations through shared experiences: Evidence from African football," *American Economic Review*, 2020, *110* (5), 1572–1602.

Der Sozialdemokrat, "Die Sozialdemokratie lehnt die Arbeiterversicherungsgesetzgebung als Klassengesetzung ab," in Andreas Hänlein, Florian Tennstedt, and Heidi Winter, eds., *Quellensammlung zur Geschichte der deutschen Sozialpolitik 1867 bis 1914. Von der Kaiserlichen Sozialbotschaft bis zu den Februarerlassen Wilhelms II (1881-1890). 5. Band. Die gesetzliche Krankenversicherung und die eingeschriebenen Hilfskassen*, Mainz: Akademie der Wissenschaften und Literatur, 2009, pp. 158–159.

Derenoncourt, Ellora and Claire Montialoux, "Minimum Wages and Racial Inequality," *The Quarterly Journal of Economics*, 2021, *136* (1), 169–228.

Dower, Paul Castañeda, Evgeny Finkel, Scott Gehlbach, and Steven Nafziger, "Collective action and representation in autocracies: Evidence from Russia's great reforms," *American Political Science Review*, 2018, *112* (1), 125–147.

Eichengreen, Barry, *The Populist Temptation: Economic Grievance and Political Reaction in the Modern Era*, Oxford: Oxford University Press, 2018.

Engelberg, Ernst, *Revolutionäre Politik und Rote Feldpost 1878-1890*, Berlin: Akademie Verlag, 1959.

Engels, Friedrich, "Engels an Johann Philipp Becker," in "Karl Marx. Friedrich Engels. Werke Band 36," Berlin: Dietz Verlag, 1979, pp. 28–29.

Enikolopov, Ruben, Maria Petrova, and Ekaterina Zhuravskaya, "Media and political persuasion: Evidence from Russia," *American Economic Review*, 2011, *101* (7), 3253–85.

Fenge, Robert and Beatrice Scheubel, "Pensions and Fertility: Back to the Roots," *Journal of Population Economics*, 2017, *30* (1), 93–139.

Finkel, Evgeny, Scott Gehlbach, and Tricia D Olsen, "Does Reform Prevent Rebellion? Evidence from Russia's Emancipation of the Serfs," *Comparative Political Studies*, 2015, *48* (8), 984–1019.

Finkelstein, Amy, "The Aggregate Effects of Health Insurance: Evidence from the Introduction of Medicare," *The Quarterly Journal of Economics*, 2007, *122* (1), 1–37.

Fouka, Vasiliki, "Backlash: The unintended effects of language prohibition in US schools after World War I," *The Review of Economic Studies*, 2020, *87* (1), 204–239.

Frevert, Ute, *Krankheit als politisches Problem 1770–1880. Soziale Unterschichten in Preußen zwischen medizinischer Polizei und staatlicher Sozialversicherung*, Göttingen: Vandenhoeck & Ruprecht, 1984.

Galiani, Sebastian, Nadya Hajj, Patrick J McEwan, Pablo Ibarraran, and Nandita Krishnaswamy, "Voter Response to Peak and End Transfers: Evidence from a Conditional Cash Transfer Experiment," *American Economic Journal: Economic Policy*, 2019, *11* (3), 232–60.

Galloway, Patrick R., *Galloway Prussia Database 1861 to 1914*, www.patrickgalloway.com, 2007.

Goldsmith-Pinkham, Paul, Isaac Sorkin, and Henry Swift, "Bartik Instruments: What, When, Why and How," *American Economic Review*, 2020, *110* (8), 2586–2624.

Gronow, Jukka, *On the Formation of Marxism: Karl Kautsky's Theory of Capitalism, the Marxism of the Second International and Karl Marx's Critique of Political Economy*, London: Haymarket Books, 2016.

Guinnane, Timothy W. and Jochen Streb, "Incentives that (Could Have) Saved Lives: Government Regulation of Accident Insurance Associations in Germany, 1884-1914," *The Journal of Economic History*, 2015, *75* (4), 1196–1227.

_ and _, "The Introduction of Bismarck's Social Security System and its Effects on Marriage and Fertility in Prussia," *Population and Development Review*, 2021, *47* (3), 749–780.

Hager, Anselm and Krzysztof Krakowski, "Does State Repression Spark Protest? Evidence from Secret Police Surveillance in Communist Poland," *American Political Science Review*, 2022, *116* (2), 564–579.

Huet-Vaughn, Emiliano, "Stimulating the Vote: ARRA Road Spending and Vote Share," *American Economic Journal: Economic Policy*, 2019, *11* (1), 292–316.

Hänlein, Andreas, Florian Tennstedt, and Heidi Winter, *Quellensammlung zur Geschichte der deutschen Sozialpolitik. II. Abteilung. Von der Kaiserlichen Botschaft bis zu den Februarerlassen Wilhelms II. (1881-1890). 5. Band. Die gesetzliche Krankenversicherung und die eingeschriebenen Hilfskassen*, Mainz: Akademie der Wissenschaften und Literatur, 2009.

Jopp, Tobias A., "Insurance, Size and Exposure to Acturial Risk: Empirical Evidence from Nineteenth- and early Twentieth-Century German Knappschaften," *Financial History Review*, 2011, *19* (1), 75–116.

_ **and Jochen Streb**, "Die Einführung der Bismarckschen Sozialversicherung und ihre Folgen für die Arbeits-und Lebensverhältnisse," in Ulrich Pfister, Jan Hesse, Mark Spoerer, and Nikolaus Wolf, eds., *Deutschland 1871. Die Nationalstaatsbildung und der Weg in die moderne Wirtschaft*, Mohr Siebeck Tübingen 2021, pp. 267–289.

Kaiserliches Statistisches Amt, *Statistik des Deutschen Reichs. Neue Folge. Band 24. Statistik der Krankenversicherung der Arbeiter im Jahre 1885*, Berlin: Verlag von Puttkammer & Mühlbrecht, 1887.

Khoudour-Casteras, David, "Welfare State and Labor Mobility: The Impact of Bismarck's Social Legislation on German Emigration before World War I," *Journal of Economic History*, 2008, *68* (1), 211–243.

Knaack, Rudolf and Wolfgang Schröder, "Gewerkschaftliche Zentralverbände, Freie Hilfskassen und die Arbeiterpresse unter dem Sozialistengesetz. Die Berichte des Berliner Polizeipräsidenten vom 4. September 1886 und 28. Mai 1888," *Jahrbuch für Geschichte*, 1981, *22*, 351–481.

