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# Coal and Blood: Industrialization and the Rise of Nationalism in Prussia before 1914

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## Abstract

Industrialization and the rise of nationalism were the two major developments in Germany before the World War I. A novel county-level dataset reveals that industrialization and nationalism measured by membership in the “Kriegervereine”, the biggest civil organization at the time, were negatively correlated. Using coal potential as an IV for identification, I find strong evidence for a causal impact of industrialization on nationalism. In order to detect possible mechanisms, a three stage IV regression model produces strong support that migration and trade union membership were crucial factors that linked industrialization and nationalism.

**JEL classification:** F6, N13, N33

**Keywords:** Nationalism, Industrialization, Prussia

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# 1 Introduction

In the decades before World War I, industrialization and nationalism were two of the most apparent developments in Germany. Nationalism became more and more popular and radical, while at the same time Germany experienced its late and rapid industrialization. This decade was one of the most dynamic phases for the German economy, which abruptly ended with World War I. For these reasons, this historical period is an important and interesting setting to research the sources of radicalization in a society. With a detailed examination of Prussia before World War I, I am able to examine the role of industrialization for the mass radicalization and militarization. Thereby, I can provide further understanding how the economic developments in the beginning of the 20<sup>th</sup> can be linked to the mass militarization and nationalism that ultimately led to World War I. Doing so, I can take up the conclusion on the first globalization from O'Rourke & Williamson (1999, p. 287) who state that "far from being destroyed by unforeseen and exogenous political events, globalization, at least in part, destroyed itself". In their analysis, O'Rourke & Williamson (1999) highlight the protectionist policies as a reaction of those who lost due to increasing international trade, as also highlighted by Lehmann (2010), and restrictions for migration. Similarly, I expect that regions that fall behind during the industrialization tend to become more nationalistic. This paper aims to analyze drivers of further nationalist elements besides trade and migration policies. I focus on nationalism and industrialization in the everyday life in Germany by asking the following question: To what extent was the rise in nationalism a response to industrialization within Prussia? For answering this question, I rely on data on the "Kriegervereine", the biggest civil organization which comprised more than three million members in Imperial Germany in 1913, as a proxy for nationalism. In comparison, all trade unions combined had 2.6 million members before WWI (Schneider 1989). After WWI, the "Kriegervereine" remained influential and, among other organizations, became a good predictor for membership in the NSDAP (Satyanath et al. 2017).

My dataset is based on the reports published by the "Kriegervereine". It includes the number of members at district level between 1903 and 1913. In this period, the growth rate of the organization was 40 % and led to 500.000 new members in Prussia. Thus, nationalism became more and more a mass phenomenon during the decade before World War I. To pinpoint the influence of industrialization, I use data on employment in industry sectors for every district. There might be, however, issues of omitted variables and reverse causation or both. To address these concerns, I calculate coal potential as an instrumental variable for every district. This instrumental variable is based on information on the area from the late carboniferous age and contemporary knowledge on the availability of coal resources from 1913 following Fernihough & O'Rourke (2014).

My results show strong evidence for a causal relationship between industrialization and the spread of nationalism in the beginning of the 20<sup>th</sup> century. An increase in industry employment by one standard deviation corresponds to decrease in the share of membership in the "Kriegervereine" by 0.5 standard deviation. Concerning mechanisms for this effect, the results show mixed evidence

for a Heckscher-Ohlin based explanation as highlighted by Lehmann (2010). Instead, using a three stage IV framework, I find evidence that the results are driven by migration patterns within Germany. Regions with a substantial out-migration driven by the industrialization process tend to become more nationalist. This is in line with contemporary thinking, e.g. Max Weber called for a nationalist reaction due to these migration patterns. Moreover, building on a theoretical paper from Shayo (2009) on the formation of social identities, I can show that membership in trade unions has a strong negative effect on membership in the “Kriegervereine”.

With this paper, I can contribute to four strands of literature. One branch studies different determinants of political extremism, e.g. import competition (Autor et al. 2016, Colantone & Stanig 2017, Dippel et al. 2017), economic crises (de Bromhead et al. 2013, Funke et al. 2016), and migration (Becker & Fetzer 2016). With this analysis, I am able to add structural change linked to industrialization as an important determinant that has been largely neglected in the literature. Second, I am able to add another indicator for nationalism. Instead of relying on voting patterns as done in many studies, e.g. Autor et al. (2016), Becker & Fetzer (2016), Funke et al. (2016), I use the “Kriegervereine” as an indicator for nationalism and political extremism grounded in everyday life. This gives a more solid indicator for a nationalist orientation than voting behaviors that might be driven by protest voting. In addition, in the field of economic history the most common indicator for nationalism is protectionism (Lehmann 2010). However, nationalism also implies militaristic and discriminatory behavior beyond trade. These elements are captured by analyzing the “Kriegervereine”. Third, I am able to contribute to economic studies on nationalism, e.g. the theoretical paper by Alesina & Reich (2015) on nation building and the empirical analysis by Cinnirella & Schueler (2017) on the role of spending in education on the spread of nationalism. In contrast to these studies that understand nationalism as a top-down process with the implicit assumption of manipulation, I take a bottom-up perspective and, thereby, follow the work from historians (Eley 1991, Vogel 1997) and a recent study in economics by Suesse & Wolf (2017). Fourth, I can contribute to the new literature on the dark side of social capital (Koenig 2015, Satyanath et al. 2017). So far, these studies showed the effects of the dark side of social capital on the rise of right wing parties. Instead, I will ask for the economic reasons why the dark side of social capital becomes more attractive.

The remainder of this study is structured as follows: In the next section, I will describe the historical background of the “Kriegervereine”. In section III, I will describe the dataset. Section IV provides the OLS and IV results. Section V discusses potential explanations. Chapter VI concludes.

## 2 The “Kriegervereine”

Nationalism in Imperial Germany became increasingly popular and radical after 1890 (Conrad 2010). Civil organizations were the most important medium for this spread of nationalism (Walkenhorst 2007, p.14). The prominent ones were the “Alldeutscher Verband” (Pan-German League), the “Ostmarkenverein” (German Eastern Marches Society), the “Flottenverein” (Navy League), the “Wehrverein” (Army League) and the “Kriegervereine” (Veterans Organizations). Except for the latter, these organizations were mainly based on nationalism from above. The underlying assumption for this kind of nationalism is that broad masses can be manipulated. In this way the elites aimed to divert attention from internal political tensions, e.g. the classic interpretation of the historians Kehr (1930) and Wehler (2006).<sup>1</sup> Unlike the “Alldeutscher Verband” and similar organizations and in spite of their enormous size, the “Kriegervereine” were often forgotten in the historical literature.<sup>2</sup>

The “Kriegervereine” are a striking example for nationalism from below, as their foundations are rooted in the everyday life of the German population. Their members were men who chose to join the “Kriegervereine” after their compulsory military service.<sup>3</sup> The first “Kriegervereine” were founded in 1786 after Frederick the Great died (Elliot 1975), but they started to become popular just after the German unification in 1871 (Rohkrämer 1990) and became important multipliers of nationalism (Walkenhorst 2007, p.44). Most members belonged to the lower middle classes, while the upper middle classes mainly filled the leading positions (Rohkrämer 1990). More precisely, peasants, commercial workers, and artisans represented each roughly 25%, whereas civil servants and clerks made up a total of almost 20%. Overall the upper classes were underrepresented (Rohkrämer 1990). In 1899, the umbrella organization “Kyffhäuser Bund” was founded with official support of the monarch.<sup>4</sup> They became the biggest organization in Imperial Germany with almost three million members in 1913. Thereby, the “Kriegervereine” surpassed even the size of the trade unions.

