Migration, Diffusion of Ideas and the Rise of the American Labor Movement: Evidence from the American Civil War*

Pablo Zarate†

March 2026

PRELIMINARY VERSION. PLEASE DO NOT CITE OR CIRCULATE.

Abstract

This paper investigates the role of European ideological transmission in the formation of US labor market institutions. I study how pro-worker Germans fleeing the failed 1848 revolution shaped the American labor movement. To do so, I construct a novel, individual-level dataset of German labor movement activists from 1848 by digitizing primary-source congress and association rosters and follow them in the US. I first document a robust positive correlation between the geographical settlement of Forty-Eighter revolutionaries and the subsequent density of Knights of Labor unions. Specifically, counties that received these political refugees in the mid-19th century developed significantly more local union assemblies later, a relationship that persists even after strictly controlling for industrial composition, railway access, and general immigrant shares. To establish causality, I leverage the quasi-random assignment of soldiers to Union Army companies during the Civil War, exploiting these integrated units as a shock to social interaction. Using soldier-level data, I construct a county-level measure of exposure to Forty-Eighter ideas through serving in the same Civil War military units, where soldiers from different counties lived and fought together for years. I find a robust effect of 48er exposure on subsequent unionization, with effects concentrated among counties with the highest exposure levels. This demonstrates ideological transmission beyond direct settlement effects. This paper provides evidence of the horizontal diffusion of pro-worker ideas across the Atlantic and highlights how the American Civil War created unprecedented ideological exchange, contributing to the development of the American labor movement.

Keywords: Immigration, Labor Unions, Institutions, Collective Bargaining, Diffusion of Ideas
JEL codes: O15, N31, J51, J52

*I thank my advisors Nicolas Ziebarth and Philipp Ager for their continuous support and mentorship. I thank my friends Taylan Alpkaya, Shubhro Bhattacharya, Tobias Grossboelting, Emre Oral and Camila Steffens for their support. I thank Moritz Lubczyk, Suresh Naidu, Sebastian Ottinger, Hillel Rapoport, Camille Urvoy and Romain Warcziarg, as well as participants in seminars and conferences in Mannheim, Berlin, Bolzano, Naples, Birmingham, London, Paris, Trier, Hohenheim, Rome and Brno for their useful comments.

†University of Mannheim, Department of Economics, and ZEW Mannheim. E-mail: pzaratec@mail.uni-mannheim.de

1 Introduction

Recent research has revitalized interest in unions and collective bargaining as key institutions influencing wage structures, inequality, and worker power. Despite declines in union membership across most OECD economies, coverage through collective bargaining remains high, and new empirical work has demonstrated that such arrangements can deliver higher wages and reduced inequality with limited efficiency costs. Jaeger et al. (2025) synthesize this literature, showing a robust negative relationship between collective bargaining coverage and wage inequality across countries.

Understanding how labor institutions emerged in the United States is particularly relevant as policymakers debate how to address rising inequality and declining worker power. The Forty-Eighters' success in transplanting European labor organizing models demonstrates that institutional innovations can successfully cross borders through skilled migrantsâa lesson relevant for contemporary debates about high-skilled immigration and institutional reform.

My study examines the ideological and demographic roots of union formation in the United States during a critical early phase of labor organization in the United State: the rise of the Knights of Labor. By leveraging spatial variation in the settlement of European socialists and revolutionaries, I provide evidence on how early labor institutions were seeded by political ideas imported through migration. This historical lens sheds new light on how coverage and spillover effects may have emerged endogenously-not just through formal structures, but via ideological diffusion and collective identity formation. By exploring how imported political ideas shaped early labor institutions, this work connects the emergence of organized labor in the 19th century with contemporary debates on the role of worker power in inclusive economic growth (e.g., Jaeger et al., 2023; Naidu Yuchtman, 2023; Bartels, Jaeger Obergruber, 2024).

While we somewhat understand how migrants impact labor markets through increased labor supply, their role in transmitting political ideologies and organizational knowledge remains poorly understood. The arrival of German political refugees following the failed 1848 revolution -known as the *Forty-Eighters*- provides a unique opportunity to examine how ideologically-motivated migrants can catalyze institutional change. These revolutionaries, experienced in political mobilization, were highly educated, well connected with the European intellectual elites and included some of the very first socialists. They arrived in America during a critical period of industrial transformation and social upheaval. By tracing their influence on American labor organization, this paper illuminates how migration can serve as a mechanism for institutional diffusion across countries.

To do this, I employ two distinct empirical strategies. First, I use OLS regressions with a comprehensive set of controls to compare the evolution of the labor movement between counties that received 48ers and those that did not. I find that recipient counties ended up developing around 20 more unions on average compared to the places that didn't. This result is robust to the exclusion of the counties most well-known for their unionization (Philadelphia and New York), windsorizing the dependent variable, only looking at below-average population counties and including state fixed effects.

Rather than claiming that the settlement locations of these revolutionaries was random, I look into the diffusion of pro-worker ideas through quasi-random encounters with these Revolutionar-

ies during the American Civil War. I use random variation in military comradery by exploiting the quasi-random assignment of soldiers to Union Army companies containing *Forty-Eighters* during the American Civil War. In particular, I use a formula-type instrumental variable strategy in which the shock of the Revolutionaries is spread differently across counties through the different compositions Union Army companies. I claim that the shares are random conditional on geography. I find that this exposure measure reliably predicts the amount of Unions in a county.

This paper makes three distinct contributions. First, I demonstrate that selective migration can transform labor market institutions through channels beyond traditional wage effects -specifically through the transfer of organizational knowledge and political ideals. By examining the *Forty-Eighters'* influence on union formation, I show how politically motivated immigrants can accelerate institutional innovation in hosting societies. Second, I provide empirical evidence for the horizontal diffusion of pro-worker ideas across the Atlantic, showing how individual migrants can serve as vectors that spark institutional change. By exploiting quasi-random variation in *Forty-Eighter* settlement patterns and their assignment to Union Army units, I identify both the direct and indirect channels through which their influence spread. Finally, I provide novel evidence on the foreign origins of American labor institutions. This shows how European pro-worker ideas were adapted and implemented in the American context.

The paper is structured as follows. Section 2 gives the historical details, including the Knights of Labor, the relationship between the Revolutionaries and the Labor Movement in the US and the company formation details during the Civil War. The sections 3 and 4 discuss the data, and empirical strategies used in this paper. Section 5 discusses the results, and finally section 7 discusses and concludes.

1.1 Related Literature

This paper contributes to three literatures. First, I extend recent work on union formation by identifying ideological diffusion as a key mechanism. While Sezer (2023) emphasizes labor coercion and Medici (2023) focuses on wage competition from mass immigration, I show that specific ideologically-motivated migrants can catalyze unionization through knowledge transfer.

My paper differs from this recent work in three crucial ways. First, I examine the Knights of Labor-an inclusive organization that actively incorporated immigrants, African Americans, and women-rather than the exclusionary nativist unions of the early 20th century studied by Medici (2023). Second, rather than exploiting variation in general migration flows, I trace specific individuals whose socialist ideology and organizational experience uniquely positioned them to transfer labor institutions. Third, I provide causal evidence on horizontal diffusion by exploiting quasi-random exposure to *Forty-Eighters* through Civil War military service.

While the migration literature has established that migrants transfer human capital (Waldinger (2023)) and cultural norms (Miho et al. (2024)), less is known about the transfer of organizational and political knowledge. The economics literature has traditionally focused on migration's labor market effects, with studies like Beerli et al. (2021) and Dustmann et al. (2017) examining how immigrant inflows affect local wages and employment. However, recent scholarship reveals migrants'

broader role in shaping receiving societies' institutions and cultural norms. Miho et al. (2024) documents how forced migration transmitted gender norms across the former Soviet Union, while Giuliano and Tabellini (2020) show how Southern European immigrants transformed American preferences for social insurance. Perhaps the most relevant, Waldinger (2023) demonstrates how the exodus of Jewish scientists from Nazi Germany permanently altered the trajectory of scientific research in receiving institutions.

This paper also contributes to the economics literature on social movement diffusion and ideological transmission. While recent work has focused on modern communication technologies-such as Acemoglu et al. (2018)'s study of Arab Spring protests spreading through Twitter, Cantoni et al. (2019)'s analysis of Hong Kong protest coordination, and Manacorda and Tesei (2020)'s work on mobile phones facilitating African protests-I examine ideological diffusion in a pre-modern communication setting. The Civil War context provides a unique laboratory where prolonged face-to-face interaction in military units, rather than technology or geographic proximity, drove ideological transmission. My findings complement Bursztyn et al. (2021)'s evidence on the intergenerational persistence of political movements by showing how European revolutionary ideologies took root and persisted in American labor institutions through direct personal contact. Unlike contemporary settings where researchers struggle to separate online from offline influence, the historical setting allows clean identification of person-to-person ideological transfer.

The specific impact of European migration on 19th-century American institutions has received increasing attention. Scholars have documented European immigrants' influence on political participation, educational institutions, and civic organizations. Dippel and Heblich (2020) analysis of *Forty-Eighters* in the Union Army provides compelling evidence for migrants' role in political mobilization, showing how these revolutionaries enhanced soldier participation in the Civil War through ideological transmission. While Dippel and Heblich (2020) demonstrate that Forty-Eighters were effective leaders who mobilized their fellow Germans for war, this paper asks a fundamentally different question: Did these activists transmit a persistent organizational technology (unionism) to the native-born population? I show that the Forty-Eighters did not just lead soldiers; they converted them.

2 Historical Background

2.1 Background: The 1848 Revolution and the Forty-Eighter Migration

A significant catalyst for a distinct wave of German migration was the European Revolutions of 1848. While often viewed through a political lens of liberalism and nationalism, contemporaries predicted a "social revolution," as the Prussian noble von Radowitz noted in 1846. The core of the 1848 uprising in the German states was the "social question"-the problem of poverty and the emergence of a class-conscious working class as a political force. The revolution emerged as a watershed moment, characterized by an unprecedented alliance between liberal reformers and this newly organizing working class.

The "working class" that manned the barricades in 1848 was not a modern industrial proletariat.

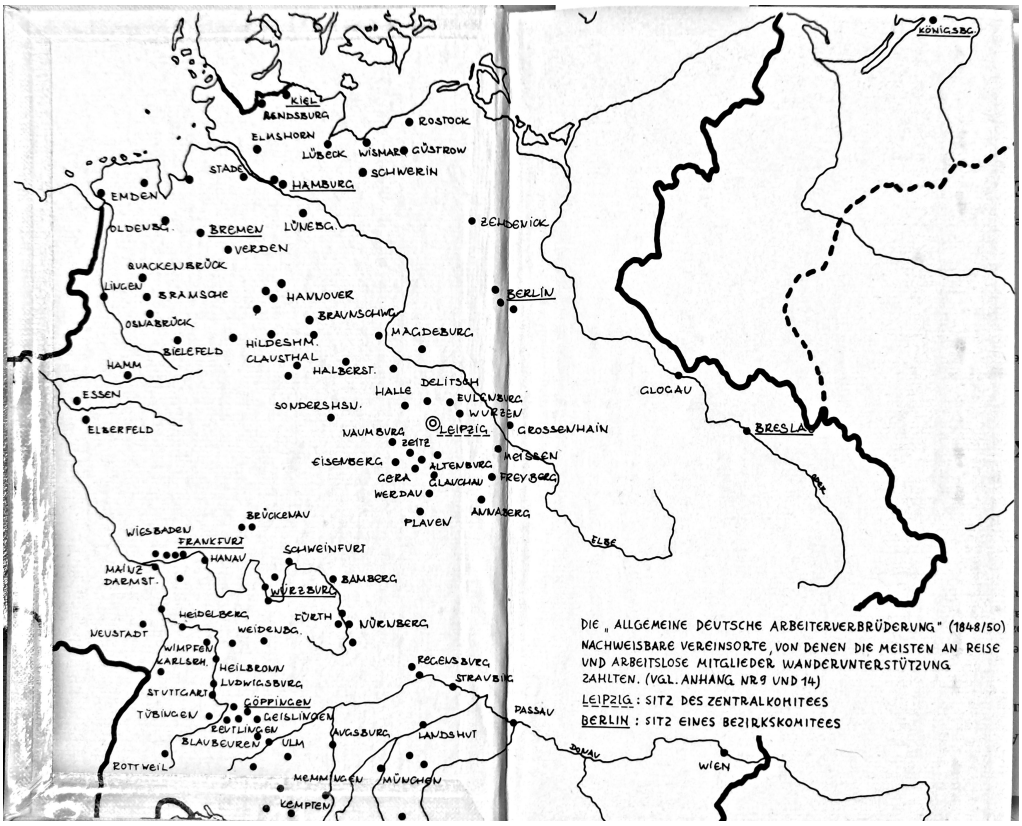
Germany in the 1840s stood only on the threshold of industrialization. Instead, the revolutionary masses were composed primarily of artisans (Handwerker). This group, a complex mix of "failed or failing master craftsmen, journeymen frustrated in advancement... [and] skilled tradesmen put out of work," was in a state of crisis. This crisis was driven by several factors. First, a rapid population swell in the German states (from 23 to 35 million between 1800 and 1850) created a large, landless "agrarian proletariat" that flooded the towns, increasing competition for work. Second, this put immense pressure on the traditional guild system. The number of journeymen and apprentices grew far faster than the number of masters, creating a conflict where masters sought to protect their status while journeymen found their path to advancement blocked, condemning them to a lower standard of living. Third, the introduction of *Gewerbefreiheit* (free entry into trades) and new technologies (like railways) broke the guilds' local monopolies, forcing skilled artisans to compete with cheaper, mass-produced goods.