Kocka, Jürgen, "Bismarck und die Entstehung des deutschen Sozialstaats," *Francia*, 2016, *43*, 397–408.

Kogan, Vladimir, "Do Welfare Benefits Pay Electoral Dividends? Evidence from the National Food Stamp Program Rollout," *The Journal of Politics*, 2021, *83* (1), 58–70.

Lehmann-Hasemeyer, Sibylle and Jochen Streb, "Does Social Security Crowd Out Private Savings? The Case of Bismarck's System of Social Insurance," *European Review of Economic History*, 2018, *22* (3), 298–321.

Lidtke, Vernon, *The Outlawed Party: Social Democracy in Germany, 1878–1890*, Princeton [NJ]: Princeton University Press, 1966.

Lührmann, Anna, Seraphine F. Maerz, Sandra Grahn, Nazifa Alizada, Lisa Gastaldi, Sebastian Hellmeier, Garry Hindle, and Staffan I. Lindberg, *Autocratization Surges – Resistance Grows. Democracy Report 2020*, University of Gothenburg: V-Dem Institute, 2020.

Manacorda, Marco, Edward Miguel, and Andrea Vigorito, "Government Transfers and Political Support," *American Economic Journal: Applied Economics*, 2011, *3* (3), 1–28.

Minister für Handel, Gewerbe und öffentliche Arbeiten, *Die Einrichtungen für die Wohlfahrt der Arbeiter der grösseren gewerblichen Anlagen im preussischen Staate. I. Teil. Beschreibung der Einrichtungen*, Berlin: Verlag des Königlich Preussischen Statistischen Bureaus, 1876.

_ , *Die unter staatlicher Aufsicht stehenden gewerblichen Hülfskassen für Arbeitnehmer (mit Ausschluss der sog. Knappschaftskassen) und die Versicherung gewerblicher Arbeitnehmer gegen Unfälle im preussischen Staate*, Berlin: Verlag des Königlich Preussischen Statistischen Bureaus, 1876.

Mohr, Cathrin, "Carrots and Sticks. Targeting the Opposition in an Autocratic Regiome," *University of Bonn Mimeo*, 2021.

Möller, Wilhelm, *Die Herrschaft der Sozialdemokratie in der deutschen Krankenversicherung*, Berlin: Reichsverband gegen die Sozialdemokratie, 1910.

Motteler, Julius, *Julius Motteler Papers, Inventory Number 1328*, Amsterdam: International Institute of Social History, 2019.

Murtin, Fabrice and Romain Wacziarg, "The democratic transition," *Journal of Economic Growth*, 2014, *19* (2), 141–181.

Nipperdey, Thomas, *Deutsche Geschichte 1866-1918. Band II. Machtstaat vor der Demokratie*, München: C.H. Beck, 1992.

Paster, Thomas, "Business and Welfare State Development: Why Did Employers Accept Social Reforms?," *World Politics*, 2013, *65* (3), 416–451.

Rambachan, Ashesh and Jonathan Roth, "A More Credible Approach to Parallel Trends," *Brown University Mimeo*, 2022.

Ritter, Gerhard A., *Sozialversicherung in Deutschland und England. Entstehung und Grundzüge im Vergleich*, München: C.H. Beck, 1983.

_ , *Der Sozialstaat: Entstehung und Entwicklung im internationalen Vergleich*, München: Walter de Gruyter, 2010.

_ **and Klaus Tenfelde**, *Arbeiter im Deutschen Kaiserreich 1871 bis 1914*, Bonn: Verlag J.H.W. Dietz, 1992.

_ **and Merith Niehuss**, *Wahlgeschichtliches Arbeitsbuch. Materialien zur Statistik des Kaiserreichs 1871–1918*, Mn̈chen: C.H.Beck, 1980.

Scheubel, Beatrice, *Bismarck's Institutions. A Historical Perspective on the Social Security Hypothesis*, Tübingen: Mohr-Siebeck, 2013.

Sozialistische Arbeiterpartei Deutschlands, "Aufruf der sozialdemokratischen Fraktion zur zweiten Reichstagswahl unter dem Sozialistengesetz," in August Bebel, ed., *Die Sozialdemokratie im Deutschen Reichstag. Tätigkeitsberichte und Wahlaufrufe aus den Jahren 1871 bis 1893*, Berlin: Buchhandlung Vorwärts, 1909, pp. 218–248.

Sperber, Jonathan, *The Kaiser's voters: electors and elections in Imperial Germany*, Cambridge: Cambridge University Press, 1997.

Stammberger, Erhard, *Pressearbeit im Klassenkampf. 100 Jahre 'Der Sozialdemokrat'*, Hamburg: W. Runge Verlag, 1979.

Statistisches Bureau der Deputation für direkte Steuern, *Statistik des Hamburgischen Staats*, Hamburg: Verlag von Otto Meissner, 1872-1895.

Tauchnitz, Thomas, *Krankenkassen - Zwang oder Segen? Organisationsgeschichte des deutschen Krankenkassenwesens im "langen" 19. Jahrhundert*, Opladen: Leske & Budrich, 1999.

Teich, Christian, *Alphabetisches Verzeichnis der auf Grund des Reichs-Gesetzes vom 21. Oktober 1878 erlassenen Verfügungen gegen die Socialdemokatrie bis 30. Juni 1879*, Lobenstein: Verlag von Christian Teich's Buchhandlung, 1879.

Tennstedt, Florian, *Vom Proleten zum Industriearbeiter. Arbeiterbewegung und Sozialpolitik in Deutschland 1800 bis 1914*, Bayreuth: Otto Brenner Stiftung, 1983.

Thomson, Henry, "Targeted Repression and Electoral Opposition under Authoritarianism: Effects of Expulsions of German Social Democrats, 1878-1890," *Comparative Politics*, 2022, *54*, 93–139.

Voigtländer, Nico and Hans-Joachim Voth, "Highway to Hitler," *American Economic Journal: Applied Economics*, 2021, *forthcoming*.

von Madai, Guido, "Übersicht über die allgemiene Lage der sozialdemokratischen und revolutionären Bewegung. 1. November 1884," in Dieter Fricke and Rudolf Knaack, eds., *Dokumente aus geheimen Archiven. Band 1, 1878-1889*, Weimar: Berliner Wissenschaftsverlag, 1983, pp. 240–263.