Following the concept of social capital by Bourdieu (2011) and the empirical analysis by Satyanath et al. (2017) who use networks of associations as indicator for social capital, membership in the “Kriegervereine” could be seen as “dark side” of social capital. In every administrative

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<sup>1</sup>This interpretation is part of the debate in historiography on the German *Sonderweg* according to which the old agrarian elites were not willing to modernize. These old feudal elements as manifestation of the irregular modernization in the German society are - according to Wehler and others - the breeding ground for the Nazis.

<sup>2</sup>Exceptions are the dissertation by Rohkrämer (1990) and some articles (Düding 1986, Elliot 1975, Saul 1969).

<sup>3</sup>Only men were members. This is typical for the traditional gender roles that went hand in hand with nationalism in the 19<sup>th</sup> century (Frevert 1996).

<sup>4</sup>Initial reason for the umbrella organization “Kyffhäuser Bund” was to build a monument for Emperor Wilhelm I in the Kyffhäuser Mountains (Düding 1986) based on an old myth according to which emperor Barbarossa and his followers would sleep and would awake at some time to build a new empire. This myth was often linked to the German unification of 1871. Thus, the name of the umbrella organization might be termed as an “invented tradition” (Hobsbawm 1993).

district, several local groups were active and played an active and important role in daily life by participating in parades. Hence, good relations to the “Kriegervereine” and especially the membership in them were social capital on a local level legitimized by the official support of the monarch. Rohkrämer (1990, p.77) highlights that members in the “Kriegervereine” had advantages in the search for employment and flats. An illustrative example for the political profits of social capital is the protagonist Diederich Heßling in the novel “Der Untertan” (Man of Straw) by Heinrich Mann from 1918, who tries to get more votes for the nationalistic candidate in the election with the help of the “Kriegervereine” (Mann 1969, p.118).

In the Weimar republic, the “Kriegervereine” remained influential and were in favor of a “War of Rectification” (Elliot 1975).<sup>5</sup> Satyanath et al. (2017) show that in cities with more people engaged in civil organizations including the “Kriegervereine” people over-proportionally joined the NSDAP. In addition, there were more votes for right wing parties in those regions with more war veterans from WWI (Koenig 2015). Both studies show the political effects of the “Kriegervereine” in the Weimar republic. However, little is known about the reasons why the “Kriegervereine” became popular. Before analyzing the reasons, let me present three main reasons whereupon the “Kriegervereine” were instrumental for the spread of everyday nationalism.

First, they strongly supported the military and its immense importance in line with wide spread political claims of that time. In their beliefs, war was deemed natural and the military operated as the “school of the nation” (Düding 1986). Therefore, the local “Kriegervereine” regularly met for shooting exercises on Sundays to strengthen their militaristic expertise. In addition, a younger generation wanted to step out of the shadows of the veterans (Rohkrämer 1990). Thus, this generation conflict further increased the militaristic orientation.

Second, the “Kriegervereine” had a strong link to the nation state manifesting itself in an oath on the emperor they had to give during their military service which applied for the rest of their life (Düding 1986). Furthermore, the “Kriegervereine” got the privilege to participate in the front rows of public events (Vogel 2000), e.g. to celebrate the German unification from 1871 on January 18 each year. Throughout the time between 1871 and 1914 they ensured that the unification of 1871 was of tremendous importance to the German population (Kocka 2001, p.81) and thereby supported the spread and salience of nationalism in Germany. This support for the nation is one reason why Emperor Wilhelm I called them “die zweite Armee im Bürgerrock” (second army in middle class clothes) (Kyffhäuser-Bund der Deutschen Landes-Kriegerverbände 1907, p.67). Despite this strong link to the nation state, the politicization, e.g. concerning the politics on a national level in form of opposition against the social democrats, was less successful than expected and intended (Saul 1969). On the contrary, the nationalist support of the nation on a local level seemed to be of major importance. Vogel describes this as a folkloristic militarism with a “chiefly apolitical popular enthusiasm for the military” (Vogel 2000, p.488). Nevertheless,

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<sup>5</sup>Their position towards the Nazis was at least ambivalent, see for further details Elliot (1975).

the “Kriegervereine” supported the nationalistic candidates during election campaigns (Düding 1986).

Third, the “Kriegervereine” made use of the typical nationalist elements to foster their everyday popularity. They organized many parades, were obsessed with flags and building monuments, e.g. the famous Kyffhäuser monument. Parades and monuments are part of what Hobsbawm (1993) describes as “invented traditions”. Furthermore, the “Kriegervereine” provided support for the funerals of their members. In addition, they used mass media effectively on a local level that fits to the nationalism in that time (Anderson 1991, p.161). For instance, the “Kyffhäuser-Korrespondenz”, which provided articles printed in small local newspapers, were read by millions of people (Saul 1969).

Therefore, it clearly appears that the “Kriegervereine” are a good indicator for a form of nationalism that is rooted in the everyday life of millions of people in the decade before WWI in Germany

### 3 Data

In the following, I will describe the different data sources used as well as the steps that were necessary to compile the dataset. An overview of variables and sources is given in the Appendix in Table 6 and the summary statistics are presented in the Appendix in Table 8. My dataset is restricted to Prussian counties. This sample offers three main advantages: First, it picks up large variation in terms of economic development between the counties. Whereas especially the eastern parts were mainly dominated by agriculture, some areas such as Silesia and the Ruhr area established themselves as new industrial centers. Second, the data availability is better in comparison to Imperial Germany. Third, the focus on Prussia limits the effect of institutional variation as a confounding factor, as the institutional framework across all regions was nearly identical.

#### The “Kriegervereine”

The annual reports of the “Kyffhäuser-Bund” were the main source of regional data on the “Kriegervereine”.<sup>6</sup> These reports are available for all years between 1900 and 1916. In comparison to other indicators for nationalism, like voting results, information on membership numbers of the “Kriegervereine” is a stronger indicator of actual behavior and commitment to nationalist

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<sup>6</sup>The “Kyffhäuser-Bund” published a chronicle for the years between 1871 and 1905 (Kyffhäuser-Bund der Deutschen Landes-Kriegerverbände 1908). However, this chronicle only includes regional data and does not include disaggregated data at county level. The overall growth between 1871 and 1913 was immense. In 1875, the “Kriegervereine” had around 100.000 members. 40 years later, it were 3 million members. However, due to the high aggregation level especially for Prussia and many missing data points, I do not go into a further analysis of this data.

views. For the analysis, I use the data for 1903 and 1913 because this allows me in combination with the control variables to build a data set covering the growth of the “Kriegervereine” in the decade before WWI.<sup>7</sup> The census data is only available for 1900 and 1910. For a detailed analysis, it is necessary to match data on the “Kriegervereine” with official statistics. The data in the reports from the “Kyffhäuser-Bund” is mainly at the level of official administrative districts. Nevertheless, in some cases it is necessary to combine two or more districts, as the reports from the “Kyffhäuser-Bund” gave information only for two or more districts together. This is the reason why every district separated into one rural and one urban district is combined. A detailed list for each governmental district is provided in the Appendix in Table 7. The analysis at this level is possible for 429 regional units. This number is comparable with other studies of this time (Lehmann-Hasemeyer & Streb 2016, Cinnirella & Schueler 2017).

In order to give descriptive evidence on the location of the “Kriegervereine”, Map 1 shows the share of membership relative to the male population older than 18 years in 1903. Overall, there seems to be a higher density of the “Kriegervereine” in the central part of Prussia. Map 2 illustrates membership shares for 1913, we see higher membership shares for most regions. Map 3 shows the resulting development of the share of members in the “Kriegervereine” for the decade before WWI. Especially, some regions in the East reveal a high increase in membership in the “Kriegervereine” by more than 10 percentage points.