This economic desperation was super-charged by the immediate crises of the mid-1840s, namely the potato famine of 1845 and severe grain failures in 1846-47. In response, these artisans and workers organized. This period saw the formation of influential organizations like the *Allgemeine Deutsche Arbeiterverbruederung* (General German Workers' Brotherhood), founded by Stephan Born, and the *Zentralkomitee der deutschen Arbeiter* (Central Committee of German Workers). Locally, numerous craftsmen's associations (*Handwerkervereine*) and workers' educational associations (*Arbeiterbildungsvereine*) flourished, combining social, educational, and political functions (Noyes, 1966).

Figure 1 maps the geographical distribution of the German Workers' Brotherhood between 1848 and 1850, documenting more than ninety towns and cities in which the organization operated. Although its membership extended across much of the German-speaking lands-from the Rhineland through Saxony and up to northern ports-the Brotherhoodâs principal centers of coordination were located in Berlin and Leipzig, where its central committees were based. The breadth of this network reflects the organization's deliberate focus on mobilizing skilled urban craftsmen who were seen as capable of collective self-help and organizational discipline. Membership in the Brotherhood provided workers with mutual-aid funds for sickness and unemployment, access to lectures and reading rooms, and even opportunities to experiment with cooperative production (Noyes, 1966). These functions required dense associative ties across towns, and the map demonstrates just how extensive these early worker networks had already become. In this sense, the Brotherhood served as an important precursor to later socialist and labor movements, cultivating habits of organization, mutualism, and political engagement that many members-and future emigrants-would later transmit outside Europe.

The failure of the 1848 Revolution and the subsequent political persecution of its leaders led directly to the "Forty-Eighter" emigration wave. An estimated 4,000-10,000 of these political refugees fled to the United States. This cohort was unique: they were not just laborers, but skilled artisans, intellectuals, and, crucially, experienced political organizers. These Forty-Eighters brought with them radical democratic ideals and practical experience in labor organization and mass mobilization. Many prominent future labor leaders in the United States, such as Friedrich Sorge and Joseph Weydemeyer, had participated in the 1848 Revolution. Their experiences with German worker societies (*Turnvereine* and *Arbeiterbildungsvereine*) provided organizational models that would later

FIGURE 1: GEOGRAPHICAL CHARACTERIZATION OF GERMAN WORKERS' BROTHERHOOD (1848-1850). SOURCE: BALSER (1962)



influence the development of American labor unions. As Figure **??** depicts, these *Forty-Eighters* dispersed widely throughout the US, with clusters in cities like New York and Philadelphia but also significant settlement across the Midwest. This level of dispersion, rather than clustering in a single region, makes an idiosyncratic location selection more likely.

This specific, politically-driven wave of migration was part of a much larger 19th-century phenomenon. The mid-to-late 19th century was characterized by large flows of migrants from Europe to the Americas, an era known as the "Age of Mass Migration". The origin countries of these migrants varied by decade; early migration to the US (1850s-1890s) came mostly from Ireland, Germany, and England, while Italians and other Eastern- and Southern-Europeans arrived in mass only at the beginning of the 20th century. This general transatlantic movement from Germany was accelerated by the creation of new transport lines like the *"Hamburg-Amerika Linie"* (currently *Hapag-Lloyd*). Aided by cheaper transport, broader political uncertainty in Germany, and attractive settlement policies in the US, millions of Germans, including the Forty-Eighters, sought new lives across the Atlantic.

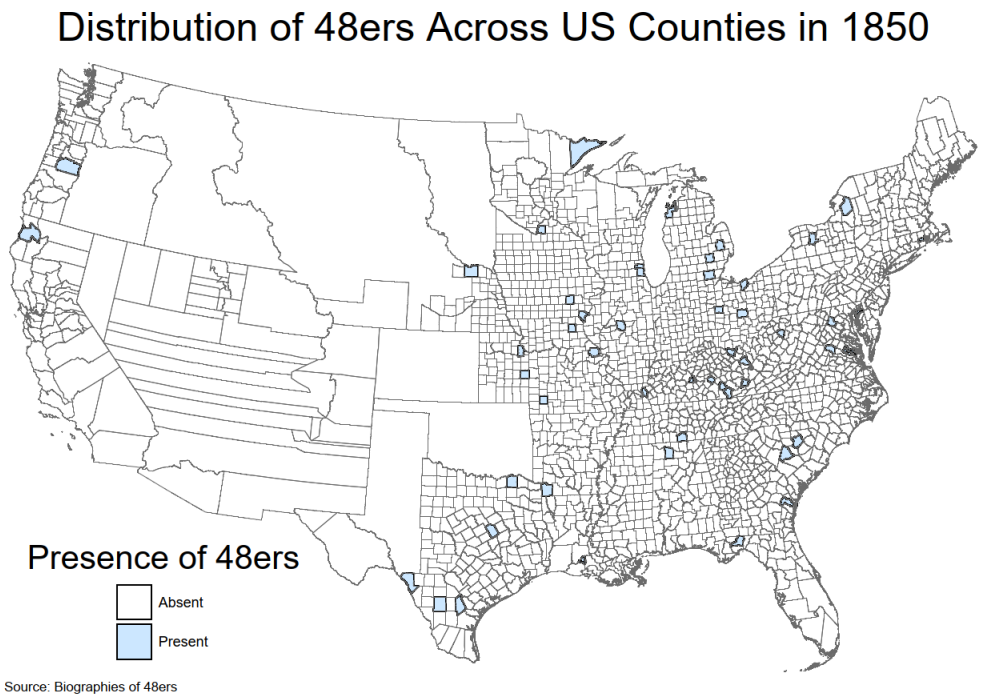


FIGURE 2: DISTRIBUTION OF 48ERS IN COUNTIES

2.2 Knights of Labor

In the 19th century, American labor unionism emerged, with the Knights of Labor (KoL) becoming the third national labor federation in the United States. While it shared similarities with previous federations, such as the emphasis on political action and independent producers, the KoL were a particularly progressive organization. In their preamble from 1881, the Knights included multiple petitions, including the end of child labor, equal pay for equal work for both sexes, an 8-hour workday, the creation of the Bureau of Labor Statistics and the establishment of cooperatives.

The KoL peaked in popularity in the 1880s, reaching a close to a million workers in 1886 (Friedman, 1988; Voss, 1993). This popularity was suddenly threatened by the stigmatization of Unions following what would become the Haymarket Affair. In May of 1886, in a direct response to police brutality oppressing a strike of the McCormick workers in rural Illinois, Union organizers called to the first solidarity march in the US. Thousands of workers met in the commercial center of Chicago, the Haymarket, in solidarity with the workers of the McCormick factory. In a chaotic incidence, dynamite was thrown at a police officer, killing him. This event led to the categorization of unions as radicals and to the execution of multiple labor union organizers held responsible.

Table 1 presents the sectoral distribution of Knights of Labor unions based on Garlock (2001) comprehensive dataset, which documents over 12.000 of the estimated 20.000 unions active between 1869 and 1899. While extractive industries like coal mining dominated with 844 unions (15.9% of the total), no single sector commanded a majority share. This widespread distribution, spanning traditional manufacturing, transportation, and agricultural sectors, suggests the Knights'

successful penetration across diverse economic activities. Notably, union size varied substantially, from small agricultural assemblies averaging 27 members to larger textile manufacturing unions with 149 members, reflecting industry-specific organizational patterns. The presence of substantial unions in both skilled trades (e.g., Boot & Shoe Manufacture) and unskilled labor indicates the movement's capacity to organize workers across the skill distribution.

The occupational distribution of German immigrants positioned them strategically within the industries where the Knights of Labor established their strongest presence during the 1880s. Table 2 demonstrates that Germans were consistently overrepresented in key Knights of Labor industries throughout the period from 1860 to 1880. In construction, which accounted for 6.5% of all Knights unions, German over representation increased from 1.15 in 1860 to 1.41 by 1880, indicating that Germans were 41% more likely than non-Germans to work in this sector. The pattern is even more pronounced in leather and footwear manufacturing (boot, shoe, and leather production), where Germans maintained over representation ratios above 2.4 throughout the period, peaking at 2.69 in 1870. This industry hosted 246 Knights unions (4.6% of all unions) with an average membership of 98 workers per union. Similarly, in fabricated metal products and metalworking-industries central to skilled craft production-Germans were overrepresented by ratios ranging from 1.66 to 2.01 across the two decades. Even in iron and steel mills, despite some fluctuation, Germans maintained over representation ratios between 1.30 and 1.47.

The sectoral concentration of German workers in Knights-relevant industries reflects the broader occupational pattern documented in Table A1, where Germans showed a 2.21-fold over representation in craftsmen and artisan occupations compared to non-Germans. The industries with strong Knights presence-construction, leather manufacturing, metalworking, and iron and steel-were precisely those that demanded the skilled craft labor in which Germans specialized. With 20.06% of German workers employed as craftsmen compared to only 9.08% of non-Germans, German immigrants formed a substantial portion of the skilled workforce in these unionized sectors. This occupational positioning meant that Germans were not merely present in Knights industries but were concentrated in the skilled trades that formed the organizational core of union activity. The Knights of Labor's inclusive organizing strategy, which sought to unite skilled and semi-skilled workers across craft boundaries, aligned well with the German immigrant community's occupational profile. Notably, Germans were underrepresented or showed declining presence in printing and publishing (falling from parity at 1.00 in 1860 to 0.87 in 1880), an industry with minimal Knights presence, further suggesting that German workers' industrial distribution corresponded closely with the sectors where labor organizing was most active.

Figure 3 illustrates the temporal evolution of Knights of Labor union numbers from 1865 to 1900. The graph reveals three distinct phases: an initial period of gradual growth (1869-1880), followed by exponential expansion (1881-1886) culminating in approximately 7,500 active unions, and a subsequent sharp decline post-1886. This abrupt reversal coincides with the Haymarket Affair, which catalyzed public opposition to organized labor. The post-1886 contraction stabilized at around 4,000 unions by 1890, suggesting a persistent but diminished organizational presence.

TABLE 1: DISTRIBUTION OF KNIGHTS OF LABOR UNIONS BY INDUSTRY

Industry	N of Unions	% of Unions	Av. Members
Coal Mining	844	15.9	45
Agr. & Rural Industry	433	8.2	27
Building Trades & Construction	343	6.5	64
Garment and other Cloth Manufacture	255	4.8	68
Boot & Shoe Manufacture	246	4.6	98
Rail Transport	246	4.6	107
Textile Manufacture	231	4.4	149
Unskilled Labor	213	4.0	53
Leather Manufacture [non-shoe]	123	2.3	84

Notes: Knights of Labor data from Garlock (2001). Table shows the top nine industries by number of unions. Total sample includes 5,304 unions across all industries.

TABLE 2: KNIGHTS OF LABOR NEW JERSEY: YEAR FOUNDED BY ORGANIZING STRATEGY

	Organizing strategy					
	Craft		Assembly of unskilled		Mixed & Quasi-industrial	
Year founded	No.	%	No.	%	No.	%
1873–78	7	70	0	0	3	30
1879–82	10	29	8	23	17	48
1883–85	20	35	26	46	11	19
1886	36	19	60	31	96	51
1887–95	10	34	12	41	7	24
Total	**83**		**106**		**134**	

Notes: Knights of Labor data from Garlock (2001) for New Jersey assemblies. Percentages calculated within each row. Craft assemblies organized skilled workers by trade; assemblies of unskilled organized common laborers; mixed and quasi-industrial assemblies combined multiple occupations or skill levels within a single local.

TABLE 3: GERMAN OVERREPRESENTATION IN KNIGHTS OF LABOR INDUSTRIES

Industry (Census)	1860	1870	1880
Industries with strong Knights of Labor presence			
Construction	1.15	1.40	1.41
Leather & Footwear (Boot & Shoe, Leather)	2.41	2.69	2.56
Fabricated Metal Products (metalworking)	1.93	2.01	1.66
Iron & Steel Mills	1.30	1.47	1.36
Industry with minimal KOL presence and low German representation			
Printing & Publishing	1.00	1.12	0.87

Notes: Entries show the ratio (German share) / (non-German share) within each industry-year. Values greater than 1.0 indicate German overrepresentation relative to their population share. Knights of Labor industries identified from Garlock (2001). German shares calculated from full-count census microdata (Ruggles et al.).