_ , "Übersicht über die allgemiene Lage der sozialdemokratischen und revolutionären Bewegung. 6. Juli 1885," in Dieter Fricke and Rudolf Knaack, eds., *Dokumente aus geheimen Archiven. Band 1, 1878-1889*, Weimar: Berliner Wissenschaftsverlag, 1983, pp. 264–289.

von Puttkamer, Robert, "Runderlaß des preußischen Innenminister Robert von Puttkamer an die Bezirksregierungen und den Berliner Polizeipräsidenten (27. November 1883)," in Andreas Hänlein, Florian Tennstedt, and Heidi Winter, eds., *Quellensammlung zur Geschichte der deutschen Sozialpolitik 1867 bis 1914. Von der Kaiserlichen Sozialbotschaft bis zu den Februarerlassen Wilhelms II (1881-1890). 5. Band. Die gesetzliche Krankenversicherung und die eingeschriebenen Hilfskassen*, Mainz: Akademie der Wissenschaften und Literatur, 2009, pp. 247–249.

von Richthofen, Bernhard, "Übersicht über die allgemiene Lage der sozialdemokratischen und revolutionären Bewegung. 24. Juli 1886," in Dieter Fricke and Rudolf Knaack, eds., *Dokumente aus geheimen Archiven. Band 1, 1878-1889*, Weimar: Berliner Wissenschaftsverlag, 1983, pp. 290–317.

Wehler, Hans-Ulrich, *Deutsche Gesellschaftsgeschichte. Dritter Band 1849-1914*, München: C.H. Beck, 2006.

Zwahr, Hartmut, "Die deutsche Arbeiterbewegung im Länder- und Territorienvergleich 1875," *Geschichte und Gesellschaft*, 1987, *13* (4), 448–507.

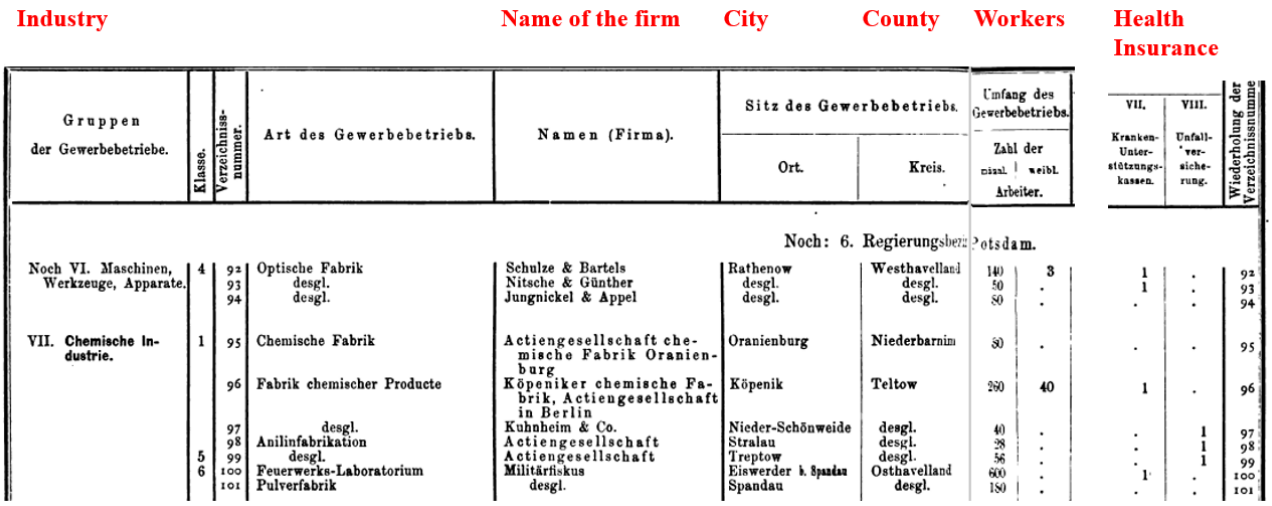
Appendix

A Sources

Newly insured workers (in %). For details see section 3. Own calculation based on Minister für Handel, Gewerbe und öffentliche Arbeiten (1876a), Minister für Handel, Gewerbe und öffentliche Arbeiten (1876b) and Galloway (2007). The measure is calculated for each constituency i in the following way:

$$\frac{\text{Blue-collar workers}_i - \text{Workers with ex-ante existing health insurance}_i}{\text{Population}_i}.$$

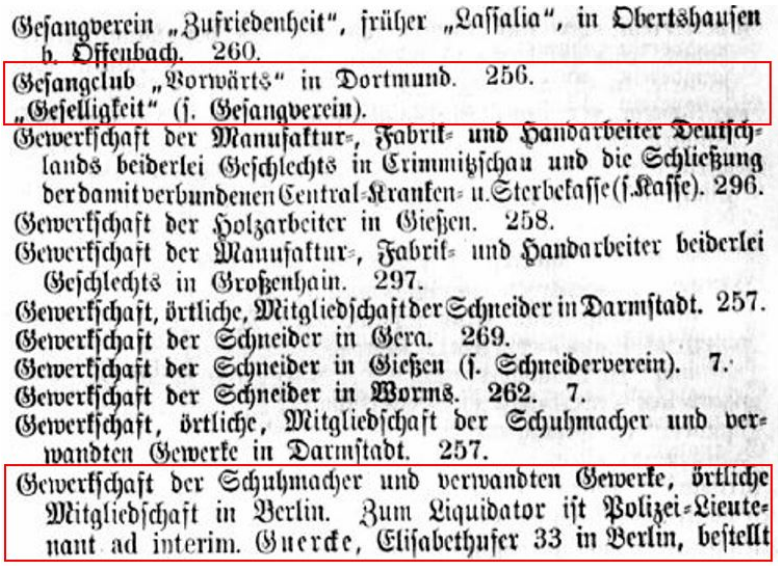
Figure A1: Firm census in Minister für Handel, Gewerbe und öffentliche Arbeiten (1876a), example