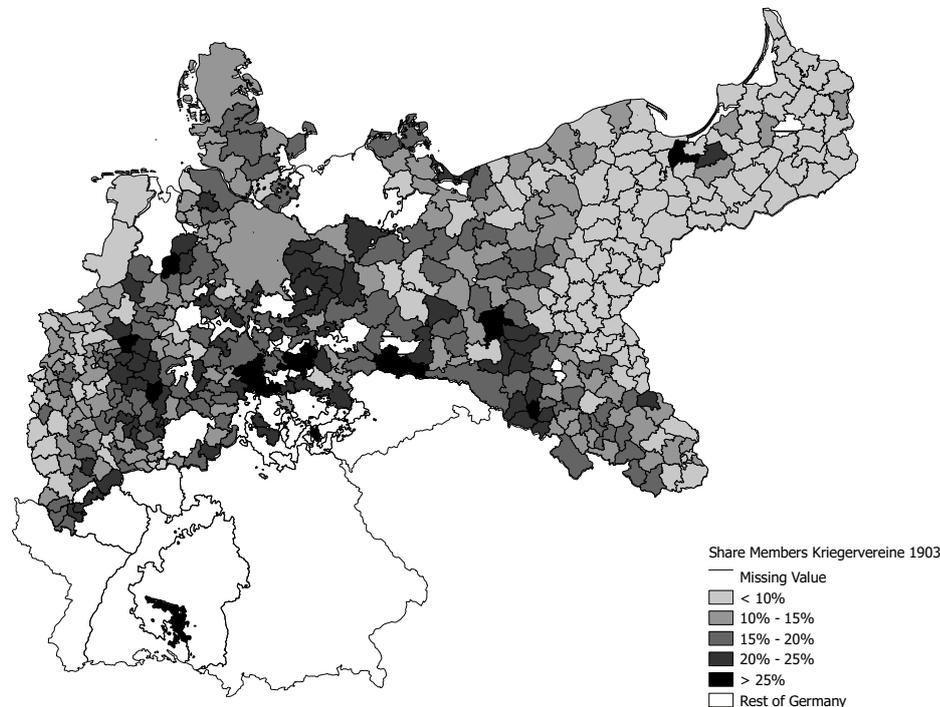


Figure 1: Share of members in the Kriegervereine, 1903

<sup>7</sup>I do not use the data for 1901 because it covers the regions in the East only at an aggregated level. Thereby, I would lose many observations.

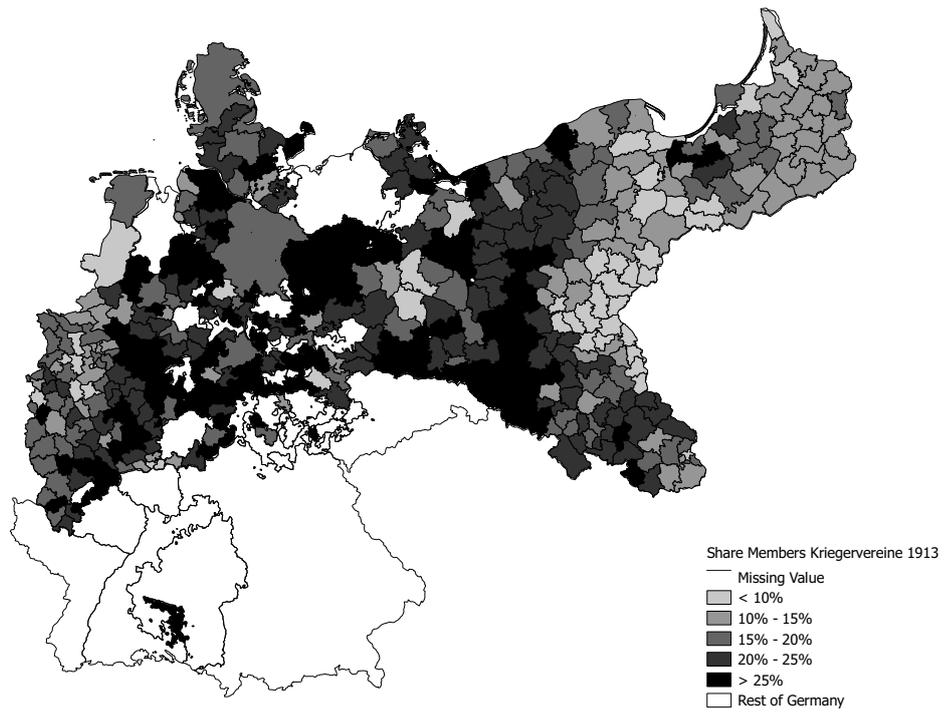


Figure 2: Share of members in the Kriegervereine, 1913

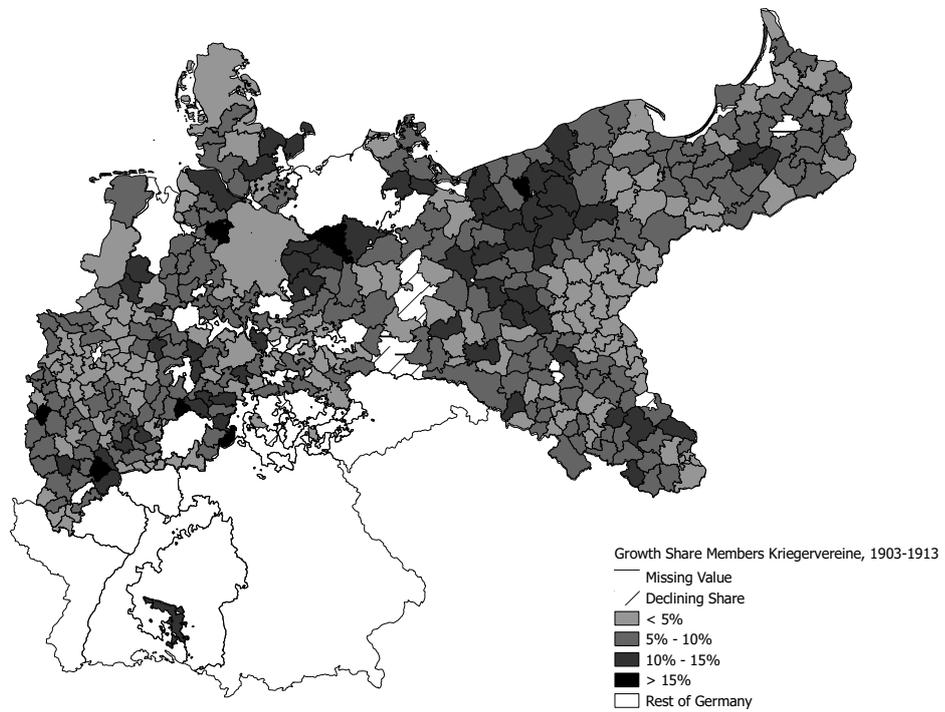


Figure 3: Growth of share of members in the Kriegervereine, 1903-1913

## Industry Employment

Concerning employment in industry, I rely on the employment census from Kaiserliches Statistisches Amt (1897). This census includes a detailed information for different sectors. For the purpose of this article, I summarize all industrial sectors, e.g. chemistry and mining, and divide by total employment in the district. Thereby, I have a measurement for industrialization. Map 4 shows the industrial center in the Ruhr area, Silesia and Saxony. Especially the eastern part, many districts have only a small share in industry employment.