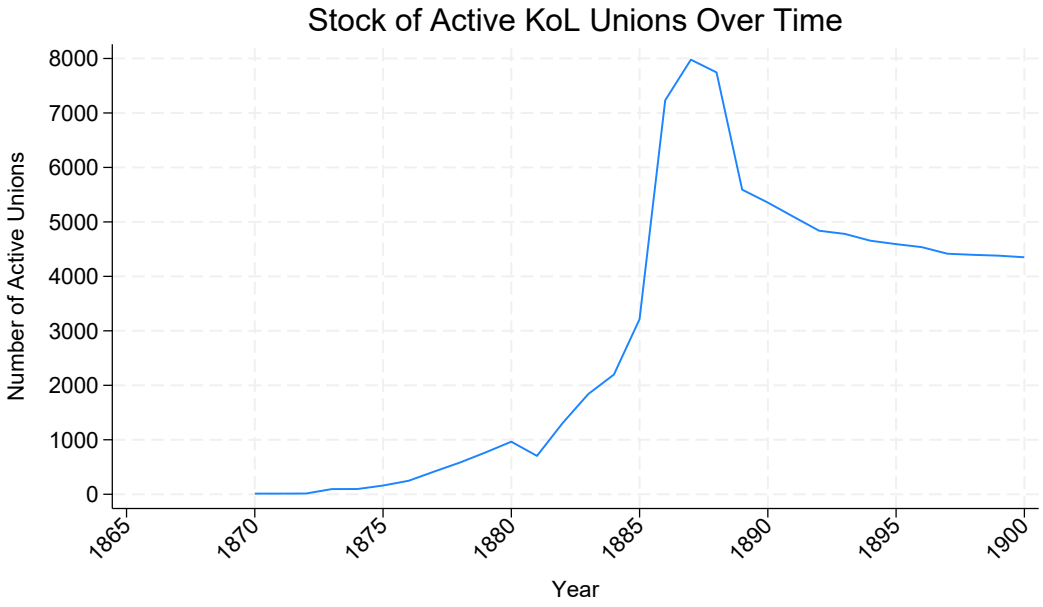
2.3 Civil War and the Union Army

The American Civil War (1861-1865) represented one of the largest military mobilizations of the 19th century, with the Union Army eventually mustering approximately 2.2 million soldiers (McPherson, 1988). The conflict's epicenter shifted across multiple theaters, though Virginia and the corridor between Washington, D.C. and Richmond saw the heaviest concentration of forces and most decisive engagements (Foote, 1974). Key areas of recruitment for the Union Army were concentrated in the industrialized Northeast and the rapidly developing Midwest, with states like New York, Pennsylvania, and Ohio contributing the largest contingents (Costa and Kahn, 2008).

The Union Army's organizational structure was characterized by state-based volunteer regiments, typically comprising 1.000 men when fully staffed, though combat attrition often reduced effective strength to 300-400 soldiers (Hess, 2017). These units were then grouped into brigades, divisions, and corps, creating a hierarchical command structure that facilitated both tactical operations and administrative functions (Weigley, 2004). The final Union victory in 1865 resulted in approximately 360,000 Union military deaths from all causes, including roughly 110.000 in direct combat and 250.000 from disease and other causes (Faust, 2008). This extensive military organization served as a crucial network for social and cultural diffusion, as soldiers from diverse backgrounds-including a significant German immigrant population-shared experiences, ideologies, and organizational practices that would later influence various social movements, including labor organization (Wiley, 1952).

The formation of Union Army companies during the Civil War presents a unique opportunity to study ideological transmission due to the conditional random assignment of soldiers to regiments. While companies initially formed around local communities, regimental organization introduced significant geographic mixing as the war progressed. As Geary (1991) documents, when a county could not fill an entire company of 100 men, recruits from multiple counties were necessarily combined, creating exogenous variation in soldier composition. This administrative necessity, rather than ideological sorting, determined much of the regiment formation process, particularly after

FIGURE 3: TIME SERIES OF STOCK OF ACTIVE KOL UNIONS



Notes: Figure shows the stock of active Knights of Labor unions by year. Data from Garlock (2001). The stock represents the cumulative number of unions that have been founded minus those that have disbanded as of each year.

initial volunteer enthusiasm waned in late 1861.

The Union draft system, formalized under the Enrollment Act of 1863, further strengthened conditional random assignment through its structured lottery mechanism. Costa and Kahn (2003) detail how "the names of men eligible for the draft were placed in a wheel and drawn at random until a district's quota was filled" (p. 523), creating quasi-random variation in company assignment. Even before formal conscription, McPherson (1997) demonstrates that while early volunteers could select their regiment, replacements were increasingly assigned based solely on manpower needs rather than personal preference or characteristics. This temporal variation in assignment procedures provides additional identification leverage for our analysis of ideological transmission.

For German-Americans and 48ers specifically, the evidence suggests significant dispersion across regiments despite preferences for German-speaking units. Kamphoefner and Helbich (2006) shows that administrative limitations meant many German-Americans with 48er sympathies served in predominantly English-speaking regiments, creating variation in exposure to their ideas. According to Levine (1980), "while German-American enlistees often preferred German regiments, administrative needs frequently required placing German recruits in mixed regiments" (p. 142). This institutional constraint on ethnic clustering enables our identification strategy by ensuring 48ers were distributed more widely than would have occurred through self-selection alone.

Statistical evidence from the Union Army Data Set further supports conditional random assignment. Costa (2010) found no significant correlation between pre-war occupation and regiment assignment after controlling for county of origin, while Lee (2014) demonstrates no significant dif-

ference in pre-war characteristics between soldiers who served with high versus low proportions of foreign-born comrades. These findings align with Hess (2017) observation that regiments combined companies from dispersed locations based primarily on which units were ready for service simultaneously, introducing randomness in exposure to 48ers and their ideological influence. This conditional random assignment mechanism provides a strong foundation for identifying the causal impact of 48er exposure on subsequent labor organization outcomes.

3 Data

3.1 German *Forty-Eighters*

To construct my primary dataset of political activists, I digitized and compiled new lists of German individuals who participated in the 1848 revolutionary-era labor movement. This list is sourced from primary documents located in German archives and libraries, including participant lists from various worker congresses (Arbeiterkongresse) and membership rolls from the national worker's association, the *Allgemeine Deutsche Arbeiterverbruederung* (General German Workers' Brotherhood). The digitization process, as illustrated in Figure 3, involves systematically extracting the full names, hometowns, and local association (*Zweigverein*) affiliations of these "48ers" from these historical records. This newly created list of German labor activists serves as the basis for a longitudinal analysis of their migration and integration into the United States. I link these individuals to several large-scale US historical datasets using a name-matching methodology. First, I identify their migration records by matching names to comprehensive passenger lists from the mid-19th century. Second, I locate these individuals and their families within the United States using full-count US census data. Finally, to capture their civic and political integration, I cross-reference the names with Union Army service records from the American Civil War. This linked dataset allows me to follow a specific cohort of politically active 48ers from their activities in Germany through their subsequent lives in the US.

Data on the convicted 1848 German Revolutionaries and their places of settlement comes from Dippel and Heblich (2020). Their dataset comprises biographical information for approximately 500 Forty-Eighters, compiled from multiple historical sources (Zucker, 1950; Wittke, 1952; Raab, 1998; Baron, 2012), complemented with genealogical research. For this paper, I define Forty-Eighter towns as Northern settlements where at least one Forty-Eighter had established residence during 1856-1861. This definition excludes their initial settlement period in port cities like New York, when they were establishing themselves but remained politically inactive. This yields 73 Forty-Eighter towns, with their geographic distribution shown in Figure 2.

3.2 Union Army

The empirical analysis employs the Union Army Data Sample, a comprehensive longitudinal dataset originally assembled through the Early Indicators of Aging project. Fogel et al. (2000) provide rich data on 11% of the total companies of the Union Army that fought in the Civil War. The Union

Army was organized in units of up to 100 men (a “company"). The dataset includes data on every soldier passing through these companies, including information on the battles they fought together, date of entry and exit, officers who enlisted them, full name, ethnicity, town, height, and other characteristics.

The sample comprises nearly 40,000 northern white soldiers serving in 331 companies of volunteer infantry, selected through a one-stage cluster sampling procedure, and is representative of the white, northern, male population of the United States during this period. The sampling frame excluded officers commissioned at enlistment and African American soldiers. Researchers constructed this dataset by linking soldiers to three primary record types: Compiled Military Service Records (CMSR), Pension Records (MIL), and Carded Medical Records (CMR), all accessed through the National Archives and Records Administration. Additionally, the data includes detailed medical information from Surgeons' Certificates (SCRTS) contained within pension records.

A unique feature of this dataset is its linkage to U.S. Federal Census records. While the initial data collection focused on the 1850, 1860, and 1900, a subset of the sample (the IN/WI data) covering 27 companies from Indiana and Wisconsin was later expanded to include all available census decades between 1850 and 1930 (excluding the lost 1890 census). Each soldier is assigned a unique 10-digit identification number (recidnum) that allows for consistent tracking across all data components, facilitating comprehensive longitudinal analysis of individual trajectories.

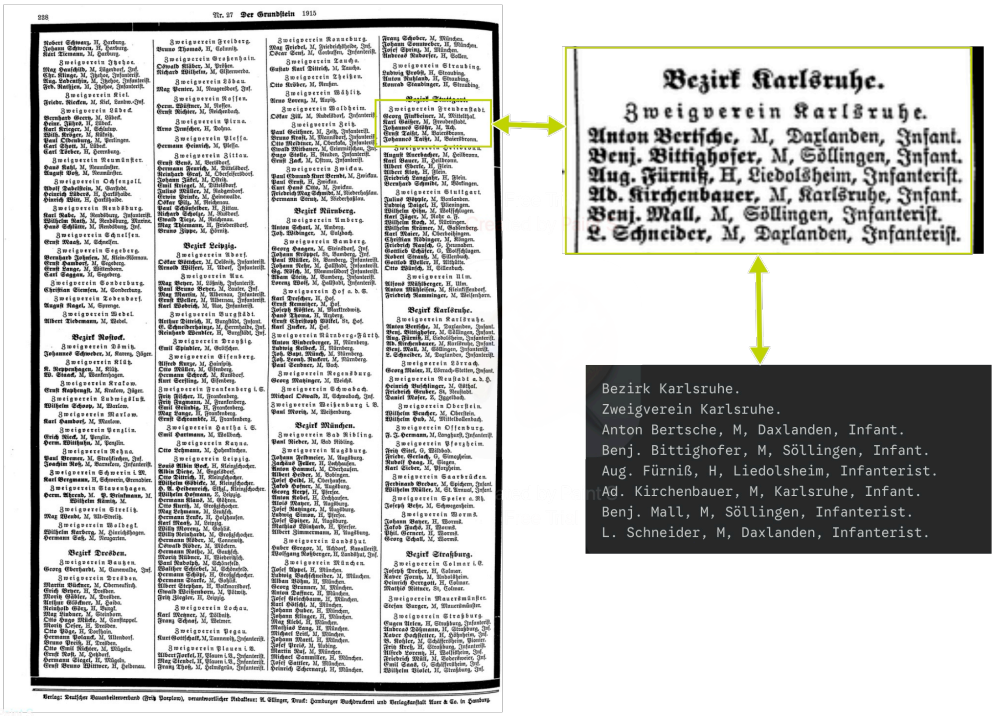
This rich data structure enables us to trace both the military service networks and subsequent socioeconomic outcomes of soldiers, providing an ideal setting for examining the transmission of revolutionary ideologies through Civil War military units and their effects on later labor organization.

3.3 Knights of Labor Unions

I measure labor movement activity using three county-level outcomes: (a) the number of Knights of Labor assemblies (local union branches), (b) union membership where reported, and (c) strike activity. The primary data source is Garlock (2001), who systematically compiled information on Knights of Labor assemblies from the *Journal of United Labor*, General Assembly proceedings, and other organizational records spanning 1869-1919. These records document assembly locations, operational dates, and occasional membership statistics. I geo-coded assembly locations to 1860 county boundaries and constructed annual county-level counts, yielding a dataset of more than 6,600 assemblies across 472 counties—the most comprehensive geographic mapping of Knights organizing available.