Gruppen der Gewerbebetriebe.	Klasse.	Verzeichnissnummer.	Art des Gewerbebetriebs.	Namen (Firma).	Sitz des Gewerbebetriebs. Ort.	Kreis.	Umfang des Gewerbebetriebs. Zahl der männl. Arbeiter.	weibl. Arbeiter.	VII. Kranken-Unterstützungskassen.	VIII. Unfallversicherung.	Wiederholung der Verzeichnissnummer
				Noch: 6. Regierungsbez. Potsdam.							
Noch VI. Maschinen, Werkzeuge, Apparate.	4	92	Optische Fabrik	Schulze & Bartels	Rathenow	Westhavelland	140	3	1	.	92
		93	desgl.	Nitsche & Günther	desgl.	desgl.	50	.	1	.	93
		94	desgl.	Jungnickel & Appel	desgl.	desgl.	80	.	.	.	94
VII. Chemische Industrie.	1	95	Chemische Fabrik	Actiengesellschaft chemische Fabrik Oranienburg	Oranienburg	Niederbarnim	80	.	.	.	95
		96	Fabrik chemischer Producte	Köpeniker chemische Fabrik, Actiengesellschaft in Berlin	Köpenik	Teltow	280	40	1	.	96
		97	desgl.	Kuhnheim & Co.	Nieder-Schönweide	desgl.	40	.	.	1	97
		98	Anilinfabrikation	Actiengesellschaft	Stralau	desgl.	28	.	.	1	98
	5	99	desgl.	Actiengesellschaft	Treptow	desgl.	56	.	.	1	99
	6	100	Feuerwerks-Laboratorium	Militärfiskus	Eiswerder b. Spandau	Osthavelland	600	.	1	.	100
		101	Pulverfabrik	desgl.	Spandau	desgl.	180	.	.	.	101

Forbidden socialist organization (Dummy). Dummy variable based on the list of forbidden socialist organizations in Teich (1879).

Figure A2: List of forbidden socialist organizations in Teich (1879), example



Gesangverein „Zufriedenheit", früher „Lassalia", in Obertshausen b. Offenbach. 260.
Gesangclub „Vorwärts" in Dortmund. 256.
„Geselligkeit" (s. Gesangverein).
Gewerkschaft der Manufaktur-, Fabrik- und Handarbeiter Deutschlands beiderlei Geschlechts in Crimmitzschau und die Schließung der damit verbundenen Central-Kranken- u. Sterbekasse (s. Kasse). 296.
Gewerkschaft der Holzarbeiter in Gießen. 258.
Gewerkschaft der Manufaktur-, Fabrik- und Handarbeiter beiderlei Geschlechts in Großenhain. 297.
Gewerkschaft, örtliche, Mitgliedschaft der Schneider in Darmstadt. 257.
Gewerkschaft der Schneider in Gera. 269.
Gewerkschaft der Schneider in Gießen (s. Schneiderverein). 7.
Gewerkschaft der Schneider in Worms. 262. 7.
Gewerkschaft, örtliche, Mitgliedschaft der Schuhmacher und verwandten Gewerke in Darmstadt. 257.
Gewerkschaft der Schuhmacher und verwandten Gewerke, örtliche Mitgliedschaft in Berlin. Zum Liquidator ist Polizei-Lieutenant ad interim. Guercke, Elisabethufer 33 in Berlin, bestellt

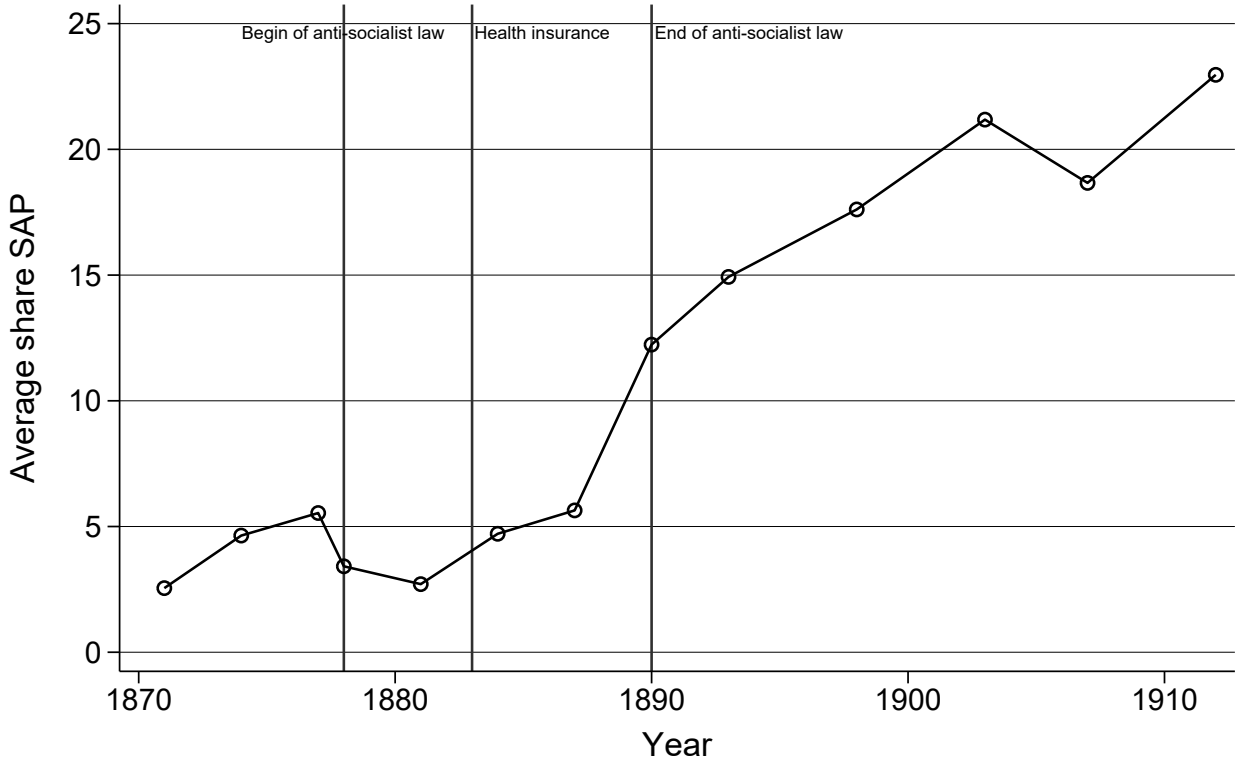
Blue-collar workers (in %). Number of blue-collar workers relative to population based on Galloway (2007).

Votes for the socialist party (in %). Number of votes for the socialist party relative to votes based on Caramani (2004).

