LEADERSHIP AND SOCIAL NORMS:
EVIDENCE FROM THE FORTY-EIGHTERS IN THE CIVIL WAR

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ABSTRACT

A growing theoretical literature emphasizes the role that leaders play in shaping beliefs and social norms. We provide empirical evidence for such 'civic leadership.' We focus on the Forty-Eighters, a group of political refugees from Germany's failed 1848 revolutions, and their role in the struggle for the abolition of slavery in the United States. Our primary outcome is volunteering for the Union Army. Given the enormously high death toll during the Civil War, this variable provides a powerful measure of social norms against slavery. We show that towns where Forty-Eighters settled in the 1850s increased their Union Army enlistments by eighty percent over the course of the war. Using machine-learning techniques to infer soldiers' ancestry, we find that the Forty-Eighters had the biggest impact on the enlistment of German Americans, a smaller effect on English-speaking men (American and Irish), and yet a smaller effect on Scandinavian and Italian men. Forty-Eighters who fought in the war and were successful at raising a regiment had the biggest effect on enlistment, and Forty-Eighters also had a discernible effect in the field of battle, lowering their fellow soldiers' likelihood of desertion.

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1 Introduction

A growing body of theoretical literature on social networks points to the importance of leaders in the formation and equilibrium selection of social norms, beliefs, and convictions (Jackson and Wolinsky, 1996; Bala and Goyal, 2000; Galeotti and Goyal, 2010). In these models, leaders typically have no organizational or institutional authority. Rather, their influence arises from their central position in a social network, allowing them to direct information flows and influence equilibrium beliefs (Murphy and Shleifer, 2004). In social networks, the defining characteristics of leaders are their conviction and talent for communication (Akerlof and Holden, 2016), attributes that contribute to their visibility and prominence (Acemoglu and Jackson, 2015). We refer to such individuals as *civic leaders*.[1]

While there is ample empirical evidence for the importance of leadership in formal organizations, ours is the first paper to estimate a causal effect of civic leaders on their communities' beliefs and social norms.[2] We exploit the expulsion from Europe of the *Forty-Eighters*, political refugees from the failed German revolutions of 1848–1849, and their subsequent settlement in the U.S.[3] Looking at this specific group of immigrants has several advantages: First, the *Forty-Eighters*' participation in the German revolutions —the cause of their subsequent expulsion— shows both the strength and the nature of their convictions. In the words of A.E. Zucker, the *Forty-Eighters*' foremost historian, "three aspects dominated the scene from which [they] fled into the freedom of the United States: (*i*) liberty, (*ii*) democracy, and (*iii*) national unity" (Zucker, 1950, p.9). Second, the *Forty-Eighters* were forced into sudden flight to escape prosecution, thus arriving at their destination empty-handed and unprepared. As we will discuss in more detail, this haphazard arrival provides quasi-experimental variation in their spatial distribution across destination regions in the U.S. Third, as newly arrived immigrants the *Forty-Eighters* were not part of U.S. political organizations. Instead, they wielded their influence as civic leaders in their local communities.[4]

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[1]There is no common label in the literature. Acemoglu and Jackson (2015) refer to them as 'prominent agents,' Akerlof and Holden (2016) to 'movers and shakers,' and Galeotti and Goyal (2010) simply to 'the few.'

[2] Seminal empirical papers include Bertrand and Schoar (2003) and Jones and Olken (2005). The paper closest to ours is Jack and Recalde (2015), who study the effect of elected community leaders' behavior on voluntary public good contributions.

[3]The 1848 revolution was not limited to Germany; uprisings also occurred in Ireland, Poland, France and Italy. However, historians considered political exiles from Germany as unique because of their high libertarian ideals, as opposed to the primarily patriotic and nationalistic motives of revolutionaries in the other countries (Wittke, 1970).

[4]A handful of individuals took prominent roles in the Republican party. We can exclude them from our analysis.

Fourth, their political convictions were clear not only in the context of Germany but also in the U.S. context, where "they were not prepared to be silenced. Many could revive the spirit of the failed struggle for liberty in the fight against slavery" (Baron, 2012, p.3). As a result, there is a clear sense of outcomes that should have been affected if the *Forty-Eighters* indeed had an influence on shaping social norms. The outcome we focus on is town-level volunteering for the Union Army in the Civil War.