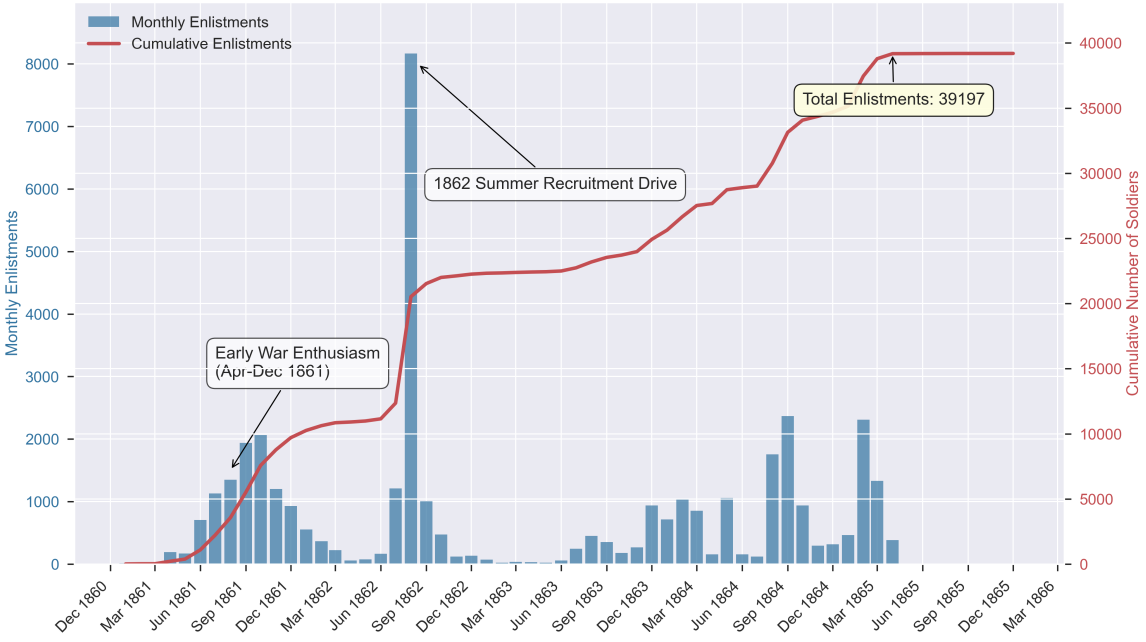
While Garlock's data provides excellent coverage of *where* and *when* assemblies formed, explicit membership information exists for only a subset of assemblies, limiting the ability to analyze *who* joined the Knights and test hypotheses about ethnic composition and occupational networks. To address this limitation, I compiled an original dataset of individual Knights of Labor activists through systematic digitization of the organization's newspapers and proceedings. The *Journal of United Labor* and *Journal of the Knights of Labor*, published throughout the 1870s and 1880s, routinely printed lists of local assembly officers, convention delegates, and district representatives,

FIGURE 4: EXAMPLE OF DATA DIGITIZATION PROCESS



Notes: Page from the Newspaper Hamburg Congress of Workers (1848)

FIGURE 5: EVOLUTION OF UNION ARMY ENLISTMENTS



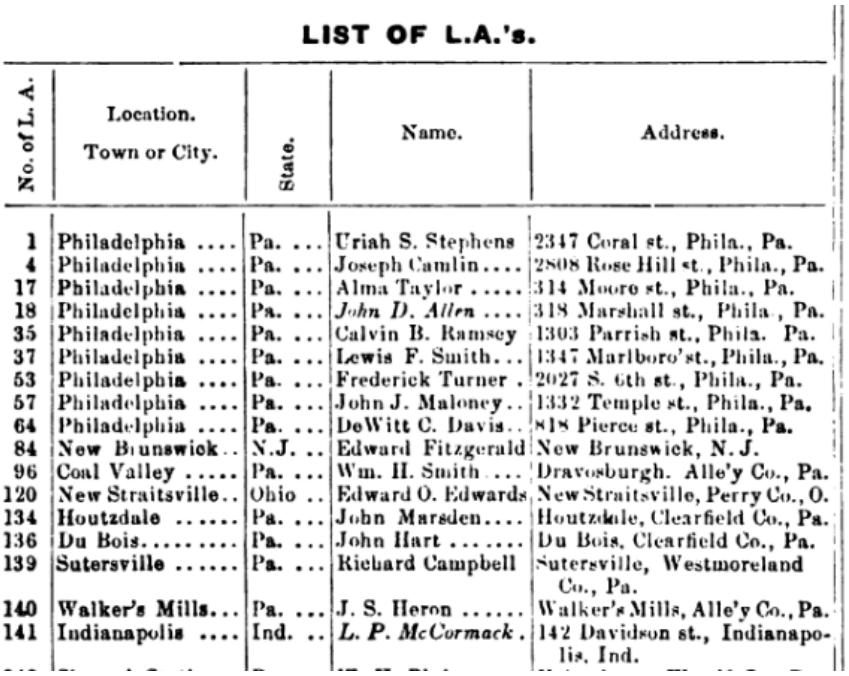
Notes: Produced using Costa and coauthors 10% sample

typically including full names and street addresses. Figure X reproduces a representative page from 1886 showing assembly officers across multiple Pennsylvania cities with complete identifying information. By extracting these lists systematically, I recovered detailed records for hundreds of named Knights of Labor activists with precise geographic locations. The inclusion of full names and addresses enables probabilistic linking to U.S. Census records (1860-1900) and Union Army datasets, allowing me to reconstruct each activist's nativity, occupation, age, family composition, literacy, and military service history. This individual-level dataset permits direct examination of whether German-born workers—particularly those in craft occupations—were disproportionately represented among Knights organizers, and whether intergenerational occupational persistence in craft trades correlates with union leadership. To my knowledge, this represents the first systematic individual-level analysis of Knights of Labor membership composition using linked historical records.

3.4 US Population Census

Statistics at the county level for 1860 (Ruggles et al., 2025, 2024), including the share of German and total migrants, the share of manufacturing workers, and the literacy rate, are all taken from the full-count Census provided by IPUMS. To examine intergenerational occupational transmission, I construct linked father-son pairs using IPUMS's automated linking methodology across the 1860-1880 censuses, restricting the sample to male children aged 0-20 in 1860 who can be matched to their adult records in 1880. This linkage allows me to calculate occupational persistence rates-the share

FIGURE 6: EXTRACT FROM JOURNAL OF UNITED LABOR (1880)



LIST OF L.A.'s.

No. of L. A.	Location. Town or City.	State.	Name.	Address.
1	Philadelphia	Pa. ...	Uriah S. Stephens	2347 Coral st., Phila., Pa.
4	Philadelphia	Pa. ...	Joseph Camlin....	2808 Rose Hill st., Phila., Pa.
17	Philadelphia	Pa. ...	Alma Taylor	314 Moore st., Phila., Pa.
18	Philadelphia	Pa. ...	*John D. Allen*	318 Marshall st., Phila., Pa.
35	Philadelphia	Pa. ...	Calvin B. Ramsey	1303 Parrish st., Phila. Pa.
37	Philadelphia	Pa. ...	Lewis F. Smith...	1347 Marlboro'st., Phila., Pa.
53	Philadelphia	Pa. ...	Frederick Turner .	2027 S. 6th st., Phila., Pa.
57	Philadelphia	Pa. ...	John J. Maloney..	1332 Temple st., Phila., Pa.
64	Philadelphia	Pa. ...	DeWitt C. Davis..	818 Pierce st., Phila., Pa.
84	New Brunswick..	N.J. ..	Edward Fitzgerald	New Brunswick, N. J.
96	Coal Valley	Pa. ...	Wm. H. Smith	Dravosburgh. Alle'y Co., Pa.
120	New Straitsville..	Ohio ..	Edward O. Edwards	New Straitsville, Perry Co., O.
134	Houtzdale	Pa. ...	John Marsden....	Houtzdale, Clearfield Co., Pa.
136	Du Bois.....	Pa. ...	John Hart	Du Bois, Clearfield Co., Pa.
139	Sutersville	Pa. ...	Richard Campbell	Sutersville, Westmoreland Co., Pa.
140	Walker's Mills...	Pa. ...	J. S. Heron	Walker's Mills, Alle'y Co., Pa.
141	Indianapolis	Ind. ..	*L. P. McCormack* .	142 Davidson st., Indianapolis, Ind.

Notes: Page from the Knights of Labor Newspaper

of sons who work in the same occupation or industry as their fathers-separately for German-born and native-born populations. Additionally, I use the full-count census data from 1860, 1870, and 1880 to construct detailed descriptive statistics on the occupational distribution of German-born workers in the United States during this period, documenting their overrepresentation in craft and artisan occupations relative to other immigrant groups and native-born workers.

4 Empirical Strategy

4.1 County-level Analysis

The main goal is to estimate the causal effect of the presence of 48ers on the rise of the Labor Movement in 19th century US. To fix ideas, I start with a OLS regression with a rich set of controls. This can be modelled in the following way:

$$Y_{i,1869-1899} = \alpha + \beta 48er_{i,1860} + \gamma X_{i,1860} + \epsilon_i \tag{1}$$

Where i denotes a county, Y_i is the outcome of interest, like the number of KoL unions present in that county in the second half of the 19th century. $48er_i$ indicates the presence of German Revolutionaries in a given county. X_i is a rich set of controls, including the share of Foreigners, the log of total initial population, the employment share in manufacturing, democrat vote share in 1852, access to railway, distance to the railway, proximity to the coast, to the nearest river, average

temperature, and average precipitation.

4.2 Union Army Assignment

To estimate the reduced-form relationship between exposure to 48ers and subsequent labor union formation, we implement the following specification:

$$Y_{c,1870-1890} = \alpha + \beta \cdot \text{48er}_c + \gamma X_c + \delta_s + \varepsilon_c \tag{2}$$

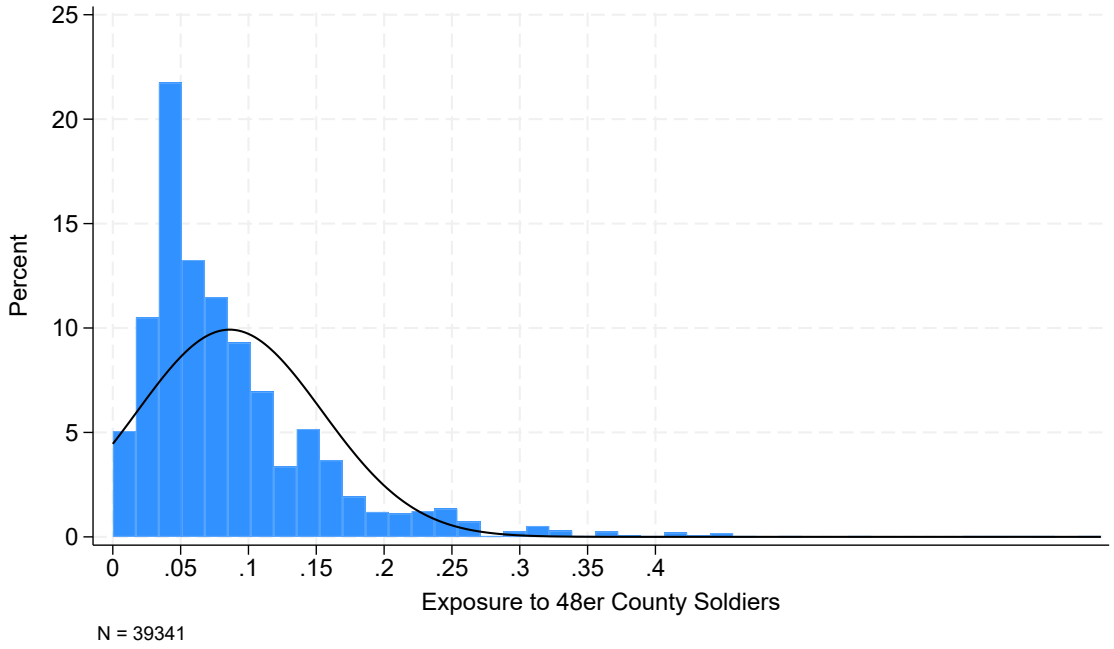
where $Y_{c,1870-1890}$ represents various measures of labor union organization in county c during the post-war period, including the number of unions established, union membership as a percentage of industrial workers, and the incidence of strikes. 48er_c is our measure of county c's exposure to 48er ideology through Civil War regiment composition, calculated as the share of soldiers from county c who served in regiments alongside men from 48er counties. X_c is a vector of pre-war county characteristics including manufacturing intensity, ethnic composition, urbanization rates, railroad access, and 1860 Republican vote share. State fixed effects δ_s account for state-level differences in labor regulations and industrial development. Standard errors are clustered at the state level to account for spatial correlation in union activities.

To measure exposure to 48er ideology through regiment assignment, I construct a two-step measure capturing both the intensity of 48er presence and each county's exposure to this ideology. First, I define regiment-level 48er intensity as the proportion of soldiers from 48er counties in each regiment r: $\text{Regiment_48er_Intensity}_r = \frac{\text{Soldiers from 48er counties in regiment } r}{\text{Total soldiers in regiment } r}$. Second, I calculate county-level 48er exposure as the weighted average of these intensities across all regiments where a county's soldiers served: $\text{FortyEighter_Exposure}_c = \sum_r \left[\frac{\text{Soldiers from county } c \text{ in regiment } r}{\text{Total soldiers from county } c} \cdot \text{Regiment_48er_Intensity}_r \right]$. This measure represents the expected 48er exposure for a typical soldier from county c, capturing the mechanism through which ideological transmission could occur. I then estimate the relationship between 48er exposure and post-war labor organization using: $Y_{c,1870-1890} = \alpha + \beta \cdot \text{FortyEighter_Exposure}_c + \gamma X_c + \delta_s + \varepsilon_c$, where $Y_{c,1870-1890}$ represents labor union formation outcomes, X_c is a vector of pre-war county characteristics, and δ_s represents state fixed effects.

The coefficient β captures the reduced-form effect of 48er exposure through military service on subsequent unionization patterns. Under the identifying assumption that assignment to regiments with varying degrees of 48er representation was conditionally random after controlling for observable pre-war characteristics, β can be interpreted as the causal effect of exposure to 48er ideology. Following Costa and Kahn (2003) and Lee (2014), I argue that the bureaucratic processes governing regiment formation, particularly after the initial volunteer period, created quasi-random variation in soldiers' exposure to comrades from 48er counties. The reduced-form specification avoids potential measurement errors associated with directly quantifying ideological transmission, instead focusing on the downstream effects of exposure on tangible organizing outcomes. This approach aligns with Acemoglu et al. (2011) and Sequeira et al. (2020), who similarly employ reduced-form specifications to estimate the persistent effects of historical treatments on long-run outcomes.