Circulation of illegal newspaper *Der Sozialdemokrat*. Total number of distributed newspapers in a constituency. Own calculation based on Motteler (2019).

B Tables and figures

Figure B1: Vote shares for the socialist party, 1871–1912

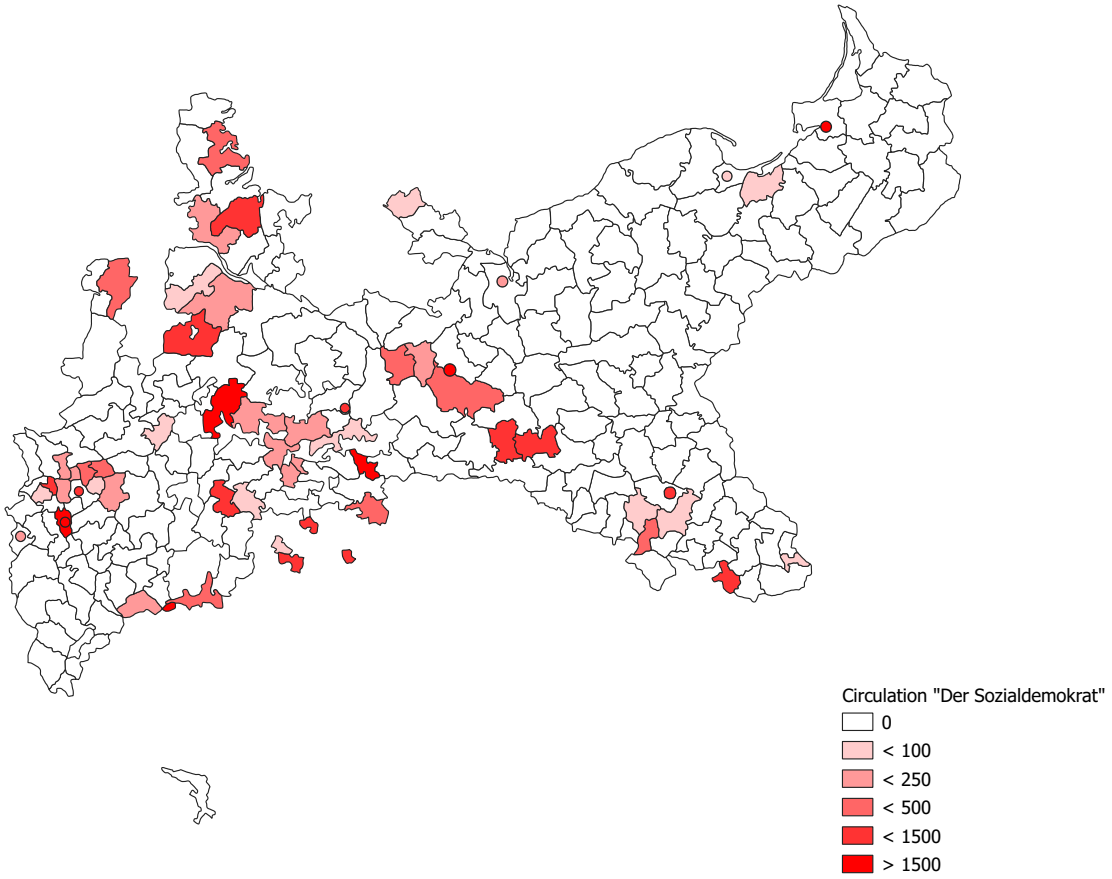


Notes: The graph shows the average vote share for the socialist party in Prussian constituencies in *Reichstag* elections between 1871 and 1912.
Sources: Own calculation based on Caramani (2004).

Figure B2: Vote shares for the socialist party, 1871–1890

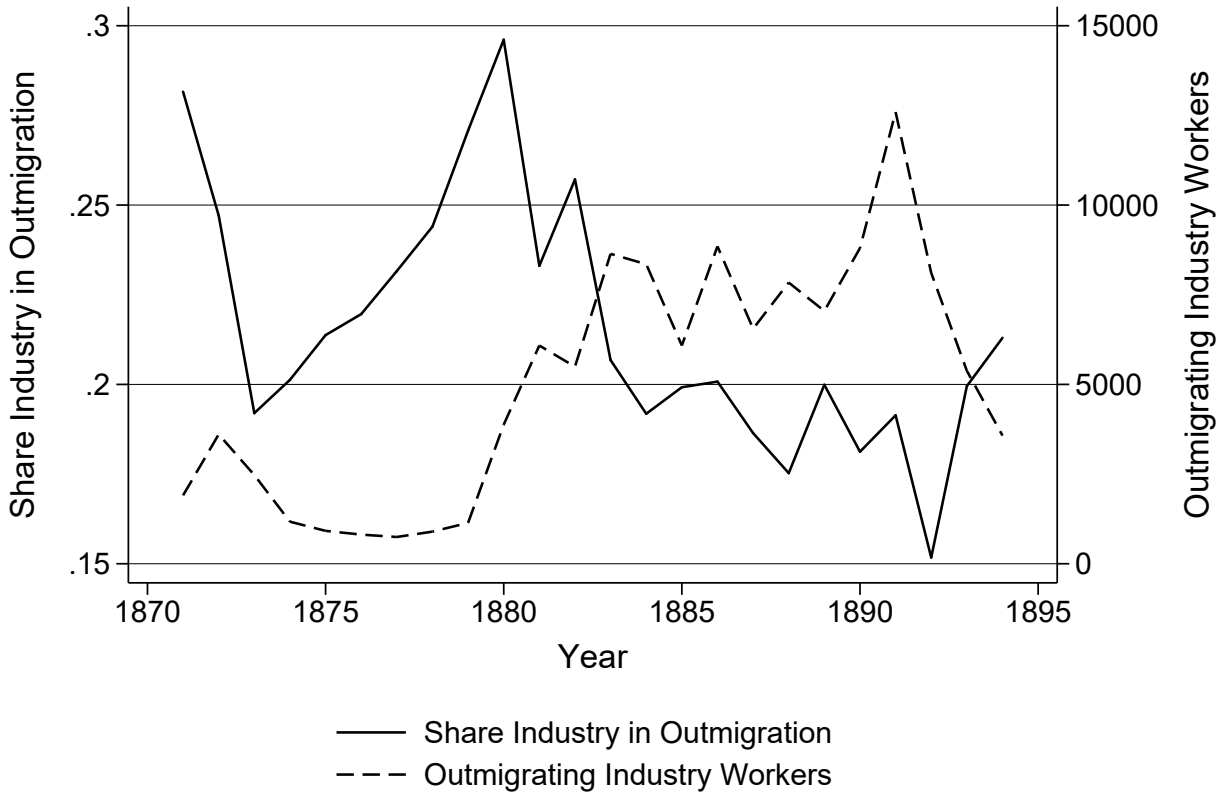
Notes: The graph shows the average vote share for the socialist party in Prussian constituencies in *Reichstag* elections between 1871 and 1890 by constituencies with above and below median share in newly insured workers.
Sources: Own calculation based on Minister für Handel, Gewerbe und öffentliche Arbeiten (1876a), Minister für Handel, Gewerbe und öffentliche Arbeiten (1876b), Galloway (2007), and Caramani (2004).