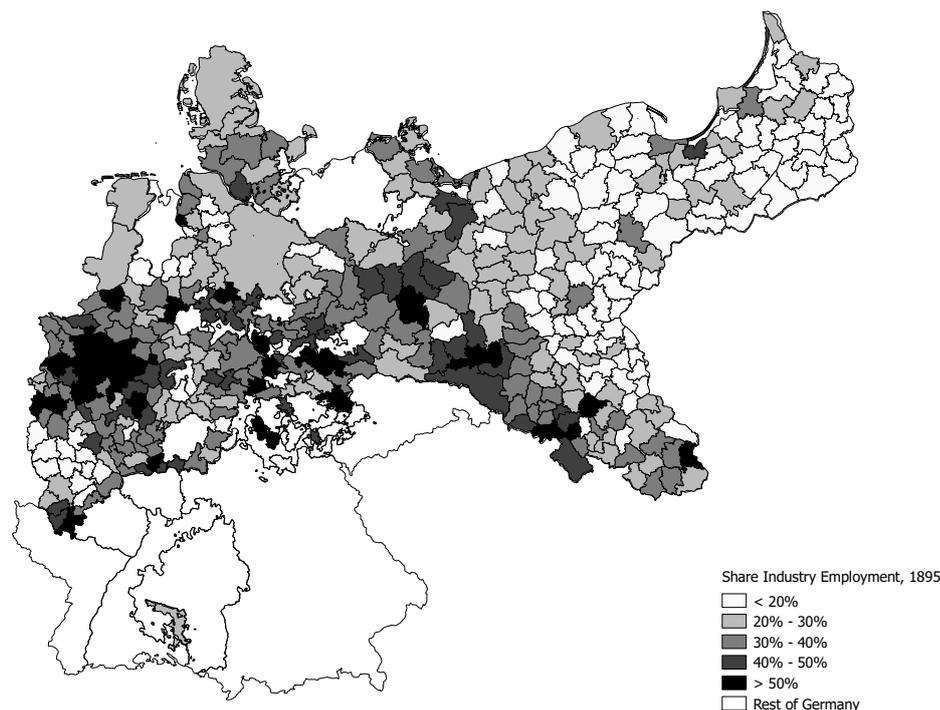


Figure 4: Industry employment, 1895

## 4 Empirical analysis

### OLS setting

As a first step of my analysis I aim to explain the difference in the share of membership in the “Kriegervereine”, relative to the male population above 18 years, in the decade before World War I. This variable captures the development of nationalism in Prussian districts.<sup>8</sup> In order to investigate drivers of the spread of nationalism, I use the following specification.

$$\Delta KV_{i,1913-1903} = \alpha + \beta Ind_i + \gamma X_i + \theta_{AD} + \epsilon_i \quad (1)$$

<sup>8</sup>In comparison to growth rates, this calculation is the conservative one, because it does not lead to potentially high growth rates in regions with a lower initial level.

The independent variable is employment industry 1895 relative to total employment in 1895,  $Ind_i$ . In addition, I include several controls,  $X_i$ , explained in Table 6, to control for population, religion, language, military sites, and distance to border. Thereby, I can control for differences between rural and urban areas and the ongoing social conflicts concerning minorities and religion as well as for potential border effects. Moreover, I use fixed effects on the level of the “Regierungsbezirke”,  $\theta_{AD}$ . For all following OLS and IV specifications, I use cluster robust standard errors at the level of administrative districts (AD, in German “Regierungsbezirke”).

To facilitate the interpretation of the results, all variables are standardized. The results in Table 1 reveal support for a correlation between industry employment and the growth of the “Kriegervereine”. Column 1 shows that an increase of industry employment by one standard deviation corresponds to a 0.5 standard deviation slower change of the “Kriegervereine”. Including several control variables in column 2 lead to slightly smaller coefficient for industry employment. In addition, in regions with a higher population, lower share of German speaking people and higher distance to the next border, there tend to be a smaller share of people engaged in the “Kriegervereine”. Interestingly, the share of active military persons is negatively correlated with membership in the “Kriegervereine”.

Table 1: Membership “Kriegervereine”, OLS

	(1)	(2)
	$\Delta$ Membership KV, 1903-1913	
Industry Employment	-0.537*** (0.078)	-0.446*** (0.089)
Population		-0.236** (0.090)
Mother Tongue German		0.369*** (0.135)
Protestants		0.022 (0.079)
Active Military Persons		-0.120*** (0.038)
Distance to border		0.371** (0.146)
Administrative Region FE	✓	✓
R <sup>2</sup>	0.3161	0.4175
n	429	429

*Notes*

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Cluster robust standard errors on the level of “Regierungsbezirke”

All variables are standardized.

## IV setting

However, industry employment might be endogenous. There might be issues of omitted variables, reverse causation or both. For instance, there might be less industry employment due to strong nationalist activities. To rule out these possibilities, I use coal potential as an instrumental variable for industrial employment similar to the approach by Fernihough & O'Rourke (2014) who use distance to the next carbon area as an instrumental variable for industrialization in Europe. Coal is often found in strata from the late carboniferous age. Thus, coal potential is understood as an exogenous indicator for coal availability.<sup>9</sup> Therefore, it seems plausible to use this information as an instrumental variable for industrialization. In difference to Fernihough & O'Rourke (2014), coal potential captures the amount of carbon area. Similar to the concept of market potential (Redding & Venables 2004, Kopsidis & Wolf 2012), I construct coal potential based on distance and geological data alone. To measure the coal potential of a district, I calculate for every unit of observation the area linked to the late carboniferous geological strata based on the 1:5 Million International Geological Map of Europe and Adjacent Areas (IGME 5000) (Asch 2005). For my calculation, I include the carboniferous strata in all parts at county level of Imperial Germany. These considerations result in the following calculation:

$$CP_i = carbonarea_i + \sum_{j=1}^n \frac{carbonarea_j}{distance_{ij}} \quad (2)$$

Where  $i$  is the district of interest and  $j$  all districts,  $j = 1, \dots, n$  including  $i$ . Map 5 shows a high coal potential for the regions around Breslau and the Ruhr area. The coal potential is lowest in the northeastern parts of Prussia. A visual comparison with Figure 4 on industry employment confirms the expected positive correlation between coal potential and industry employment. However, the regions around Berlin, Kiel and other urban regions without access to coal also show high industry employment and, therefore, might limit the power of the instrument.

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<sup>9</sup>A close examination of the IGME 5000 map and a contemporary geological map from 1870 (von Dechen 1869) shows many similarities. However, the contemporary map does not allow to compute the areas attached to different geological strata, but only to construct a dummy variable for each district. Nevertheless, the map by von Dechen (1869) map shows that the knowledge about coal based on geological information was spread in the late 19<sup>th</sup> century.

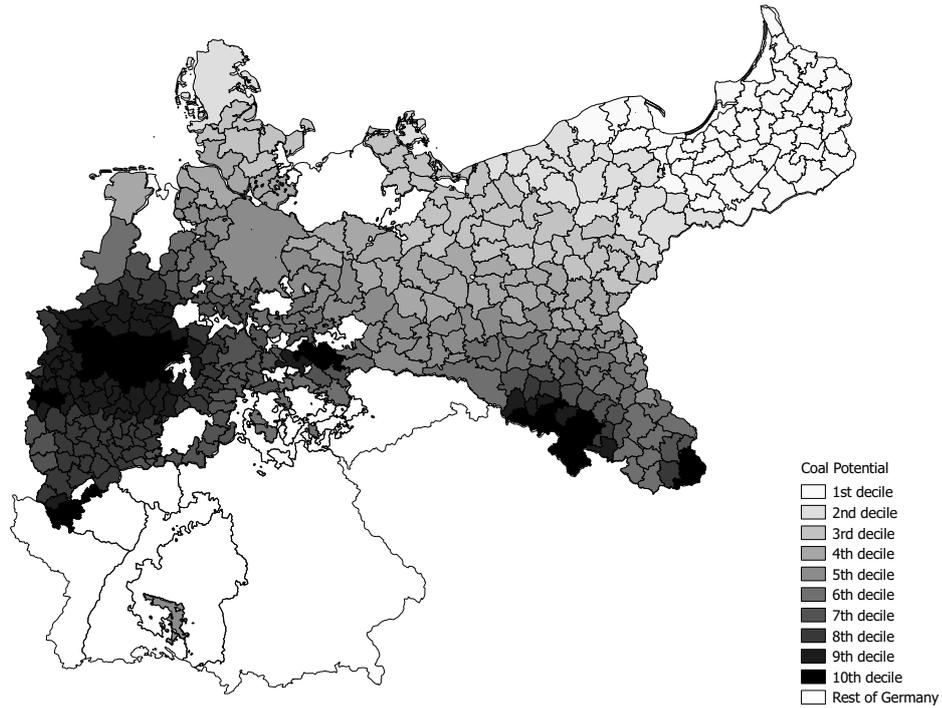


Figure 5: Coal Potential

For my empirical analysis, I use coal potential as instrumental variable in the following two-stage estimation which aims to explain the effect of industry employment on the growth of the “Kriegervereine” between 1903 and 1913.