To further strengthen the identification strategy, I implement a shift-share approach that lever-

FIGURE 7: EXPOSURE TO 48ER COUNTIES



ages the conditional random assignment of soldiers to regiments. Following the methodological innovations of Borusyak et al. (2022) and Adão et al. (2019), I construct an instrument that combines the pre-determined spatial distribution of county draft quotas with the plausibly exogenous timing of 48er enlistment. Specifically, I compute $\text{Expected_Exposure}_c = \sum_r (\text{Quota_share}_{cr} \times \text{48er_presence_in_other_counties}_r)$, where Quota_share_{cr} represents the administrative allocation of county c's draft quota to regiment r based on state-level policies rather than actual enlistment patterns. This approach isolates variation in 48er exposure stemming from administrative draft allocation rules rather than potentially endogenous enlistment decisions, addressing concerns about selection into military service and specific regiments.

5 Results

5.1 *Fourty-Eighters* and the Start of Labor Unions

Table 2 presents our baseline estimates of the relationship between Forty-Eighter presence and labor organization. The coefficient on Forty-Eighter settlement remains positive and statistically significant at the 1% level across all specifications, with point estimates ranging from 22.10 to 32.19 additional unions per county. The economic magnitude is substantial, representing approximately 6.5 times the sample mean of 4.91 unions per county. The stability of coefficients to the sequential inclusion of population and industrial controls (columns 3-4), geographic characteristics (column

5), and state fixed effects (columns 2, 4, and 6) suggests that selection on observables is unlikely to drive our results. The robustness of these findings persists across multiple sensitivity checks, including alternative *Forty-Eighter* county definitions, subsample analyses excluding major urban centers, and temporal disaggregation of union formation. Moreover, the Oster's delta of 1.59 suggests that selection on unobservables would need to be 1.59 times as important as selection on observables to explain away the effect, providing further confidence in our estimates.

Furthermore, Table 3 looks at the effects of the revolutionaries on the formation of the some of the first KoL unions (1869-1880). As we can see from the results, (i) the effect holds for this period before the "boom" of unions and (ii) this implies that the effects of revolutionaries started early but magnified over time.

5.2 Inter-generational Transmission

A potential mechanism linking German immigrants to Knights of Labor organizing is intergenerational occupational transmission, which facilitated the reproduction of not only craft skills but also collective action norms across generations. Table 3 demonstrates that occupational persistence rates among German-born workers were particularly elevated in skilled craft categories. While the overall persistence rate for German-born children was 40.64%, comparable to the general population's 44.04%, skilled craftsmen exhibited substantially higher persistence at 35.27% compared to 30.30% in the general population-a difference of 4.97 percentage points. This pattern is even more pronounced among semi-skilled operatives, where German-born children showed 39.07% persistence compared to 34.54% in the general population. These elevated persistence rates in skilled occupations suggest that German immigrant families successfully transmitted craft-specific human capital to the next generation, creating continuity in occupational identity and workshop-based social networks that were central to labor organizing.

The intergenerational transmission of craft occupations among Germans likely extended beyond technical skills to include norms of worker solidarity and collective organization inherited from European guild traditions. German artisans in the mid-19th century came from a cultural context where guilds (Zuenfte) had historically regulated trades, protected craftsmen's interests, and fostered occupational identity and mutual aid. When German craftsmen successfully passed their trades to their sonsâas evidenced by the 35% persistence rate in skilled crafts-they also transmitted exposure to these organizational traditions and experiences with collective action. Given that first-generation German immigrants brought direct experience with European labor movements and guild structures, the high occupational persistence rates suggest a channel through which these cultural practices and collective action repertoires could be reproduced in the American context. This intergenerational continuity in both occupation and cultural orientation would have positioned second-generation German craftsmen as natural participants in the Knights of Labor's organizing efforts during the 1880s, drawing on inherited craft pride and solidarity norms alongside their technical skills.

TABLE 4: SKILL MAINTENANCE ACROSS GENERATIONS: GERMAN-BORN VS. GENERAL POPULATION (1860-1880)

Father's Skill Category	Persistence Rate (%)		Difference (pp)	Total Pairs
	General Population	German-Born		
Overall	**44.04**	**40.64**	**-3.40**	**1,564,521**
White collar	52.76	55.88	+3.12	155,930
Farmers	51.50	48.80	-2.69	858,242
Skilled craftsman	**30.30**	**35.27**	**+4.97**	**261,915**
Semi-skilled operative	34.54	39.07	+4.54	102,970
Service workers	8.97	15.03	+6.06	12,013
Farm laborers	31.06	28.75	-2.31	39,422
Unskilled labor	24.41	18.34	-6.07	133,791
Other/Unknown	5.19	0.00	-5.19	238

NOTES: THIS TABLE SHOWS THE PERCENTAGE OF CHILDREN WHO REMAIN IN THE SAME SKILL CATEGORY AS THEIR FATHERS. PERSISTENCE RATE IS CALCULATED AS: (NUMBER OF CHILDREN IN SAME SKILL CATEGORY / TOTAL PAIRS) × 100. SAMPLE INCLUDES MALE CHILDREN AGED 0-20 IN 1860, LINKED TO THEIR ADULT RECORDS IN 1880.

5.3 Robustness Checks

Distinguishing Political from General Migration: A potential concern is that the Forty-Eighter effect merely captures the influence of general German migration rather than the specific impact of political revolutionaries. To address this, I control for county-level shares of different immigrant groups using quantile regression (Table [X]). The Forty-Eighter exposure coefficient remains stable and significant (7.30-7.70, $p<0.01$) across specifications. Notably, the German population share shows no significant relationship with union formation (coefficient = 1.51, $p>0.10$), confirming that it is not German migration per se but rather the specific ideological and organizational capital of the Forty-Eighters that drives unionization. Similarly, the English-speaking immigrant share has no effect, while the Irish share shows a positive association-consistent with historical accounts of Irish workers' labor activism but orthogonal to my identification strategy since there is no ex-ante reason to expect correlation between Irish settlement and Forty-Eighter exposure through military service. These results reinforce that the effect operates through the transmission of specific political ideologies and organizing knowledge rather than through general ethnic or cultural channels.

Early and Late Unions: To examine whether the Forty-Eighters' influence evolved over time, I split the sample into early (1869-1880) and late (1881-1899) union formation periods. The effect remains statistically significant in both subperiods, with coefficients of 3.64 ($p<0.05$) for early unions and 32.4 ($p<0.01$) for late unions, suggesting that the revolutionaries' initial organizing efforts created a foundation that amplified over time as the labor movement gained momentum.

Count Model Regression: Since the dependent variable represents count data with overdispersion (variance exceeding the mean), I re-estimate the main specification using a negative binomial regression model. The Forty-Eighter coefficient remains highly significant, confirming that the re-

sults are not driven by the linear specification.

Exclusion of Counties: To ensure the results are not driven by major industrial centers known for extensive unionization, I exclude counties containing Philadelphia, New York City, Chicago, and other major cities where both Forty-Eighters and unions concentrated.

Windsorized Variable: To address concerns about outliers driving the results, I windsorize the number of unions at the 95th percentile, capping extreme values while preserving the overall distribution. The Forty-Eighter effect remains robust, confirming that the relationship is not an artifact of a few counties with exceptionally high union density but reflects a broad pattern across the sample.

5.4 Diffusion of Ideas in the Union Army

Now I proceed to discuss the results of my quasi-experimental setting. Table 5 presents evidence of a strong, positive relationship between exposure to 48er counties through Union Army service and subsequent Knights of Labor union density. The coefficient on 48er exposure remains highly significant ($p < 0.01$) across all specifications, though it decreases from 35.49 to 16.09 when accounting for population size and state fixed effects, suggesting that some of the initial relationship was attributable to these factors. The easiest interpretation of the coefficient is that moving from the 25th percentile to the 75th percentile of exposure results in 1.1 additional Labor Union, or about 35% of the mean number of unions. This is completely excluding the part of the variation explained by 48ers themselves. Therefore, this is robust evidence for ideological transmission through military service. Not only were the 48ers themselves important, but also the ideas that they brought with them.

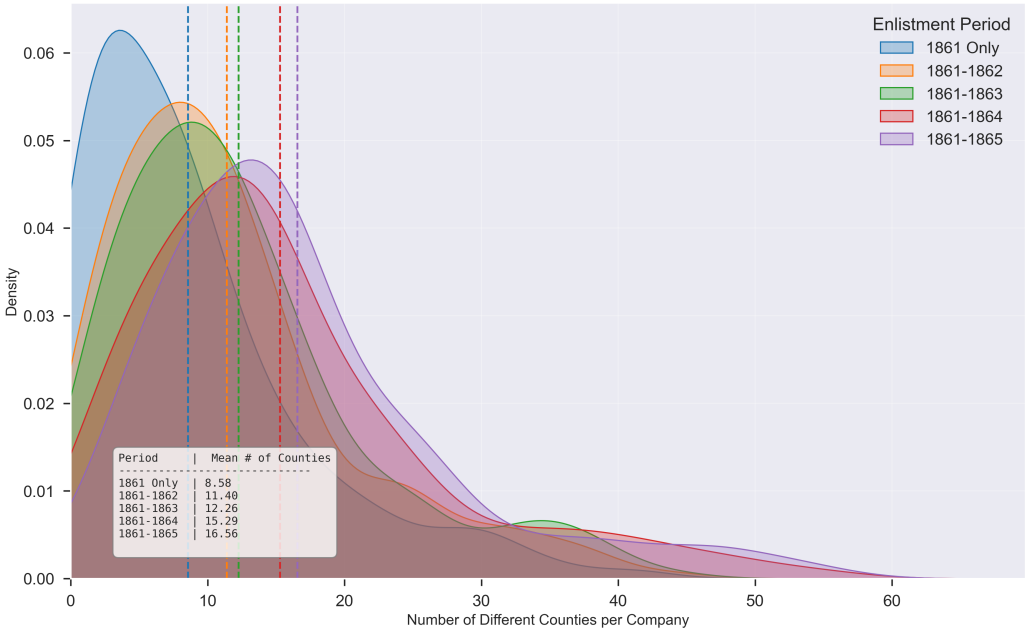
TABLE 5: 48ER COUNTY EXPOSURE AND UNION DENSITY

	Union Density		
	(1)	(2)	(3)
48er Exposure	35.49***	18.74***	16.09***
	(2.36)	(1.79)	(1.75)
Log Pop 1860		9.40***	7.53***
		(0.21)	(0.23)
State FE	N	N	Y
N Obs	21,803	21,562	21,562
R^2	0.03	0.25	0.39

Notes: Dependent variable is number of Knights of Labor Unions. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Skill categories are defined based on OCC1950 occupation codes (1950 basis). **White collar** includes professional and technical workers (codes 0–99), managers and proprietors (200–290), clerical workers (300–390), and sales workers (400–490). **Farmers** includes farmers and farm managers

FIGURE 8: EVOLUTION OF AVERAGE NUMBER OF COUNTIES BY COMPANY



This graph shows how the diversity of soldiers' home counties within companies changed as the war progressed.

(100–199). **Skilled craftsman** includes all craftsmen, foremen, and kindred workers (500–594), such as bakers, blacksmiths, machinists, carpenters, shoemakers, tailors, and other skilled craft occupations. **Semi-skilled operative** includes operatives and kindred workers (600–690), typically factory and industrial workers. **Service workers** includes service workers (700–790), excluding private household workers. **Farm laborers** includes farm laborers and foremen (810–840). **Unskilled labor** includes laborers, except farm and mine (910–970). All categories exclude non-occupational responses (codes 980–995).

6 Impact of Unions on Other Outcomes

To estimate these dynamic effects, we implement a staggered difference-in-differences design that exploits the fact that Knights of Labor unions were established in different counties at different points in time. Our data observe outcomes in the decennial censuses of 1850, 1860, 1870, 1880, and 1900 (the 1890 census was lost in a fire), allowing us to compare counties before and after union entry while using not-yet-treated counties as contemporaneous controls. Formally, we estimate variants of the event-study specification:

$$Y_{ct} = \alpha_c + \lambda_t + \sum_{k \neq -1} \beta_k \, \mathbf{1}\{t - T_c = k\} + X_{ct}\gamma + \varepsilon_{ct},$$

where Y_{ct} is the outcome (e.g., child labor rates) in county c and year t; α_c and λ_t are county and census-year fixed effects; T_c is the first year in which a Knights of Labor union appears in

TABLE 6: OLS RESULTS

	Dep Variable: Number of KoL Unions					
	(1)	(2)	(3)	(4)	(5)	(6)
48ers	32.19***	30.21***	29.28***	26.59***	23.89***	22.10***
	(8.29)	(7.96)	(7.54)	(6.95)	(7.24)	(6.62)
Pop+Ind Control	N	N	Y	Y	Y	Y
Geo Controls	N	N	N	N	Y	Y
State FE	N	Y	N	Y	N	Y
N Obs	2,068	2,068	2,068	2,068	1,040	1,040
R^2	0.11	0.18	0.12	0.20	0.29	0.34

Notes: 48er county defined as all the counties with presence of 48ers between 1850 and 1880. Robust to many other definitions of 48er county. Robust st. errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust to exclusion of biggest cities, robust to inclusion of 1860 rail access and 1860 log pop. density (1.350 counties). Mean dependent variable: 4.91. Oster's Delta: 1.59 (rmax=0.45)

county c; and the event-time indicators measure outcomes k periods before or after union entry (omitting $k = -1$ as the reference period). This framework leverages the staggered timing of treatment to recover dynamic treatment effects under the standard parallel trends assumption, and the coefficients β_k trace the evolution of outcomes both prior to union formation and in the decades that followed.