We combine enlistment data from a recently digitized collection of all men who served in the Union Army with newly collected data on the spatial distribution of *Forty-Eighters* across 4,300 towns in the Union states. To measure the latter, we coded information from four biographical accounts of the *Forty-Eighters* (Zucker, 1950; Wittke, 1970; Raab, 1998; Baron, 2012), complementing it with individual searches on `Ancestry`. This detailed information allows us to create a panel of 493 individuals who settled in 87 towns.

An obvious concern with our analysis is that the *Forty-Eighters* may have selected into destination towns based on unobservable characteristics that correlated with Union Army volunteering. However, the *Forty-Eighters*' haphazard arrival alleviates this concern. Because the *Forty-Eighters* had to leave Europe hastily to escape prosecution by the authorities, they typically did not have social connections or family ties in the U.S., and they often needed to find immediate employment where they could (Wittke, 1970, ch.6). The *German Society of New York* reported that "in 1850 and 1851 [there was] a sudden steep increase in requests for assistance to people totally deprived of all means, mostly political refugees flocking to America after the failure of the revolutions" (Wust, 1984, p.31). Penniless and in need of a job, most *Forty-Eighters* moved shortly after their arrival to wherever the German Societies' *Labor Bureau* found them employment—usually somewhere in the Midwest.[5]

A remaining concern is that our sample of *Forty-Eighters* co-located with other German immigrants arriving at the same time. If these immigrants shared the *Forty-Eighters*' libertarian ideals, we might overstate the *Forty-Eighters*' true influence. Since we are interested in the idiosyncratic settlement decision of a small set of individuals relative to the broader settlement patterns other migrants at the same time, we cannot appeal to instrumental variables that exploit broad factors

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[5] 97 percent of them stayed in that location, at least in the decade preceding the Civil War.

pulling all immigrants to a region at a certain time.[6] Instead, our identification argument is that the *Forty-Eighters'* settlement was quasi-random once we fully control for factors that attracted all German immigrants to a town at this time. We constructed four variables to capture these factors: One, we control for each town's 1850 initial German community. Two, we add the change in the size of German communities between the 1850 and 1860 Censuses. Three, we calculate each town's distance to destination locations advertised in *Metzler's Map for Immigrants*, the primary cartographic guide to America for German immigrants in the 1850s. Four, we coded up shipping lists of all German arrivals over the period 1849–1852 and used the 1860 Census to locate them in U.S. towns. Balance tests strongly support our identification argument: Once we include these core controls, all other variables in our location choice model appear entirely balanced. As an alternative, we pursue a *propensity score matching* (PSM) approach where we match each *Forty-Eighter* location with its five nearest neighbors in propensity score space. In the matched sample, we achieve balance across all town characteristics including the core controls.

We estimate sizable effects. The presence of one *Forty-Eighter* in a town raised adult male enlistments for the Union Army by twenty per hundred. This is a large effect, equalling the mean enlistment rate in the data. Once town size and German communities are controlled for, these estimated magnitudes are invariant to a wide range of geographic and economic controls. Reassuringly, the PSM strategy gives us almost identical results.

To further understand the estimated effect of civic leadership, we look at two specific channels emphasized in the historical narrative surrounding the *Forty-Eighters*, namely their involvement in publishing and in German social clubs, especially the *Turner Societies* (*Turnvereine*).[7] We find that the *Forty-Eighters* had sizable effects both on the presence of local German-language newspapers and on the formation of Turner Societies, while they had no effect on English-language newspapers. While the newspaper effect has an occupational element and therefore needs to be interpreted with caution, the effect on Turner Societies constitutes direct evidence of the *Forty-*

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[6] See Burchardi, Chaney, and Hassan (2017) and Nunn, Qian, and Sequeira (2017) for the use of such instruments to explain the location of broad immigration cohorts into different U.S. regions.

[7] The Turner movement emerged at the beginning of the 19th century in the German states during the time of the Napoleonic occupation with the goal to strengthen physical and moral powers through the practice of gymnastics. The movement became more politicized during the 1830s and 1840s, and had become primarily political when the first American Turnverein was founded in 1849 (Metzner, 1894). For instance, Turner Societies frequently formed bodyguards at Lincoln's public appearances during his 1860 presidential campaign, at a time when violent outbreaks were the norm rather than the exception at such events. See the discussion in Section 2.

Eighters's local civic leadership against slavery because the societies were highly political and actively involved in abolition movement.