$$\begin{aligned}
 Ind_i &= \alpha + \beta CP_i + \gamma X_i + \theta_{AD} + \epsilon_i \\
 \Delta KV_{i,1913-1903} &= \alpha + \beta \hat{Ind}_i + \gamma X_i + \theta_{AD} + \epsilon_i
 \end{aligned}
 \tag{3}$$

The results are shown in Table 2. In the first stage, we find a positive and statistically significant effect of coal potential on industry employment. The second stage gives evidence for a causal relationship between net migration and the growth of the “Kriegervereine”. The coefficient is similar to the one in the OLS specification. An increase in industry employment by one standard deviation corresponds to a decline in the share of membership in the “Kriegervereine” by 0.5 standard deviation.

Table 2: Membership “Kriegervereine”, IV

	(1)	(2)	(3)	(4)
	1 <sup>st</sup> stage	2 <sup>nd</sup> stage	reduced form	OLS
	Industry Employment	$\Delta$ Membership KV, 1903-1913		
Coal Potential	0.213*** (0.077)		-0.107** (0.043)	
Industry Employment		-0.500*** (0.092)		-0.446*** (0.089)
Population	0.833*** (0.102)	-0.188* (0.108)	-0.604*** (0.080)	-0.236** (0.090)
Mother Tongue German	0.110 (0.097)	0.375*** (0.127)	0.320*** (0.107)	0.369*** (0.135)
Protestants	0.190*** (0.067)	0.031 (0.071)	-0.064 (0.081)	0.022 (0.079)
Active Military Persons	-0.017 (0.031)	-0.122*** (0.036)	-0.114*** (0.037)	-0.120*** (0.038)
Distance to border	-0.120 (0.150)	0.364*** (0.136)	0.424** (0.170)	0.371** (0.146)
Administrative Region FE	✓	✓	✓	✓
R <sup>2</sup>	0.6500		0.3493	0.4175
n	429	429	429	429
F-Statistic of weak instruments	27.257			

*Notes*\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

Cluster robust standard errors on the level of “Regierungsbezirke”

All variables are standardized.

As robustness check for the instrumental variable estimation, I weight the carbon area by contemporary knowledge on the availability of coal deposits. The main reason for this is that the information on the carbon area from the IGME 5000 does not reveal any information on the quality of the coal. Therefore, I weight the carbon area with the estimates from Bärtling (1926). These estimates on the coal deposits cover more than 90% of the carbon area from Asch (2005).<sup>10</sup> The results are shown in the Appendix in Table 9. This specification also supports my argument. More precisely, the coefficient for the instrumented industry employment gets smaller, but stays statistically significant. As a further robustness check, I control for the initial level of membership in the “Kriegervereine” in 1903. This does not change the results as shown in the Appendix in Table 10. In a third robustness check, I control whether the effects are driven by changes in the denominator, male population above 18 years. To do so, I divide the members in the “Kriegervereine” for both years by the male population above 18 years in 1903. The results in the Appendix in Table ABC are similar to the standard IV specification in Table 2.

<sup>10</sup>This leads to the following calculation:

$$CPd_i = carbonarea_i \cdot coaldeposits_i + \sum_{j=1}^n \frac{carbonarea_j \cdot coaldeposit_j}{distance_{ij}}$$

Given these results, it is important to discuss whether the requirements of the IV approach are fulfilled (Angrist & Pischke 2015). The robust coefficient in the first stage gives evidence that the instrument has a significant effect on the industry employment. The exclusion restriction would be met, if the effect of coal potential only went through the channel of industry employment. Are there any other reasons for which coal potential might matter for growth of the “Kriegervereine”, except through industrialization? It is unlikely because coal potential especially matters for industrialization and besides that has little other use. The independence assumption requires that the instrument is randomly assigned and not correlated with omitted variables. As coal potential is purely based on geological information, it is unlikely that this is driven by an omitted variable.

## 5 Mechanisms

So far, the results give strong evidence for a causal relationship between industry employment and membership in the “Kriegervereine” in the decade before WWI. In this section, I aim to explore explanations for reasons to join the “Kriegervereine” in less industrialized regions and not to choose the “Kriegervereine” in industrialized regions. Thereby, I link the socio-economic changes associated with industrialization with nationalism. As potential explanations, I will discuss the political economy of the first globalization, migration and a divide between urban and rural regions.

### Political Economy of the First Globalization

The well-known Heckscher-Ohlin narrative could be seen as one potential explanation for the growth of the “Kriegervereine” and thereby provide an economic rationale for the spread of nationalism. There is no doubt that the industrial sector was one of the winner’s during the first globalization. The openness and competitiveness of this sector grew. Moreover, the grain invasion effected the agricultural sector in countries like Germany (O’Rourke 1997). More specifically, Lehmann (2010) shows that those regions with a high share of workers employed in industries with a negative trade balance voted more likely in favor of protectionist parties in the 1870s. This was particularly the case for regions with a high share of big agricultural enterprises. To control for this reasoning, I include the share of the area covered by big agricultural enterprises. Thereby, I am able to include those regions that lost especially in the first wave of globalization. Table 3 shows the results: The coefficient for this variable is weakly statistically significant and negative. Thus, I cannot find direct evidence for the explanation Lehmann (2010) offered for the 1870s. However, the robust coefficient for industry employment in Table 3 can be understood as evidence that regions that won due to the first globalization show a less nationalist reaction similar to the empirical evidence for recent periods (Autor et al. 2016, Dippel et al. 2017). Given this quantitative evidence, the positions from the “Kriegervereine” on economic issues further support these mixed results. On the one hand, the “Kriegervereine” aimed to protect the people against the ongoing industrial-

ization and favored a traditional life style and supported protectionist trade policies (Rohkrämer 1990, p.225). On the other hand, Rohkrämer (1990) highlights that the “Kriegervereine” faced some difficulties in the support of these regions due to financial limitations and were at least ambivalent regarding the modern developments which the “Kriegervereine” favored as long as these were of benefit for the nation.

Table 3: Political Economy of the First Globalization

	(1) 1 <sup>st</sup> stage Industry Employment	(2) 2 <sup>nd</sup> stage $\Delta$ Membership KV, 1903-1913	(3) reduced form	(4) OLS
Coal Potential	0.210*** (0.076)		-0.113** (0.046)	
Industry Employment		-0.541*** (0.108)		-0.456*** (0.086)
Big Agriculture	-0.061 (0.044)	-0.145* (0.083)	-0.112 (0.088)	-0.138 (0.082)
Controls	✓	✓	✓	✓
Administrative Region FE	✓	✓	✓	✓
R <sup>2</sup>	0.6512		0.3534	0.4238
n	429	429	429	429
F-Statistic of weak instruments	26.187			

*Notes*

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Cluster robust standard errors on the level of “Regierungsbezirke”

All variables are standardized.