Figure B3: Distribution of the newspaper *Der Sozialdemokrat*



Notes: Map of the distribution of the illegal newspaper *Der Sozialdemokrat* between 1887 and 1890. Red constituencies experienced at higher distribution of the newspaper.
Sources: Own calculation based on Motteler (2019).

Figure B4: Industry workers and migration



Notes: The figure shows the relative and absolute number of industry workers emigrating from the harbour of Hamburg.
Sources: Own calculation based on Statistisches Bureau der Deputation für direkte Steuern (1872-1895).

Table B1: Ex-ante existing health insurance by industry

Ex-ante existing health insurance by sector	in %
Mining	100.00
Stones	24.41
Metal and machinery	53.15
Chemistry	55.40
Textiles	60.91
Paper and leather	41.35
Food	29.70
Clothes	18.54
Construction and timber	18.09
Print and art	30.06
Other	15.89

Notes: The table reports the share of ex-ante health insured workers by industry.
Sources: Own calculation based on Minister für Handel, Gewerbe und öffentliche Arbeiten (1876a), Minister für Handel, Gewerbe und öffentliche Arbeiten (1876b) and Galloway (2007).

Table B2: Types of forbidden socialist organizations

Forbidden socialist organizations by type	in %
Political	27.05
Local Support	11.48
Social clubs (e.g. singing)	33.20
Occupation (e.g. carpenter)	11.89
Education	6.97
Other	9.02

Notes: The table reports the share for different types of forbidden organizations among all forbidden socialist organizations due to the anti-socialist laws.
Sources: Own calculation based on Teich (1879).

Table B3: Descriptive statistics

	mean	sd	min	max
Votes for the socialist party in %				
Election 1871	2.55	7.31	0	47.06
Election 1874	4.64	9.94	0	58.64
Election 1877	5.54	10.30	0	51.03
Election 1878	3.42	7.77	0	46.29
Election 1881	2.71	6.81	0	39.08
Election 1884	4.71	9.69	0	51.66
Election 1887	5.64	10.11	0	53.44
Election 1890	12.23	14.58	0	66.11
Indicators for health insurance				
% Newly insured	4.97	2.15	1.30	14.59
% Newly insured instrument	4.74	2.16	1.21	11.34
% Blue collar	9.71	5.51	2.29	27.45
Indicator for anti-socialist laws				
Dummy forbidden socialist organization	0.13	0.33	0	1
Illegal activities				
Circulation of illegal newspaper *Der Sozialdemokrat*	235.46	1674.21	0	24568

Sources: Appendix Section A.

Table B4: Newly insured workers and domestic migration (1876-1883)

Dep. var.: Net-migration (in %)	(1)	(2)
% Newly insured	0.031	0.023
	(0.120)	(0.139)
% Blue collar	0.349***	0.362***
	(0.041)	(0.065)
Mean dep. var.	-1.91	-1.91
Further control		✓
Observations	228	228
R-squared	0.18	0.18

Notes: Unit of analysis: Constituency. The dependent variable measures net-migration in %.Further control include: population (in log). Standard errors, clustered at the district level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Sources: Appendix Section A.

Table B5: Effect of social insurance

Dep. var.: Votes SAP (in %)	(1)	(2)	(3)
% Newly insured × 1871	-0.345	-0.552*	-0.549**
	(0.323)	(0.306)	(0.244)
% Newly insured × 1874	0.129	0.031	-0.028
	(0.256)	(0.313)	(0.265)
% Newly insured × 1877	0.602**	0.098	0.048
	(0.275)	(0.360)	(0.310)
% Newly insured × 1878	0.144	-0.126	-0.152
	(0.099)	(0.157)	(0.144)
% Newly insured × 1884	0.978***	0.800***	0.778***
	(0.170)	(0.191)	(0.180)
% Newly insured × 1887	1.171***	0.866***	0.863***
	(0.230)	(0.265)	(0.255)
% Newly insured × 1890	2.631***	1.612***	1.574***
	(0.366)	(0.505)	(0.427)
% Blue collar × 1871		0.108	0.318*
		(0.145)	(0.164)
% Blue collar × 1874		0.051	0.135
		(0.109)	(0.119)
% Blue collar × 1877		0.264**	0.307**
		(0.124)	(0.118)
% Blue collar × 1878		0.141*	0.173**
		(0.078)	(0.072)
% Blue collar × 1884		0.093	0.024
		(0.067)	(0.071)
% Blue collar × 1887		0.160*	0.041
		(0.090)	(0.084)
% Blue collar × 1890		0.534**	0.346*
		(0.230)	(0.186)
Mean dep. var.	5.18	5.18	5.18
Further controls			✓
Constituency FE	✓	✓	✓
Time FE	✓	✓	✓
Observations	1824	1824	1824
Constituencies	228	228	228
Elections	8	8	8
R-squared within	0.40	0.42	0.50
R-squared overall	0.26	0.27	0.40

Notes: Unit of analysis: Constituency. The omitted election is 1881. The dependent variable measures the share of votes for the social democratic party. Treatment variables: Share of newly insured workers in 1884, interacted with election dummies. Further controls include: Share Protestants × election dummies, dummy forbidden socialist organization × election dummies, and population (in log). Standard errors, clustered at the district level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Sources: Appendix Section A.