Next, we investigate the 'cultural gradient' of the *Forty-Eighters*' influence on social norms. The historical record suggests both that the *Forty-Eighters*' social network was centered around the German-American community and that they reached out beyond this group. They supported the Republican party and the broader anti-slavery movement, gave public speeches in English, and wrote articles for the English-speaking press (Curti, 1949; Wittke, 1970; Baron, 2012). To examine the extent to which cultural barriers affected the *Forty-Eighters*' influence within local communities, we decompose all enlistments from the same town by soldiers' ancestry. To infer their ancestry, we trained a machine-learning algorithm on the full-count 1860 U.S. Census (where ancestry is reported) and used it to predict soldiers' ancestry. This allowed us to calculate the number of enlisted men by ancestry and town. In line with the historical record, the *Forty-Eighters*' effect was most pronounced for German-American men, around 20 percent smaller for Native men and those of Irish ancestry, and smallest for two large non-English-speaking immigrant groups, Scandinavians and Italians.

Finally, we turn to a closer investigation of the *Forty-Eighters*' direct engagement in the war. Of the 493 *Forty-Eighters*, 149 enlisted themselves in the Union Army. Among them we find the strongest effect for those who also succeeded in raising regiments. Those who enlisted but did not raise regiments had a smaller effect than those *Forty-Eighters* who did not fight. This suggests that raising a regiment separated the more persuasive from the less persuasive leaders among the *Forty-Eighters* who enlisted. Closer inspection of those who did not enlist reveals their importance in the rise of Turner Societies, suggesting that two different overall leadership styles were prevalent among the *Forty-Eighters*.

As a last exercise, we study the universe of 1.6 million Union Army soldiers who neither died nor were severely wounded, and we ask whether the presence of one of the 149 *Forty-Eighters* in their fighting units affected their likelihood of desertion. Controlling for many significant individual- and company-level drivers of desertion, we find that having a *Forty-Eighter* as the captain of a company reduced the likelihood of desertion by two percentage points, relative to a baseline desertion probability of around seven percentage points.

The core contribution of our paper is to provide empirical support for theories that emphasize

the importance of individual leadership in the diffusion of beliefs and social norms (Jackson and Wolinsky, 1996; Galeotti and Goyal, 2010; Bala and Goyal, 2000; Acemoglu and Jackson, 2015; Akerlof and Holden, 2016).[8] We do this in a setting where individuals risked high stakes for their beliefs and convictions. Between 1861 and 1865, one out of five adult males—over two million Northern men in total—took up arms to fight against 750,000 Southern men of the Confederate Army. Participation was costly. In total, 620,000 men lost their lives, as many as in almost all other American wars combined (Hacker, 2011). The financial incentives to fight in the war were low. Union Army privates earned about $13 per month—less than a farmhand earned in cash at the time (Edmunds, 1866, p.512)—and payment was irregular.[9] Yet, almost 95 percent of soldiers were volunteers. The question thus arises: what drove them to risk their lives? According to McPherson (1997, p.5), "the volunteers' values remained rooted in the homes and communities from which they sprang to arms and to which they longed to return." A sense of duty and honor clearly was part of these values. We show that they were also shaped by civic leaders who rallied people to the anti-slavery cause and led men to volunteer for the Union Army.

In addition, we contribute to a number of related literatures. First, we add to the literature on what makes successful leaders, which has argued that important leader characteristics are conviction or resoluteness (Bolton, Brunnermeier, and Veldkamp, 2012) and a sense of direction (Dewan and Myatt, 2008). These insights apply to the *Forty-Eighters* as well.[10] Second, we add to the literature on persuasion in which influencers direct information flows and influence equilibrium beliefs (DellaVigna and Gentzkow, 2010; Loeper, Steiner, and Stewart, 2014; Murphy and Shleifer, 2004). The *Forty-Eighters* successfully spread their libertarian ideas and convinced others to engage in the anti-slavery course and fight in the civil war. We present suggestive evidence that newspapers and social clubs were important dissemination platforms. Third, we add to the literature on barriers to diffusion. Our finding that the *Forty-Eighters'* effect was most pronounced for German-American men, less pronounced for English-speaking men, and least pronounced for non-English-speaking immigrant men is consistent with existing evidence that ethnicity and ancestry can form an im-

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[8] A separate literature studies agents' preferential attachment to certain connected leaders in the context of attention (Calvó-Armengol, Martí, and Prat, 2015).