## Migration

After providing evidence that the results are not driven by those regions that were most negatively effected by the first globalization, I will argue that migration was a crucial connecting development between industrialization and nationalism. The beginning 20<sup>th</sup> century was a time of mass migration. It was not only a time of massive out-migration, especially to the USA as destination country, but even more a time of internal migration, the biggest ever experienced in Germany (Wehler 2006). The migration patterns were driven by the industrialization process (Grant 2005). Moreover, the migration issue, especially in the eastern parts of Germany, were of particular interest to nationalists in Germany. Due to a lack of success of a ”German India in Africa” or establishing a big colonial empire in overseas territories, nationalists focused on a German colony in the East (Conrad 2010). Supporters of these ideas described an outflow of German people in that regions as danger for this imperial idea, especially because of the Polish minorities (Conrad 2010). Max Weber was one famous supporter and judged this development as danger for the German nation describing Polish people as animals (Weber 1993b, p.340) and the Eastern region as a German colony (Weber 1993c, p.123). The solution for Max Weber and others was to call for a strong

nationalist reaction and to foster social mobility of the German part of society within these regions by supporting them to acquire agricultural property and fostering the social and patriotic ties within these regions.<sup>11</sup> Similarly, the “Kriegervereine” strongly opposed these migration patterns and saw the Polish minority as a public enemy (Deutscher Kriegerbund 1903). In their newspaper “Parole”, the Deutscher Kriegerbund (1904) described out-migration as a “lethal disease” for the German nation. Instead of moving to the cities with the danger of moral decline, they were in favor of living in the countryside, if possible with own private property (Deutscher Kriegerbund 1901). Regarding migration and the Polish minority, there seem to be striking similarities between the “Kriegervereine” and Max Weber. Given this historical context, it is plausible to expect that migration patterns driven by the industrialization process lead to a nationalist response in those regions where people out-migrated because migration within Germany was seen as dangerous for the German nation.

To account for this reasoning, I use net migration in my analysis. In order to have data on migration, I extend the contemporary data by Max Broesike (1907) who calculated net migration as difference between the actual population and the expected population when only considering the birth and death rate for the time span 1900 and 1905 as percentage share relative to the population. To extend my data set till 1910, I do this calculation for 1905 until 1910 based on official publications given in Table 6. Net migration is positive if more people immigrate than emigrate and negative if more people emigrate than immigrate. Map 6 shows that most of the regions had a negative net migration and lost more than 10% of their population between 1900 and 1910, whereas the population in regions around the bigger cities (e.g. Berlin, Hamburg and Kiel) and in the center of industry and mining (e.g. Ruhr and Wroclaw) rose due to positive net migration.

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<sup>11</sup>On the level of the nation state, the “Reichsansiedlungsgesetz” from 1886 was implemented to improve the share of German people in the eastern regions - mainly in Poznan and West Prussia - by buying land from Polish people. Overall, the success of the program was rather limited. After 1900, the Prussian settlement commission bought mainly land from German people (Eddie 2009). In addition, the extent of the program was too small to change the majority in favor of the German speaking population. Also the “Kriegervereine” had a very small and unsuccessful program for settler by buying old manors and land (Rohkrämer 1990, p.223-228).

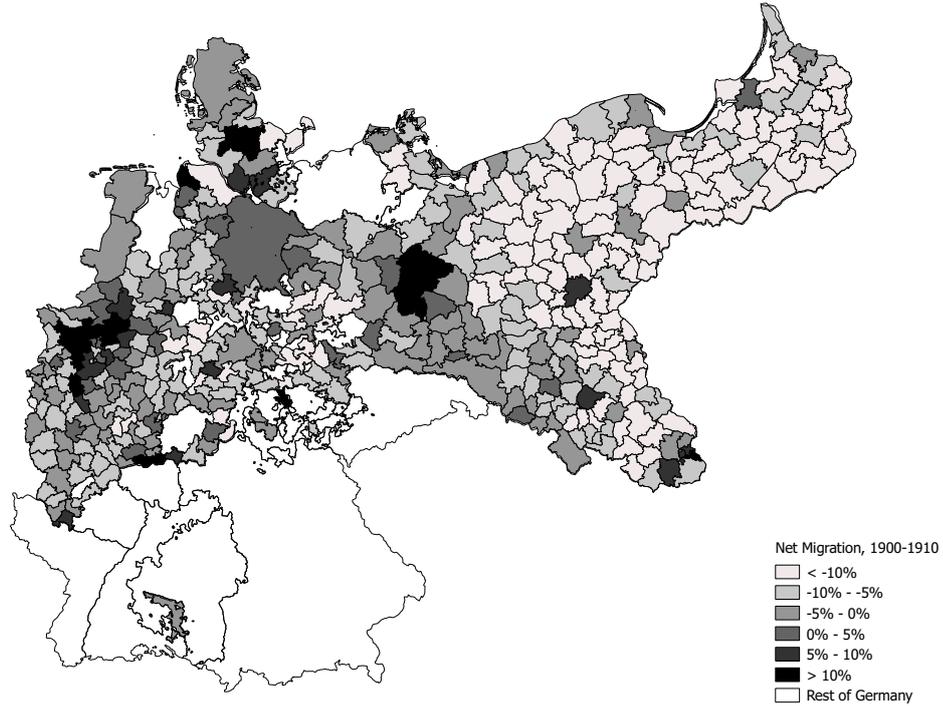


Figure 6: Net Migration, 1900-1910

In order to avoid endogeneity issues by including industry employment *and* net migration in one regression, I estimate the following three stage IV regression.<sup>12</sup>

$$\begin{aligned}
 Ind_i &= \alpha + \beta CP_i + \gamma X_i + \theta_{AD} + \epsilon_i \\
 Mig_i &= \alpha + \beta \hat{Ind}_i + \gamma X_i + \theta_{AD} + \epsilon_i \\
 \Delta KV_{i,1913-1903} &= \alpha + \beta \hat{Mig}_i + \gamma X_i + \theta_{AD} + \epsilon_i
 \end{aligned} \tag{4}$$

In this regression, the first stage predicts the share of industry employment in a county by its coal potential. In the second stage, the predicted industry employment is used to predict net migration. In the third stage, the predicted net migration works as a predictor for the increase in membership in the “Kriegervereine”. The results, reported in Table 4, support the previous results: coal potential positively effects industry employment, the instrumented industry employment is a positive predictor for net migration, and the net migration that is driven by the opportunities for industry employment that is due to coal potential is negatively associated with membership in the “Kriegervereine”.

<sup>12</sup>One other possibility would be to conduct a bounding analysis as done by Becker & Woessmann (2009). However, this requires to assume a coefficient for the influence of industrialization on nationalism based on a meta-analysis. This is not possible here, because such meta-analysis does not exist.

Table 4: Migration, 3SLS Model

1 <sup>st</sup> stage	
	Industry Employment
Coal Potential	0.276*** (0.044)
Controls	✓
Administrative Region FE	✓
n	429
2 <sup>nd</sup> stage	
	Net Migration
Industry Employment	0.389** (0.171)
Controls	✓
Administrative Region FE	✓
n	429
3 <sup>rd</sup> stage	
	$\Delta$ Membership KV, 1903-1913
Net Migration	-1.416** (0.720)
Controls	✓
Administrative Region FE	✓
n	429

*Notes*\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

Cluster robust standard errors on the level of “Regierungsbezirke”

All variables are standardized.

To explore the nationalist discourse on migration further, I especially analyze the minority conflicts Weber mentioned in his inaugural lecture in Freiburg 1895. Weber argued that the German nation is endangered by out-migration and a declining share of German speaking people in the Eastern parts (Weber 1993a). Therefore, Weber called for a strong nationalist reaction from civil society, academia and political elites. To test Weber’s call, I include a Weber dummy for those regions that face a negative net migration, a declining share of German speaking people and have at least 10% non-Germans in 1900. The econometric results are given in the Appendix in Table 12. By including this Weber dummy as well as the separate variables for net migration, change in German speaking people and non-Germans, I find mixed evidence for Weber’s call. The dummy variable itself is insignificant. However, the separate variables show strong effects. Next to the strong effect of net migration, there seems to be a stronger nationalist reaction in regions with a shrinking share of German speaking people.