Table B6: Effect of social insurance (dummy variable)

Dep. var.: Votes SAP (in %)	Baseline (1)	Controls (2)	Blue-Collar (3)
Dummy newly insured (above median) × 1871	-0.827	-0.745*	-0.716
	(0.869)	(0.412)	(0.597)
Dummy newly insured (above median) × 1874	0.777	0.593	0.446
	(0.878)	(0.723)	(0.715)
Dummy newly insured (above median) × 1877	2.698***	1.224	1.098
	(0.833)	(0.810)	(0.743)
Dummy newly insured (above median) × 1878	0.722**	0.063	0.002
	(0.333)	(0.355)	(0.332)
Dummy newly insured (above median) × 1884	3.421***	1.997***	1.930***
	(0.576)	(0.574)	(0.551)
Dummy newly insured (above median) × 1887	4.690***	3.088***	3.054***
	(0.737)	(0.717)	(0.682)
Dummy newly insured (above median) × 1890	10.958***	6.816***	6.667***
	(1.457)	(1.798)	(1.398)
Mean dep. var.	5.18	5.18	5.18
Blue-collar control		✓	✓
Further controls			✓
Constituency FE	✓	✓	✓
Time FE	✓	✓	✓
Observations	1824	1824	1824
Constituencies	228	228	228
Elections	8.00	8.00	8.00
R-squared within	0.39	0.41	0.50
R-squared overall	0.20	0.26	0.39

Notes: Unit of analysis: Constituency. The omitted election is 1881. The dependent variable measures the share of votes for the social democratic party. Treatment variables: Dummy variable for constituencies with a share of newly insured workers in 1884 above the median, interacted with election dummies. Further controls include: Share Protestants × election dummies, dummy forbidden socialist organization × election dummies, and population (in log). Standard errors, clustered at the district level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Sources: Appendix Section A.

Table B7: Effect of the anti-socialist laws

Dep. var.: Votes SAP (in %)	Baseline (1)	Controls (2)	Blue-Collar (3)	Baseline (4)	Controls (5)	Blue-Collar (6)
Forbidden organization × 1871	-5.402**	-5.085**	-4.420*			
	(2.019)	(2.230)	(2.195)			
Forbidden organization × 1874	0.680	1.002	0.401			
	(1.121)	(1.310)	(1.303)			
Forbidden organization × 1877	2.180**	1.355	0.540			
	(0.962)	(1.050)	(1.083)			
Forbidden organization × 1881	-1.232	-0.773	-0.575			
	(0.914)	(0.806)	(0.807)			
Forbidden organization × 1884	2.859**	1.914	1.329			
	(1.228)	(1.230)	(1.075)			
Forbidden organization × 1887	3.581***	2.227*	1.067			
	(1.190)	(1.301)	(1.207)			
Forbidden organization × 1890	10.018***	6.020***	3.196*			
	(1.739)	(2.095)	(1.754)			
Party member (1875) × 1871				-3.348***	-3.085***	-2.605**
				(1.123)	(1.102)	(1.090)
Party member (1875) × 1874				3.796**	5.171**	4.553**
				(1.870)	(2.327)	(2.240)
Party member (1875) × 1877				5.688***	5.840***	5.102***
				(0.865)	(1.214)	(1.121)
Party member (1875) × 1881				-1.142	-0.670	-0.317
				(0.973)	(1.290)	(1.169)
Party member (1875) × 1884				3.830***	3.216**	2.626**
				(1.083)	(1.243)	(1.244)
Party member (1875) × 1887				4.415***	3.315***	1.925*
				(0.759)	(0.921)	(1.045)
Party member (1875) × 1890				10.808***	7.026***	3.322**
				(1.186)	(1.658)	(1.307)
Mean dep. var.	5.18	5.18	5.18	5.18	5.18	5.18
Blue-collar control		✓	✓		✓	✓
Further controls			✓			✓
Constituency FE	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓
Observations	1824	1824	1824	1824	1824	1824
Constituencies	228	228	228	228	228	228
Elections	8	8	8	8	8	8
R-squared within	0.35	0.42	0.50	0.39	0.44	0.52
R-squared overall	0.13	0.25	0.40	0.26	0.32	0.42

Notes: Unit of analysis: Constituency. The omitted election is 1877. The dependent variable measures the share of votes for the social democratic party. Treatment variables: Forbidden socialist organization in 1878 (dummy), interacted with election dummies. Further controls include: Share Protestants × election dummies, share newly insured workers × election dummies, and population (in log). Standard errors, clustered at the district level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Sources: Appendix Section A.

Table B8: Effect on other parties and turnout

	Conservatives (1)	Liberals (2)	Catholic (3)	Turnout (4)
% Newly insured × post1884	-0.733	0.074	-0.622**	0.239
	(0.483)	(0.552)	(0.316)	(0.267)
Forbidden organization × post1878	1.068	1.137	-5.872***	-1.231
	(2.091)	(2.389)	(1.369)	(1.156)
Mean dep. var.	19.60	42.76	22.44	62.18
Controls	✓	✓	✓	✓
Constituency FE	✓	✓	✓	✓
Time FE	✓	✓	✓	✓
Observations	1824	1824	1824	1824
Constituencies	228	228	228	228
Elections	8	8	8	8
R-squared within	0.07	0.07	0.11	0.57
R-squared overall	0.06	0.01	0.12	0.25

Notes: The dependent variable measures the share of votes for the conservative party (column 1), liberal parties (column 2), the catholic party (column 3), and turnout (column 4). Treatment variables: share of newly insured population in 1884; dummy variable for at least one forbidden organization in the wake of the anti-socialist law. Controls: Share protestants × post1884, share blue collar workers × post1884, and population (log). Standard errors, clustered at the district level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Sources: Appendix Section A.

Table B9: Comparison pre-and postperiod

Dep. var.: Votes SAP (in %)	Carrot (1)	Stick (2)	Interaction (3)
% Newly Insured × Post1884	1.275***		1.120***
	(0.227)		(0.208)
Post1883	-3.247***		-2.659***
	(0.722)		(0.653)
Forbidden Organization × Post1878		2.816**	
		(1.318)	
Post1878		-0.508	
		(0.787)	
% Newly Insured × Post1884 × Forbidden Organization			0.460**
			(0.189)
Mean Dep. Var.	5.65	5.18	5.65
Further Controls	✓	✓	✓
Constituency FE	✓	✓	✓
Time FE	✓	✓	✓
Observations	456	456	456
Constituencies	228	228	228
Periods	2	2	2
R-squared within	0.60	0.38	0.62
R-squared overall	0.35	0.26	0.37

Notes: The dependent variable measures the share of votes for the social democratic party. Treatment variables: share of newly insured population in 1884; dummy variable for at least one forbidden organization in the wake of the anti-socialist law. Controls: Share protestants × post1884, share blue collar workers × post1884, and population (log). Standard errors, clustered at the district level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Sources: Appendix Section A.