Our empirical analysis reveals that Knights of Labor unions had heterogeneous but substantively important effects on labor markets and political development. Figure X presents event study estimates of union entry effects on child labor rates for children aged 14-16, using a staggered difference-in-differences design that exploits variation in the timing of union formation across counties. The results show meaningful reductions in child labor for counties where unions formed in the 1870s-approximately 2-3 percentage points-consistent with unions successfully advocating for child labor restrictions and family wage norms. These effects extend to younger children as well: we observe similar patterns for children aged 10-13, and particularly pronounced reductions in child employment in dangerous occupations such as mining, manufacturing, and construction. However, the effects are weaker or even reversed for later treatment cohorts (1880s-1890s), suggesting either diminishing union effectiveness during the Knights' decline or that later unions formed in locations already experiencing different labor market trends. Even accounting for this heterogeneity, the pattern of lower child labor in early-treated counties supports the interpretation that unions, when organizationally robust, could influence family labor supply decisions in line with their stated goals.

Perhaps more striking than the immediate labor market effects is the Knights of Labor's apparent long-run influence on local political culture. Table X shows that counties with any Knights of Labor presenceâregardless of when unions formed or how long they persistedâvoted at significantly higher rates for Socialist Party candidate Eugene V. Debs in 1912. The estimated effect of 0.3 percentage points (approximately 15% of Debs's mean vote share) is robust to controlling for 1860 county characteristics including log population and foreign-born share, and persists even two

TABLE 7: OLS RESULTS EARLY UNIONS

Dep Variable: Number of KoL Unions 1869-1880						
	(1)	(2)	(3)	(4)	(5)	(6)
48ers	3.83**	3.62**	3.64**	3.27*	2.84*	2.62*
	(1.69)	(1.62)	(1.66)	(1.54)	(1.62)	(1.48)
Pop+Ind Control	N	N	Y	Y	Y	Y
Geo Controls	N	N	N	N	Y	Y
State FE	N	Y	N	Y	N	Y
N Obs	2,068	2,068	2,068	2,068	1,040	1,040
R^2	0.04	0.15	0.05	0.16	0.10	0.20

Notes: 48er county defined as all the counties with presence of 48ers between 1850 and 1880. Robust to many other definitions of 48er county. Robust st. errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust to exclusion of biggest cities, robust to inclusion of 1860 rail access and 1860 log pop. density (1.350 counties).

decades after the Knights' organizational collapse. This political legacy suggests that union organizing did more than temporarily alter wages or working conditions; it fundamentally changed how communities understood labor relations and political economy. The combination of contemporaneous reductions in child labor-particularly for younger children and those in dangerous occupations-and persistent increases in socialist voting indicates that the Knights of Labor succeeded in their broader project of promoting alternative visions of industrial society, even if their organizational form proved unsustainable. The robustness of the political effects to controls for initial population size and immigrant composition suggests that union presence, rather than preexisting demographic characteristics, drove the observed political realignment.

TABLE 8: OLS RESULTS LATE UNIONS

Dep Variable: Number of KoL Unions 1881-1899						
	(1)	(2)	(3)	(4)	(5)	(6)
48ers	35.3***	33.7***	32.4***	30.1***	25.42***	24.3***
	(10.18)	(10.01)	(9.44)	(9.01)	(7.94)	(7.60)
Pop+Ind Control	N	N	Y	Y	Y	Y
Geo Controls	N	N	N	N	Y	Y
State FE	N	Y	N	Y	N	Y
N Obs	2,068	2,068	2,068	2,068	1,040	1,040
R^2	0.12	0.19	0.13	0.21	0.24	0.29

Notes: 48er county defined as all the counties with presence of 48ers between 1850 and 1880. Robust to many other definitions of 48er county. Robust st. errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust to exclusion of biggest cities, robust to inclusion of 1860 rail access and 1860 log pop. density (1.350 counties).

7 Discussion and Conclusion

Starting in the middle of the 19th century, the US experienced the migration of hundreds of politically active migrants from Europe. These migrants acted as ideological bridges between the continents and helped establish similar institutions in the US and they had in Europe. This paper provides empirical evidence for the effect of early ideologized European migrants on the start of the Labor Movement in the 19th century US. Counties that received these migrants developed more unions, both at the beginning and the end of the Knights of Labor Movement. This highlights the vertical diffusion of ideology and the import of ideology across the Atlantic.

This paper provides evidence on how ideologically-motivated migrants can catalyze institutional change in their receiving communities. By examining the case of German *Forty-Eighters* in the United States, I show that politically engaged immigrants can significantly influence local labor organization and workers' collective action. Our findings suggest that these educated, politically active migrants served as both knowledge transmitters and organizers, helping establish and strengthen labor unions in their settlement areas. These results highlight how selective migration can transfer not just human capital, but also political and organizational capital that affects economic outcomes through institutional change.

TABLE 9: OCCUPATIONAL DISTRIBUTION IN 1880: GERMANS VS. IRISH

Occupation Category	Germans		Irish		Overrepresentation	
	%	Non-G %	%	Non-I %	German Ratio	Irish Ratio
Craftsmen/Artisans	**20.06**	**9.08**	11.68	9.60	**2.21**	1.22
Operatives	16.19	13.33	20.94	13.03	1.21	**1.61**
Managers/Proprietors	9.57	3.98	5.29	4.24	**2.41**	1.25
Service Workers	8.42	9.77	17.97	9.18	0.86	**1.96**
Laborers (unskilled)	11.89	12.29	**25.49**	**11.44**	0.97	**2.23**
Farmers & Farm Managers	22.28	25.09	11.24	25.77	0.89	0.44
Farm Laborers	5.15	18.60	2.98	18.73	0.28	0.16

Notes: Percentages show share of each ethnic group with valid occupations in each category. "Non-G %" and "Non-I %" refer to non-Germans and non-Irish, respectively. Overrepresentation ratios above 1.0 indicate the ethnic group is overrepresented in that occupation relative to the comparison group. Bold values highlight key findings: Germans' concentration in skilled crafts and management, versus Irish concentration in unskilled labor and service work. Sample includes full-count US census data from 1880.

TABLE 10: EXPOSURE TO 48ERS THEMSELVES

	Number of Unions		
	(1)	(2)	(3)
48er Exposure	19.16***	10.07**	10.24**
	(2.74)	(4.16)	(4.40)
Log Pop 1860		11.38***	13.11***
		(2.95)	(4.08)
State FE	N	N	Y
N Obs	1,000	977	977
R^2	0.05	0.17	0.21

Note: Results exclude the 48er counties and are robust to the exclusion of 0-exposure counties. Robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

TABLE 11: EXPOSURE TO 48ER COUNTIES

	Number of Unions		
	(1)	(2)	(3)
48er Exposure	25.29***	10.45***	16.76***
	(2.35)	(1.83)	(2.12)
Log Pop 1860		9.40***	7.53***
		(0.21)	(0.23)
State FE	N	N	Y
N Obs	1,160	1,160	1,160
R^2	0.01	0.26	0.34

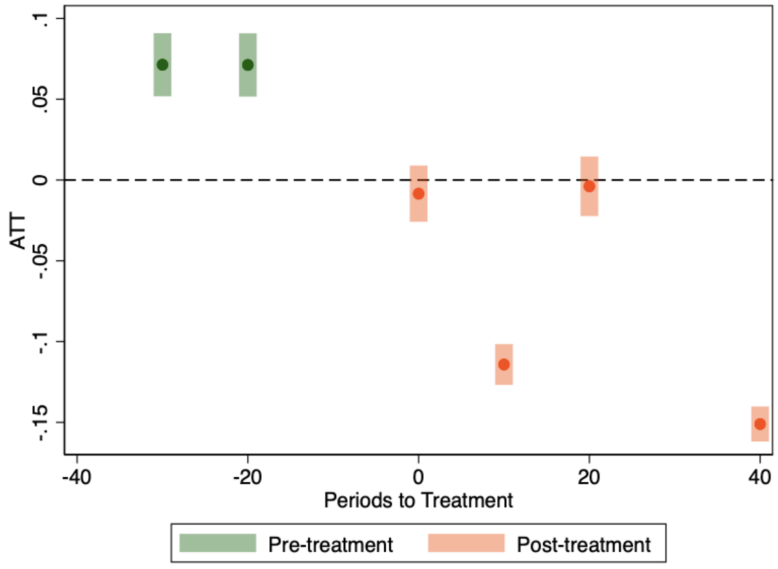
Note: Results exclude the 48er counties and are robust to the exclusion of 0 exposure counties. Interpretation: Moving from 25th percentile to 75th percentile of exposure results in 1.1 additional Labor Union, or about 25% of the mean. Robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

TABLE 12: SOCIALIST PARTY VOTE (EUGENE DEBS 1912 PRESIDENTIAL NOMINEE)

	(1)	(2)	(3)	(4)
Union Presence	0.508** (0.244)	0.315** (0.124)	0.293** (0.124)	0.292** (0.124)
State Fixed Effects	Yes	Yes	Yes	Yes
Observations	1,181	1,181	1,181	1,181
R-squared	0.441	0.443	0.450	0.452

Notes: This table reports OLS regressions of socialist vote share (percentage) in 1912 on a union dummy variable. The union dummy equals 1 if the county had at least one Knights of Labor union branch, and 0 otherwise. Robust standard errors (HC3) are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

FIGURE 9: CHILD LABOR 10-13 YEARS OLD



References

Acemoglu, D., Cantoni, D., Johnson, S., and Robinson, J. A. (2011). The consequences of radical reform: The French Revolution. *American Economic Review*, 101(7):3286–3307.

Acemoglu, D., Hassan, T. A., and Tahoun, A. (2018). The power of the street: Evidence from egypt's arab spring. *The Review of Financial Studies*, 31(1):1–42.

Adão, R., Kolésar, M., and Morales, E. (2019). Shift-share designs: Theory and inference. *The Quarterly Journal of Economics*, 134(4):1949–2010.

Baron, F. (2012). *The Revolution of 1848: A Social History*. Cornell University Press.

Beerli, A., Ruffner, J., Siegenthaler, M., and Peri, G. (2021). The abolition of immigration restrictions and the performance of firms and workers: Evidence from switzerland. *American Economic Review*, 111(3):976–1012.

Borusyak, K., Hull, P., and Jaravel, X. (2022). Quasi-experimental shift-share research designs. *Review of Economic Studies*, 89(1):181–213.

Bursztyn, L., Cantoni, D., Yang, D. Y., Yuchtman, N., and Zhang, Y. J. (2021). Persistent political engagement: Social interactions and the dynamics of protest movements. *American Economic Review: Insights*, 3(2):233–250.

Cantoni, D., Yang, D. Y., Yuchtman, N., and Zhang, Y. J. (2019). Protests as strategic games: Experimental evidence from hong kong's antiauthoritarian movement. *The Quarterly Journal of Economics*, 134(2):1021–1077.

Costa, D. L. (2010). Leadership and social interaction among union army soldiers. *Journal of Economic History*, 70(2):312–343.

Costa, D. L. and Kahn, M. E. (2003). Cowards and heroes: Group loyalty in the american civil war. *Quarterly Journal of Economics*, 118(2):519–548.

Costa, D. L. and Kahn, M. E. (2008). *Heroes and Cowards: The Social Face of War*. Princeton University Press.

Dippel, C. and Heblich, S. (2020). Leadership in social movements: Evidence from the "forty-eighters" in the civil war. *American Economic Review*, 110(8):2128–2167.

Dustmann, C., Schönberg, U., and Stuhler, J. (2017). Labor supply shocks, native wages, and the adjustment of local employment. *The Quarterly Journal of Economics*, 132(1):435–483.

Faust, D. G. (2008). *This Republic of Suffering: Death and the American Civil War*. Alfred A. Knopf.

Foote, S. (1974). *The Civil War: A Narrative*. Random House.

Friedman, G. (1988). *Strike in America*. Oxford University Press.

Garlock, J. (2001). *Knights of Labor Assemblies, 1869-1889*. Greenwood Press.

Geary, J. W. (1991). *We Need Men: The Union Draft in the Civil War*. Northern Illinois University Press, DeKalb.

Giuliano, P. and Tabellini, M. (2020). The seeds of ideology: Historical immigration and political preferences in the united states. Working Paper 27238, National Bureau of Economic Research.

Hess, E. J. (2017). *Civil War Soldiers*. Northern Illinois University Press, DeKalb.

Jaeger, S., Naidu, S., and Schoefer, B. (2025). Collective bargaining, unions, and the wage structure: An international perspective. Available as manuscript.

Kamphoefner, W. D. and Helbich, W. (2006). *Germans in the Civil War: The Letters They Wrote Home*. University of North Carolina Press, Chapel Hill.

Lee, C. (2014). Commitment problems in alliance formation: Military alliances in the american civil war and post-war careers. *Journal of Economic History*, 74(2):382–416.

Levine, B. (1980). In the heat of two revolutions: The forging of german-american radicalism. In Keil, H. and Jentz, J. B., editors, *German Workers in Industrial Chicago, 1850-1910*, pages 119–148. University of Illinois Press, Urbana.