As a further robustness check, I include a dummy variable for those regions, mainly West Prussia and Poznan that belonged to Poland before the Polish partitions in 1772. It could be plausible that parts of the underlying effect of migration is driven by the history of the partitions and the fear that this history could be turned around again. Thereby, I can control for the reasoning of the literature on the effects of activated history (Fouka & Voth 2016, Ochsner & Roesner 2017).

The results in the Appendix in Table 13 indicate that there is only a negative and insignificant effect. Thus, the effect of migration seems to be not driven by past borders and the fear of their recurrence, instead it is about the socio-economic developments in the the early 20<sup>th</sup> century.

## Social Identities

As a third explanation, I argue that the result is driven by a divide between urban and rural areas in terms of the availability and salience of other social identities. Shayo (2009) theoretically showed that a spread of nationalist identities depends on the “perceived distance” to other social identities, e.g. trade unions. If the distance to other social identities is high, the model predicts an equilibrium with a higher share of nationalist identities. Applying this to Prussia, one has to bear in mind that people employed in agriculture had no rights to form trade unions or to go on strike. This was changed only after WWI (Bade 1980). Thus, the “perceived distance” to other social identities is clearly higher in rural areas. Moreover, the historiography on Imperial Germany that highlights social conflicts as driving force of nationalism, e.g. Eley (1991). Considering this, it seems worthwhile to control for membership in trade unions. The regional spread in Map 7 shows that trade unions were indeed stronger in the industrial centers of Prussia.

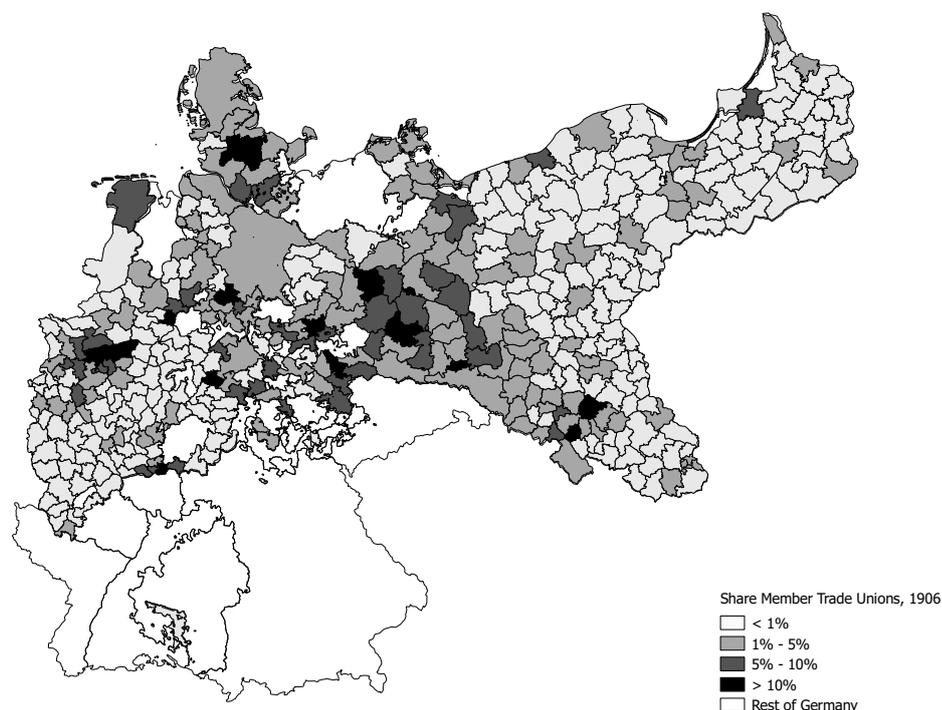


Figure 7: Labor unions, 1906

Obviously, membership in trade unions is endogenous here. Given the prohibition of trade unions in agriculture, it seems plausible that industry employment is a good predictor for mem-

bership in trade unions. Therefore, I again use a three stage IV model.

$$\begin{aligned}
 Ind_i &= \alpha + \beta CP_i + \gamma X_i + \theta_{AD} + \epsilon_i \\
 Unions_i &= \alpha + \beta \hat{Ind}_i + \gamma X_i + \theta_{AD} + \epsilon_i \\
 \Delta KV_{i,1913-1903} &= \alpha + \beta \hat{Unions}_i + \gamma X_i + \theta_{AD} + \epsilon_i
 \end{aligned}
 \tag{5}$$

The results in Table 5 reveal strong support for the explanation based on Shayo (2009). Coal potential positively effects industry employment, the instrumented industry employment is a positive predictor for membership in trade unions, and membership in trade unions that is driven by industry employment that is due to coal potential is negatively associated with membership in the “Kriegervereine”. However, the effect is weakly statistically significant.

Table 5: Trade Unions, 3SLS Model

1 <sup>st</sup> stage	
Industry Employment	
Coal Potential	0.276*** (0.044)
Controls	✓
n	429
2 <sup>nd</sup> stage	
Membership Trade Unions	
Industry Employment	0.354** (0.163)
Controls	✓
n	429
3 <sup>rd</sup> stage	
Δ Membership KV, 1903-1913	
Membership Trade Unions	-1.558* (0.814)
Controls	✓
n	429

*Notes*

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Cluster robust standard errors on the level of “Regierungsbezirke”

All variables are standardized.

## 6 Conclusion

Summarizing let me stress five main results. First, the “Kriegervereine” are a new and valid form for measuring nationalism. Using data on the “Kriegervereine” I am able to capture everyday nationalism before WWI. Second, an IV regression framework is employed to show strong evidence for a causal relationship between the share of industrial employment and the growth of the “Kriegervereine” in the decade before WWI. Thus, there is evidence that adverse economic change

can lead to a spread of nationalism. Third, there is only weak support that the results are driven by areas with big agricultural enterprises, the losers of the first globalization. Fourth, employing a three stage IV model, I find support that the results are driven by migration patterns within Prussia. Fifth, again using a three stage IV model, I find evidence for a divide between urban and rural regions. More precisely, membership in trade unions has a strong negative effect on membership in the “Kriegervereine”.

However, there are of course some limitations: Further research could analyze the effects of the growing international trade in more detail by applying the approach by Autor et al. (2013). This would require to combine trade statistics with census data. In addition, this study focused on Germany in the decade before WWI. Therefore, it could be worthwhile to investigate the drivers of nationalism before 1900 and also for other countries. Moreover, it would be interesting to investigate the rise of the trade unions as new social identity.

Concluding, the findings suggest that the spread of nationalism can be explained with modern industrial development and thus, nationalism has to be understood as a modern phenomena as also highlighted in the historiography on nationalism, e.g. Anderson (1991). Moreover, unequal and asymmetric industrial development seems to be one driver of mass militarization in the decade before World War I.