Table B10: Sample restrictions

Dep. var.: Votes SAP	Baseline (1)	w/o Silesia (2)	w/o Rhine Province (3)	w/o Westfalia (4)	w/o Brandenburg (5)	bottom 75% (6)	top 75% (7)
% Newly insured × post1884	1.261***	1.156***	1.407***	1.272***	1.192***	1.061***	1.398***
	(0.153)	(0.177)	(0.186)	(0.171)	(0.154)	(0.226)	(0.186)
Mean dep. var.	5.18	5.45	5.16	5.34	4.87	2.55	6.67
Controls	✓	✓	✓	✓	✓	✓	✓
Constituency FE	✓	✓	✓	✓	✓	✓	✓
Time FE	✓	✓	✓	✓	✓	✓	✓
Observations	1824	1552	1536	1688	1656	1368	1368
Constituencies	228	194	192	211	207	171	171
Elections	8	8	8	8	8	8	8
R-squared within	0.41	0.43	0.42	0.41	0.38	0.30	0.45
R-squared overall	0.31	0.32	0.31	0.33	0.30	0.14	0.34

Notes: The dependent variable measures the share of votes for the social democratic party. Treatment variables: share of newly insured population in 1884. Controls: Population (log) and share blue collar workers × Post1884. Standard errors, clustered at the district level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Sources: Appendix Section A.

Table B11: Province×Year FE and other social conflicts

Dep. var.: Votes SAP (in %)	(1)	(2)	(3)	(4)
% Newly insured × 1871	-0.630**	-0.568*	-0.334	-0.215
	(0.283)	(0.294)	(0.367)	(0.429)
% Newly insured × 1874	0.008	-0.011	-0.050	-0.069
	(0.303)	(0.280)	(0.308)	(0.382)
% Newly insured × 1877	0.089	0.081	0.104	0.044
	(0.356)	(0.339)	(0.349)	(0.365)
% Newly insured × 1878	-0.136	-0.127	-0.112	-0.084
	(0.155)	(0.135)	(0.168)	(0.189)
% Newly insured × 1884	0.827***	0.844***	0.595**	0.528*
	(0.193)	(0.216)	(0.242)	(0.271)
% Newly insured × 1887	0.916***	1.011***	0.616*	0.636*
	(0.265)	(0.315)	(0.311)	(0.370)
% Newly insured × 1890	1.694***	1.847***	1.542***	1.762***
	(0.500)	(0.594)	(0.528)	(0.608)
Mean dep. var.	5.18	5.18	5.18	5.18
Controls	✓	✓	✓	✓
Urban/rural cleavage			✓	✓
Ethnic cleavage			✓	✓
Time FE	✓		✓	
Province × YearFE		✓		✓
Constituency FE	✓	✓	✓	✓
Observations	1824	1824	1824	1824
Constituencies	228	228	228	228
Elections	8	8	8	8
R-squared within	0.43	0.55	0.50	0.57
R-squared overall	0.33	0.44	0.18	0.39

Notes: The omitted election is 1881. The dependent variable measures the share of votes for the social democratic party. Treatment variables: share of newly insured population in 1884, interacted with election dummies. Column (1): result from Figure 3 (included for comparison). Column (2): allows for flexible time trends for each province. Column (3): includes flexible effects for Protestantism (in %) and German speakers (in %) and urban share (in %). Column (4): includes flexible time trends and controls for social conflicst. Further controls: share of blue-collar workers interacted with time dummies, population (log). Standard errors, clustered at the district level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Sources: Appendix Section A.

Table B12: Persistence of protest by sector: Newspapers 1877 and health insurance 1885

Sector	Ex-ante insured	Blue-collar workers, 1882	Newspaper circulation, 1877	Voluntary health fund, 1885
Mining	100%	364743	800	0
Stones	24%	161762	0	2353
Metal and machinery	53%	329886	5620	46773
Chemistry	55%	38096	0	0
Textiles	61%	229532	0	2219
Paper and leather	41%	103790	850	12422
Food	30%	241413	7100	28239
Clothes	19%	275841	5000	32445
Construction and timber	18%	594297	11750	99770
Print and Art	30%	38204	4150	19714
Other	16%	88986	0	0

Notes: The table reports different indicators by sector.
Sources: Column 2: own calculation based on Minister für Handel, Gewerbe und öffentliche Arbeiten (1876a), Minister für Handel, Gewerbe und öffentliche Arbeiten (1876b) and Galloway (2007). Column 3: Galloway (2007), Column 4 and 5: Knaack and Schröder (1981).

European Historical Economics Society

EHES Working Paper Series

Recent EHES Working Papers

2022

EHES 226 Harmonious Relations: Quality transmission among composers in the very long run
Karol Jan Borowiecki, Nicholas Ford, Maria Marchenko

EHES 225 Urban Political Structure and Inequality: Political Economy Lessons from Early Modern German Cities
Felix Schaff

EHES 224 Health, Income, and the Preston Curve: A Long View
Leandro Prados de la Escosura

EHES 223 Boomtowns: Local Shocks and Inequality in 1920s California
Sarah Quincy, Rowena Gray

EHES 222 Poverty in early modern Europe: New approaches to old problems
Guido Alfani, Francesco Ammannati, Wouter Ryckbosch

2021

EHES 221 Human Capital and Industrialization: German Settlers in Late Imperial Russia
Viktor Malein

EHES 220 Resilience, Adaptability and Transformability: Danish Butter Factories in the Face of Coal Shortages
Sofia Teives Henriques, Paul Sharp, Xanthi Tsoukli, Christian Vedel

EHES 219 Ireland in a Danish mirror: A microlevel comparison of the productivity of Danish and Irish creameries before the First World War
Eoin McLaughlin, Paul Sharp, Xanthi Tsoukli, Christian Vedel

EHES 218 Interest Rates, Sanitation Infrastructure, and Mortality Decline in Nineteenth-Century England and Wales
Jonathan Chapman

All papers may be downloaded free of charge from: http://www.ehes.org/

The European Historical Economics Society is concerned with advancing education in European economic history through study of European economies and economic history. The society is registered with the Charity Commissioners of England and Wales number: 1052680