Manacorda, M. and Tesei, A. (2020). Liberation technology: Mobile phones and political mobilization in africa. *Econometrica*, 88(2):533–567.

McPherson, J. M. (1988). *Battle Cry of Freedom: The Civil War Era*. Oxford University Press.

McPherson, J. M. (1997). *For Cause and Comrades: Why Men Fought in the Civil War*. Oxford University Press, New York.

Medici, C. (2023). Closing ranks: Organized labor and immigration. Job Market Paper.

Miho, A., Jarotschkin, A., and Zhuravskaya, E. (2024). Diffusion of gender norms: Evidence from stalin's ethnic deportations. *Journal of the European Economic Association*, 22(2):453–498.

Noyes, P. H. (1966). *Organization and Revolution: Working Class Associations in the German Revolutions of 1848–1849*. Princeton University Press, Princeton, NJ.

Raab, F. (1998). *The German Revolution of 1848*. Princeton University Press.

Ruggles, S., Flood, S., Sobek, M., Backman, D., Cooper, G., Rivera Drew, J. A., Richards, S., Rodgers, R., Schroeder, J., and Williams, K. C. (2025). Ipums usa: Version 16.0. *IPUMS*. Dataset.

Ruggles, S., Nelson, M. A., Sobek, M., Fitch, C. A., Goeken, R., Hacker, J. D., Roberts, E., and Warren, J. R. (2024). Ipums ancestry full count data: Version 4.0. *IPUMS*. Dataset.

Sequeira, S., Nunn, N., and Qian, N. (2020). Immigrants and the making of America. *Review of Economic Studies*, 87(1):382–419.

Sezer, A. H. (2023). Convicts and comrades: Coerced labor's impact on early labor unions. Job Market Paper.

Voss, K. (1993). *The Making of American Exceptionalism*. Cornell University Press.

Waldinger, F. (2023). Forced migration, transfer of knowledge, and innovation. *The Quarterly Journal of Economics*, 138(4):2547–2599.

Weigley, R. F. (2004). *A Great Civil War: A Military and Political History, 1861-1865*. Indiana University Press.

Wiley, B. I. (1952). *The Life of Billy Yank: The Common Soldier of the Union*. Indiana University Press.

Wittke, C. F. (1952). *Refugees of Revolution: The German Forty-Eighters in America*. University of Pennsylvania Press.

Zucker, A. E. (1950). *The Forty-Eighters: Political Refugees of the German Revolution of 1848*. Columbia University Press.

Appendix

A Appendix Figures and Tables

	Number of Unions		
	(1)	(2)	(3)
48er Exposure	7.70***	7.53***	7.30**
	(1.12)	(1.07)	(1.04)
German Share	1.51		
	(5.13)		
English Share		30.52	
		(18.51)	
Irish Share			48.33***
			(8.02)
Full Controls	Y	Y	Y
N Obs	1,160	1,160	1,160
Pseudo R^2	0.08	0.08	0.08

Note: Results are the results of a quantile (median) regression. Robust standard errors in parentheses. *** p $<$ 0.01, ** p $<$ 0.05, * p $<$ 0.1

B Appendix Historical Events

The period from 1848 to 1850 represents the first mass-scale, independent labor movement in the German states. It was a brief, explosive period of rapid organization followed by a systematic and total suppression, which in turn directly fueled the "Forty-Eighter" migration wave that is central to my research. Here is an overview of the key milestones and the legal measures that defined this era.

B.1 Spring 1848: The Spark of the "Social Revolution"

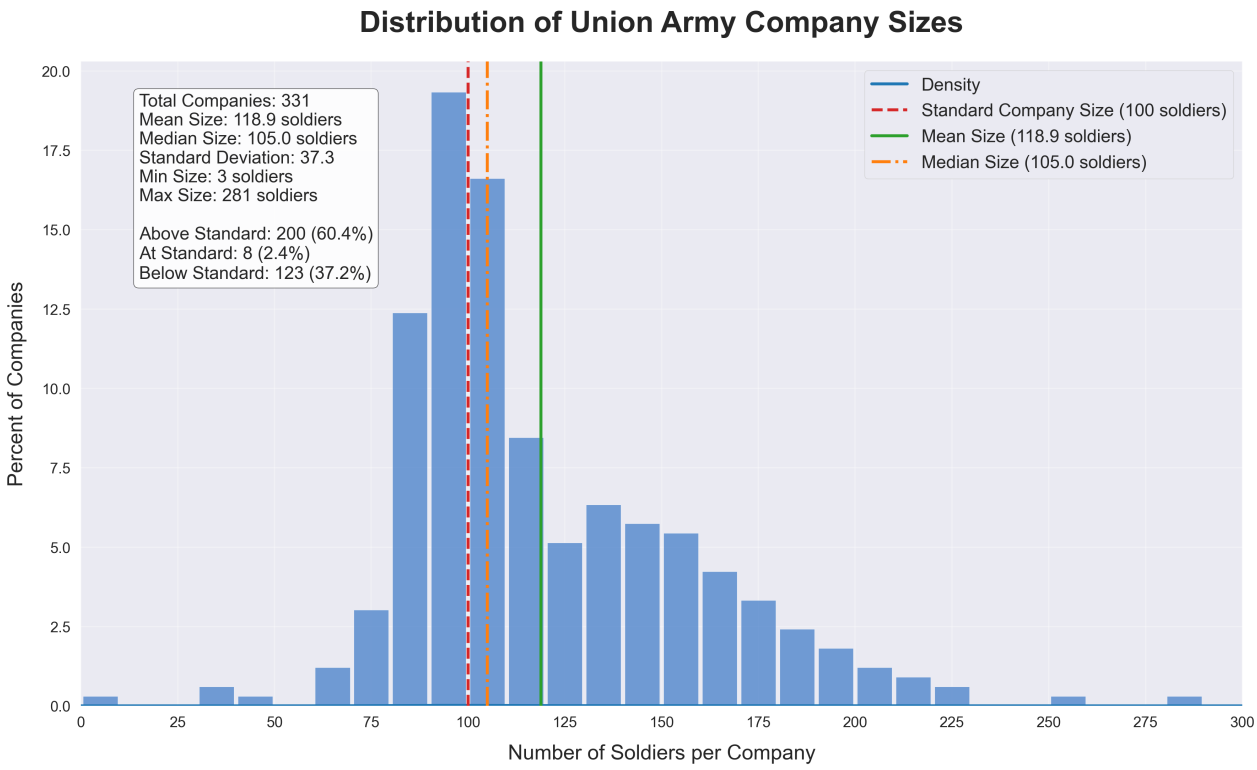
The "March Revolution" of 1848 was not a unified event. While liberal intellectuals and students gathered in assemblies to demand a constitution, freedom of the press, and a unified Germany, the violence on the barricades in cities like Berlin and Vienna was driven by a different class with different demands.

This was the "social question" that contemporaries had been fearing. The key actors were urban artisans (*Handwerker*), journeymen, and a new, small industrial working class. Their grievances were as much economic as political. They were suffering from:

- **The Artisan Crisis:** The decline of the traditional guild system, which could no longer protect them from competition.
- **Industrialization:** The rise of new factories and mass-production methods that undercut their skilled labor.
- **Famine and Poverty:** The immediate trigger of the 1845 potato famine and 1846-47 grain failures had left this population desperate.

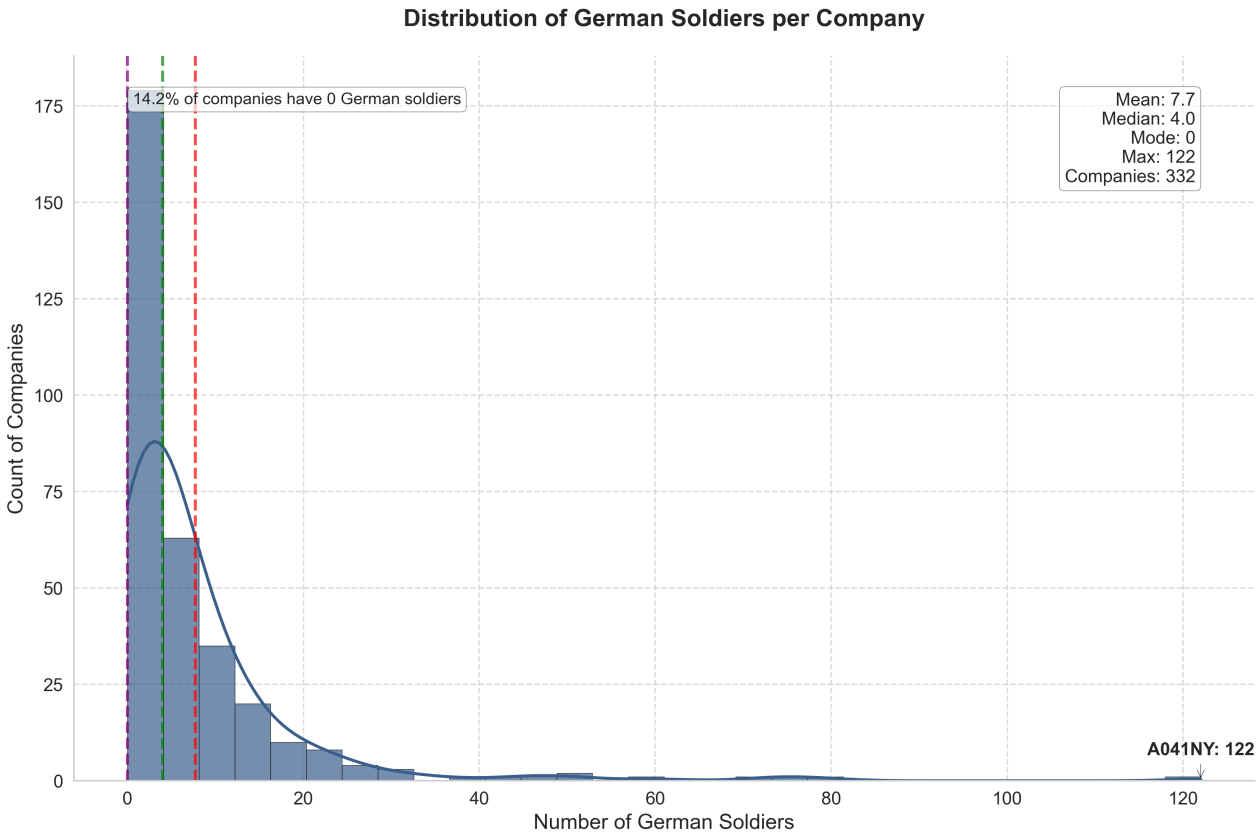
Their initial demands went beyond abstract rights. They wanted tangible economic protection: the right to organize, restrictions on new machinery, and the restoration of guild powers.

FIGURE 10: DISTRIBUTION OF UNION ARMY COMPANY SIZES



During the American Civil War, the standard Union Army company size was officially 100 men, though actual strength varied considerably due to casualties, recruitment patterns, and reorganizations.