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# Appendix

## Tables

Table 6: Data Sources

Variable	Description	Source
Kriegervereine	Members in one district	Kyffhäuser-Bund der Deutschen Landes-Kriegerverbände (1913, 1903)
Net Migration	Net Migration as the difference between the actual population and the population based on the differences between births and deaths	Broesike (1907), Kaiserliches Statistisches Amt (1903, 1909, 1910 <i>a,b</i> , 1915)
Population	Total population in one district	Kaiserliches Statistisches Amt (1903, 1910 <i>b</i> )
Mother Tongue German	Population with German as mother tongue	Kaiserliches Statistisches Amt (1903, 1910 <i>b</i> ), Galloway (2007)
Protestants	Protestants	Galloway (2007)
Active Military Persons	Active military persons	Galloway (2007)
Trade Unions	Membership in the “Freie Gewerkschaften”	Hirschfeld (1908)
Industry Employment	Employment in industrial sectors	Kaiserliches Statistisches Amt (1897)
Coal Potential	See text	Asch (2005)

Table 7: Data Set

"Regierungsbezirk"	Observations
Königsberg	14
Gumbinnen	12
Allenstein	9
Danzig	8
Marienwerder	13
Berlin	1
Potsdam	14
Frankfurt	17
Stettin	12
Köslin	12
Stralsund	4
Posen	26
Bromberg	12
Breslau	21
Liegnitz	16
Oppeln	19
Magdeburg	14
Merseburg	13
Erfurt	9
Schleswig-Holstein	13
Hannover	8
Hildesheim	10
Lüneburg	2
Stade	10
Osnabrück	3
Aurich	1
Münster	10
Minden	10
Arnsberg	17
Kassel	22
Wiesbaden	16
Koblenz	12
Düsseldorf	15
Köln	10
Trier	12
Aachen	10
Hohenzollern	1

Table 8: Summary statistics

Variable	Mean sd in parantheses
$\Delta$ Membership KV, 1903-1913 in % relative to male population > 18	6.396 (4.023)
Industry Employment in % relative to total employment	32.40 (15.99)
Net Migration, 1900-1910 in % relative to population in 1900	-5.45 (8.611)
Membership in Trade Unions, 1906 in % relative to total employment	2.22 (3.315)
Big Agriculture in % relative to total area	17.24 (16.30)
Population	80577.83 (131222.1)
Mother Tongue German in % relative to population in 1900	87.29 (24.72)
Protestants in % relative to population in 1900	62.00 (36.71)
Active Military Persons in % relative to population in 1900	0.75 (1.309)
Coal Potential	0.27 (0.401)
Distance to border in kilometers	104.20 (71.89)
$N$	429

Table 9: Membership “Kriegervereine”, IV robustness check I

	(1)	(2)	(3)	(4)
	1 <sup>st</sup> stage	2 <sup>nd</sup> stage	reduced form	OLS
	Industry Employment	$\Delta$ Membership KV, 1903-1913		
Coal Potential w Deposits	0.163** (0.069)		-0.058 (0.039)	
Industry Employment		-0.354*** (0.119)		-0.446*** (0.089)
Population	0.865*** (0.105)	-0.318** (0.139)	-0.624*** (0.086)	-0.236** (0.090)
Mother Tongue German	0.122 (0.104)	0.357*** (0.115)	0.314*** (0.107)	0.369*** (0.135)
Protestants	0.172** (0.069)	0.007 (0.072)	-0.054 (0.084)	0.022 (0.079)
Active Military Persons	-0.025 (0.031)	-0.117*** (0.036)	-0.109*** (0.037)	-0.120*** (0.038)
Distance to border	-0.132 (0.157)	0.384*** (0.141)	0.431** (0.172)	0.371** (0.146)
Administrative Region FE	✓	✓	✓	✓
R <sup>2</sup>	0.6371		0.3446	0.4175
n	429	429	429	429
F-Statistic of weak instruments	12.637			

*Notes*

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Cluster robust standard errors on the level of “Regierungsbezirke”

All variables are standardized.

Table 10: Membership “Kriegervereine”, IV robustness check II

	(1)	(2)	(3)	(4)
	1 <sup>st</sup> stage	2 <sup>nd</sup> stage	reduced form	OLS
	Industry Employment	$\Delta$ Membership KV, 1903-1913		
Coal Potential	0.224*** (0.079)		-0.088** (0.037)	
Industry Employment		-0.394*** (0.110)		-0.458*** (0.093)
Membership in KV, 1903	-0.096 (0.082)	-0.213 (0.130)	-0.175 (0.163)	-0.216 (0.139)
Population	0.786*** (0.111)	-0.381** (0.162)	-0.691*** (0.125)	-0.326*** (0.117)
Mother Tongue German	0.146 (0.105)	0.443*** (0.129)	0.385*** (0.124)	0.452*** (0.150)
Protestants	0.210*** (0.070)	0.054 (0.079)	-0.028 (0.093)	0.065 (0.091)
Active Military Persons	-0.025 (0.034)	-0.139*** (0.039)	-0.129*** (0.041)	-0.141*** (0.043)
Distance to border	-0.122 (0.150)	0.372** (0.147)	0.420** (0.176)	0.363** (0.155)
Administrative Region FE	✓	✓	✓	✓
R <sup>2</sup>	0.6532		0.36	0.4342
n	429	429	429	429
F-Statistic of weak instruments	29.604			

*Notes*

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Cluster robust standard errors on the level of “Regierungsbezirke”

All variables are standardized.

Table 11: Membership “Kriegervereine”, IV robustness check III

	(1)	(2)	(3)	(4)
	1 <sup>st</sup> stage	2 <sup>nd</sup> stage	reduced form	OLS
	Industry Employment	$\Delta$ Membership KV, 1903-1913		
Coal Potential	0.212*** (0.077)		-0.099** (0.045)	
Industry Employment		-0.466*** (0.113)		0.080 (0.082)
Population	0.830*** (0.102)	0.913*** (0.157)	0.526*** (0.079)	0.431*** (0.085)
Mother Tongue German	0.111 (0.098)	-0.331*** (0.060)	-0.383*** (0.066)	-0.398*** (0.076)
Protestants	0.192*** (0.067)	-0.137* (0.071)	-0.226*** (0.072)	-0.226*** (0.072)
Active Military Persons	-0.018 (0.031)	0.089*** (0.031)	0.097*** (0.031)	0.106*** (0.032)
Distance to border	-0.121 (0.150)	-0.038 (0.123)	0.019 (0.096)	0.039 (0.103)
Administrative Region FE	✓	✓	✓	✓
R <sup>2</sup>	0.6500		0.6836	0.6807
n	429	429	429	429
F-Statistic of weak instruments	26.718			

*Notes*\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

Cluster robust standard errors on the level of “Regierungsbezirke”

All variables are standardized.

Table 12: Weber’s Call, 3SLS Model

1 <sup>st</sup> stage	
	Industry Employment
Coal Potential	0.272*** (0.044)
Controls	✓
Administrative Region FE	✓
n	429
2 <sup>nd</sup> stage	
	Net Migration
Industry Employment	0.446*** (0.173)
Controls	✓
Administrative Region FE	✓
n	429
3 <sup>rd</sup> stage	
	$\Delta$ Membership KV, 1903-1913
Weber Dummy	-0.230 (0.335)
Net Migration	-1.248** (0.588)
Change Mother Tongue German	-0.083* (0.048)
Mother Tongue German	0.267** (0.128)
Controls	✓
Administrative Region FE	✓
n	429

*Notes*

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Cluster robust standard errors on the level of “Regierungsbezirke”  
All variables are standardized.

Table 13: Activated Polish History, 3SLS Model

1 <sup>st</sup> stage	
	Industry Employment
Coal Potential	16.794*** (1.761)
Controls	✓
n	429
2 <sup>nd</sup> stage	
	Net Migration
Industry Employment	0.227*** (0.054)
Controls	✓
n	429
3 <sup>rd</sup> stage	
	$\Delta$ Membership KV, 1903-1913
Polish Territory before 1772	-0.628 (0.911)
Weber Dummy	-0.233 (0.336)
Net Migration	-1.248** (0.587)
Change Mother Tongue German	-0.082* (0.048)
Mother Tongue German	0.269** (0.127)
Controls	✓
n	429

*Notes*

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Cluster robust standard errors on the level of "Regierungsbezirke"

All variables are standardized.