FIGURE 11: DISTRIBUTION OF UNION ARMY COMPANY SIZES



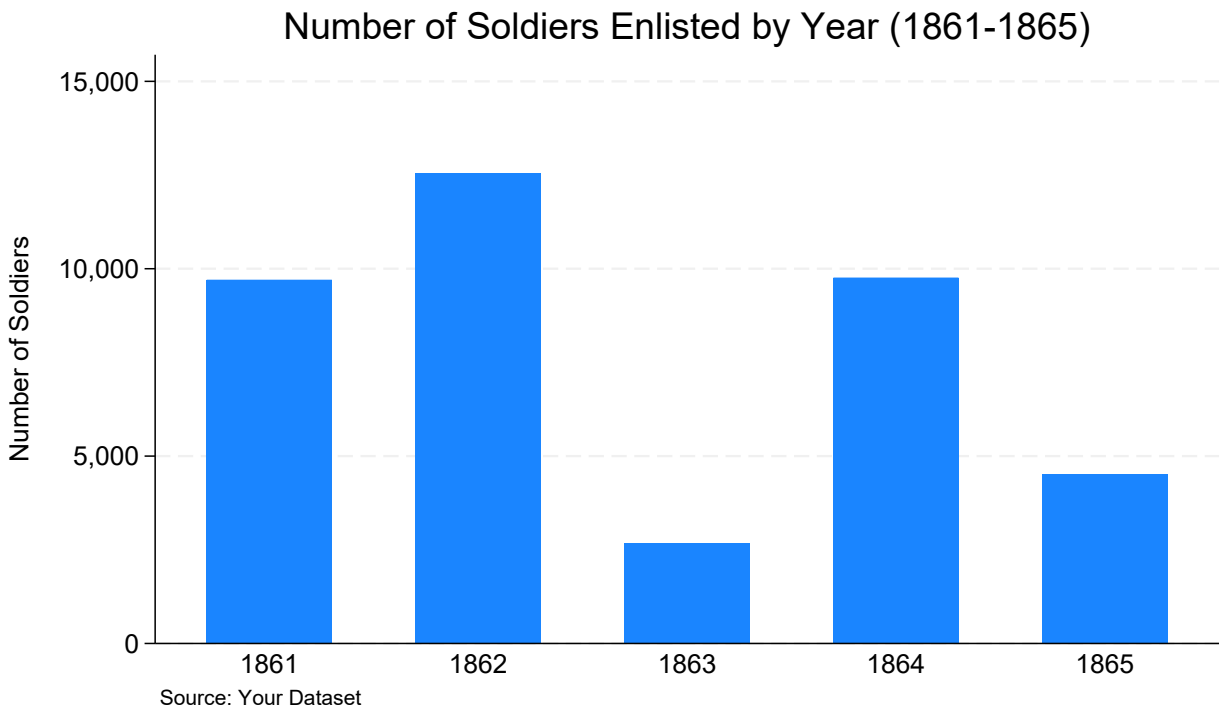


FIGURE 12: NUMBER OF SOLDIERS BY DATE OF ENLISTMENT

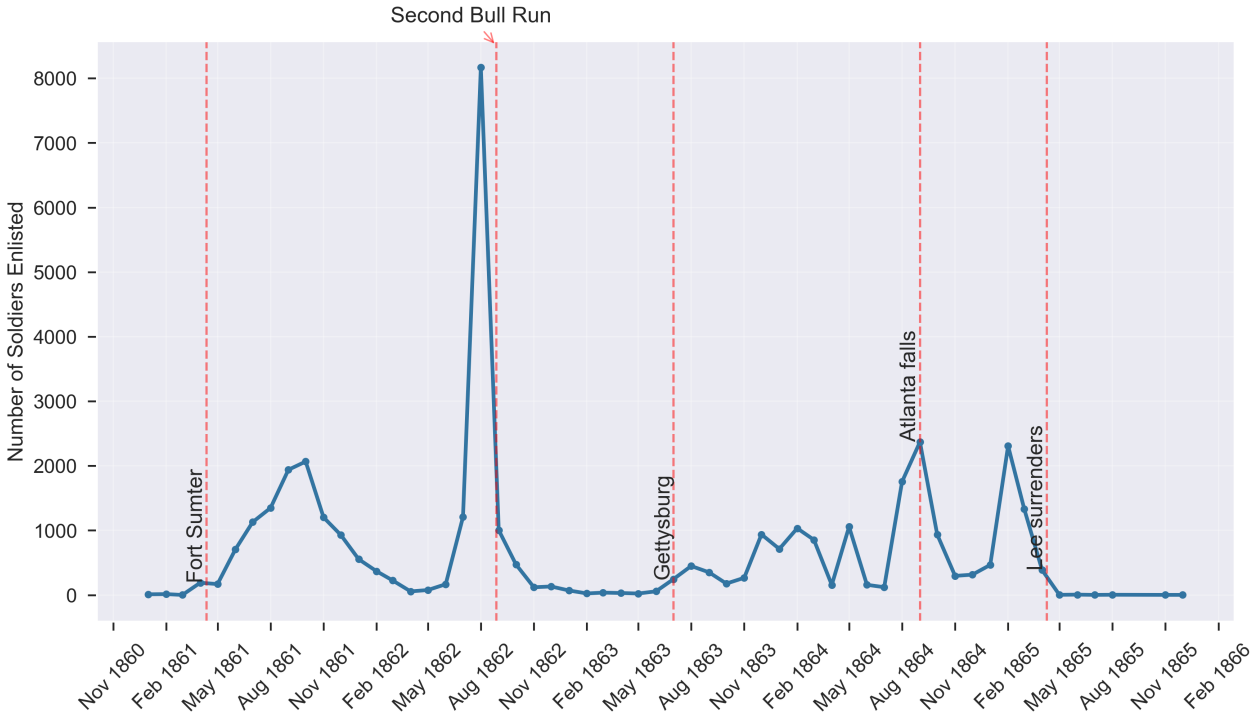


FIGURE 13: UNION ARMY ENLISTMENTS BY MONTH

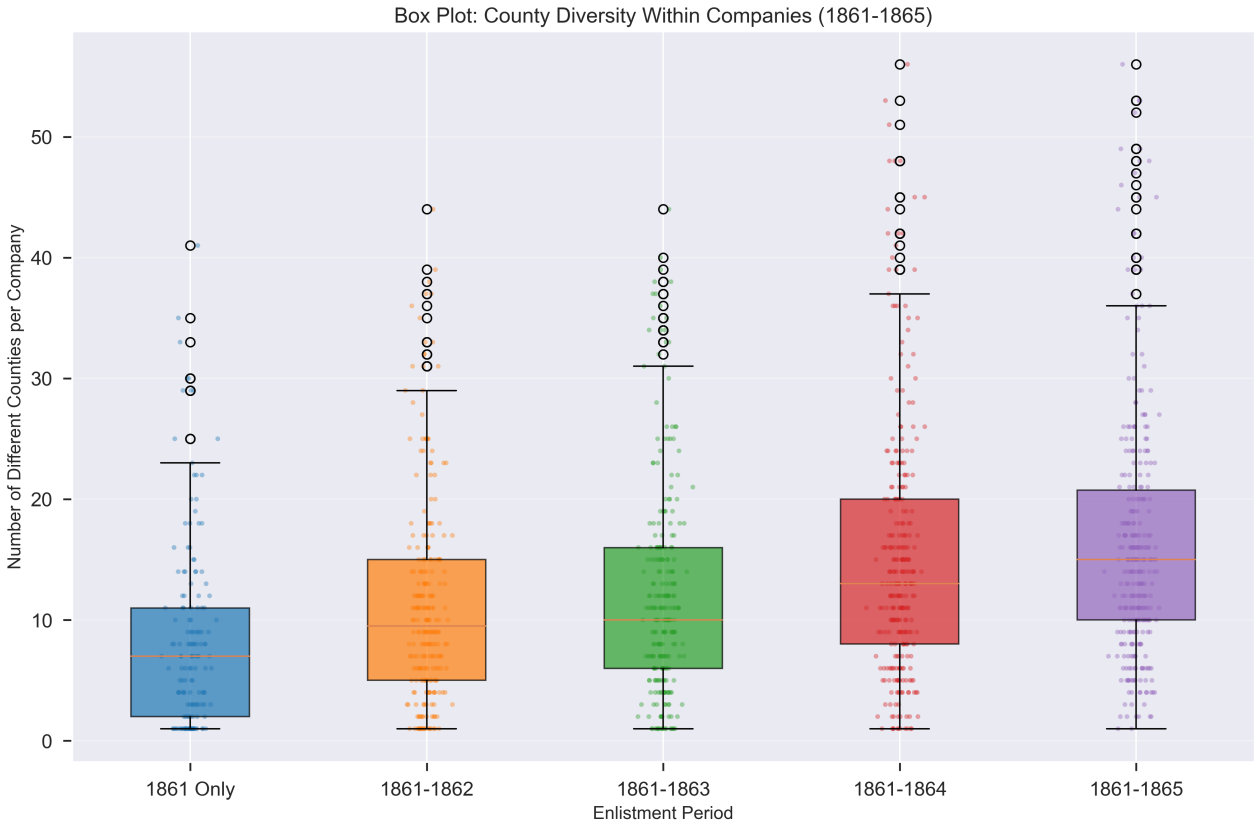


FIGURE 14: BOXPLOT OF NUMBER OF COUNTIES

TABLE A1: INDUSTRY CONCENTRATION OF GERMANS IN KNIGHTS-RELEVANT SECTORS

Industry	1860			1870			1880		
	Ger.	Non-Ger.	Ratio	Ger.	Non-Ger.	Ratio	Ger.	Non-Ger.	Ratio
Railroads and railway express	0.38	0.66	0.58	1.16	1.57	0.74	1.12	1.66	0.67
Metal mining	0.06	0.03	1.93	0.14	0.14	1.04	0.08	0.14	0.55
Coal mining	0.23	0.15	1.51	0.35	0.31	1.13	0.42	0.46	0.90
Iron and steel mills	0.57	0.44	1.30	0.80	0.54	1.47	0.93	0.68	1.36
Construction	6.11	5.31	1.15	6.30	4.50	1.40	5.28	3.76	1.41
Printing and publishing	0.48	0.47	1.00	0.50	0.45	1.12	0.56	0.64	0.87
Textile manufacturing	0.66	1.07	0.61	0.89	1.79	0.49	1.07	1.98	0.54
Furniture and fixtures	1.65	0.36	4.52	1.41	0.25	5.62	1.30	0.24	5.38
Machinery manufacturing	0.53	0.61	0.87	0.62	0.49	1.25	0.80	0.59	1.36
Fabricated metal products	0.76	0.40	1.93	0.88	0.44	2.01	0.98	0.59	1.66
Apparel manufacturing	0.32	0.26	1.21	0.30	0.20	1.48	0.54	0.37	1.46
Leather and footwear	5.63	2.33	2.41	4.21	1.57	2.69	3.66	1.43	2.56
Bakery products	1.34	0.14	9.39	1.32	0.13	10.44	1.48	0.16	9.21
Other manufacturing	9.06	5.53	1.64	9.34	5.09	1.84	9.83	5.76	1.71
All other industries	72.24	82.23	0.88	71.77	82.53	0.87	71.96	81.54	0.88

[flushleft]

Note: Percentages sum to 100% within each ethnicity-year combination. Ratio = German% / Non-German%. Ratio > 1 indicates German overrepresentation. Sample includes all employed individuals with valid IND1950 codes.

B.2 Summer 1848: The "Phenomenally Fertile Period" of Organization

With the old regimes momentarily collapsing and censorship lifted, worker organizations exploded across the German states. This was a "phenomenally fertile period" (Noyes, 1966) for the labor movement.

Milestone: The Berlin Artisans' Congress (June 1848) This congress was a pivotal early moment. Led by the typesetter **Stephan Born**, it brought together artisans and workers. Born was a critical figureâhe was a socialist, but a practical one. He steered the congress away from purely reactionary demands (like banning all factories) and toward a modern program of labor reform.

Milestone: The *Allgemeine Deutsche Arbeiterverbruederung* (August - September 1848) This was the most important outcome of the Berlin congress and is the organization central to my digitization project. The **General German Workers' Brotherhood** was founded in Berlin. It was the first large-scale, cross-regional, and politically independent labor association in German history.

- **Structure:** It was an umbrella organization for countless local *Arbeitervereine* (Workers' Associations), trade groups, and educational clubs.
- **Goals:** Its program was a modern mix of mutual aid and political action. It established sickness and unemployment funds, libraries, and workers' educational associations (*Arbeiterbildungsvereine*).
- **Political Action:** Crucially, it lobbied the new political assemblies. It petitioned the Frankfurt National Assembly, demanding a ministry of labor, a 10-hour workday, and the right to unionizeâdemands that were almost entirely ignored by the liberal middle-class delegates, who were far more concerned with constitutional law.

B.3 Late 1848 - 1849: The Counter-Revolution and Suppression

The success of the labor movement was short-lived. The alliance between the liberal middle class and the working class, which had won the March Revolution, shattered. The liberals, fearing the "social revolution" more than the old monarchy, made their peace with the aristocracy.

Milestone: The Crushing of Vienna and Berlin (October - November 1848) The military counter-revolution began. Austrian troops brutally retook Vienna in October. In November, Prussian troops under General von Wrangel marched into Berlin, declared martial law, and dissolved the Prussian National Assembly. This marked the definitive end of the revolution's success.

Throughout 1849, revolutionary movements were crushed one by one, culminating in the defeat of the Baden uprising (the final, desperate attempt to save the revolution, in which many future Forty-Eighters participated).

B.4 1850-1854: The Legal Dissection of the Movement

With the old monarchies firmly back in control, the final step was to legally dismantle the organizations that the revolution had created. This is the period of suppression and prosecution that led directly to the emigration of my subjects.

Milestone: The Prussian *Vereinsgesetz* (Law on Associations) of 1850 This was the primary legal weapon used to destroy the *ArbeiterverbrÃŒderung*. This Prussian law, which was soon copied by other German states, was ruthlessly effective. Its key provisions:

- **Banned "Political" Associations:** It forbade any association deemed "political" (which included the *Arbeiterverbruederung*) from linking with other associations. This "no networking" rule made a national organization illegal overnight.
- **Banned Membership:** It explicitly forbade apprentices and women from being members of any political association. This gutted the *Arbeiterverbruederung* of a huge portion of its membership base.
- **Strict Police Oversight:** All meetings required advance notice to the police, who had the right to attend and dissolve the meeting at any time.

Milestone: The *Bundestagsbeschluss* (Federal Diet Decree) of July 1850 This decree from the restored German Confederation (the *Bundestag*) essentially gave federal approval for this crackdown. It re-instated pre-1848 rules that allowed for federal troops to intervene in any state to crush "subversive activities."

The Consequence: Prosecution and Dissolution Armed with these new laws, the police began a systematic campaign of suppression.

- The *Arbeiterverbruederung* was declared illegal. Its leaders were arrested, tried, and imprisoned.
- Stephan Born himself fled to Switzerland.
- Local workers' associations were forcibly dissolved. Their newspapers were shut down, their funds were seized, and their reading rooms were closed.

By 1854, the entire organizational structure of the 1848 labor movement had been eradicated. The men I am finding in my digitized documentsâthe committee members, the delegates, the local secretariesâwere now marked men. They were politically blacklisted, unable to find work, and under constant threat of arrest. Their only viable option was to flee. This is why they appear in the US passenger lists, bringing with them not just their skills, but the radical ideals and organizational experience of a revolution that had been comprehensively crushed.