[9] In the South, there were stronger economic motives, since Southern institutions were threatened by the war. Hall, Huff, and Kuriwaki (2017) provide evidence showing that slave-ownership was a significant determinant of joining the Confederate army.

[10] However, the distinction between fighting and non-fighting *Forty-Eighters* suggests that effective leaders do not necessarily have to lead by sacrifice as emphasized in Hermalin (1998). Context matters to effective leadership.

portant barrier to the diffusion of social norms (Spolaore and Wacziarg, 2009). Finally, we relate to the empirical literature on knowledge diffusion that commonly uses the arrival of narrowly defined immigrant groups as natural experiment to study the transmission of knowledge embedded in knowledge elites.[11] Examples include Hornung (2014), who studies the late-17th-century migration of skilled Huguenots from France to Germany; Moser, Voena, and Waldinger (2014), who look at the influx of German Jewish scientists into the U.S. after 1939; or Borjas and Doran (2012) who study the effect of the post-1990 influx of Russian mathematicians into the U.S. Our paper is closely related to this literature in that we use a similar exogenous immigration shock. However, in contrast to these earlier studies, we focus on the diffusion of social norms rather than on the diffusion of knowledge.

Section 2 introduces the historical background and describes the *Forty-Eighters'* situation in both German lands and the United States. Section 3 discusses the main data on the *Forty-Eighters* and on Union Army enlistment. Section 4 discusses identification. Section 5 presents the results. Section 6 concludes.

2 Who were the *Forty-Eighters*?

Beginning in the early 19th century, a rising movement across the German states started propagating a political union and a more balanced distribution of power between the ruling monarchs and their subjects. This period, called the *Vormärz*, culminated in March 1848, when political unrest in France spilled over to the German states and sparked the *March Revolution*. It started with first revolutionary uprisings in Baden and quickly spread to other states. (For details of the German revolutions, see Online Appendix A.) The important fact for this paper is that after the failed revolution, its leaders escaped to Switzerland and sought asylum as political refugees. Those who could not escape were prosecuted, either sentenced to long prison terms or executed. It soon became clear that Switzerland could not permanently host the political refugees (Jung, 2015; Nagel, 2012; Reiter, 1992). Instead, "diplomatic pressures from neighboring powers forced Switzerland to weaken its policy of giving hospitality to political offenders, and many left [...] and crossed the Atlantic to America" (Wittke 1970, p.27). This expulsion is nicely illustrated in a contempo-

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[11]This literature is small compared to the literature studying the general-equilibrium market adjustments to immigration-induced changes in the workforce. See Friedberg and Hunt (1995) for a review.

rary political cartoon from 1849 (Figure 1 in Online Appendix A) that depicts the absolutist rulers sweeping the leaders of the revolution out of Europe with a broom.

Most of these exiles went to the U.S., where they came to be known as the *Forty-Eighters*. (Wittke, 1970, p.4) defines them as "those who in some way actually participated in the liberal movements and the Revolutions of 1848 and 1849, and left their homes because of a conflict with the established authorities, or because they realized that henceforth it would be either too dangerous or too intolerable to remain." Implicitly, we adopt this definition. From a practical standpoint, we code up all the biographical information found in four historical compendia on the *Forty-Eighters*, which include 493 individuals, and complete their U.S. biographies using *Ancestry.com*. (For a detailed description of biographical data sources, see Appendix A.1.) Figure 1 tracks the arrival of the *Forty-Eighters* in the U.S. Of the almost 500 men, more than 80% arrived within less than two years.

Why did the *Forty-Eighters* engage in U.S. political battles? The *Forty-Eighters*' strong libertarian beliefs resulted from their commitment to overthrow the feudal system in the German lands, which they considered a form of slavery.[12] While the revolutionary goals of Irish, Polish and Italian immigrants who were involved in the 1848 uprisings were primarily patriotic and nationalistic, the *Forty-Eighters* were motivated by their high libertarian ideals (Wittke, 1970). "In the United States they were not prepared to be silenced. Many could revive the spirit of the failed struggle for liberty in the fight against slavery" (Baron, 2012, p.3). A letter by Anton Füster, one of the key figures of the German revolutions, written a year after he arrived in America (Tóth, 2014, cited on p.202), is illustrative: "Only a year ago, we were reverently singing the German national anthem. Now it sounds different. What is the German Fatherland? Is it Austria? No, I was forced to flee from there. Is it Prussia? No. There I was arrested. Is it Saxony? No. There warrants were issued against me. Is it the free city of Hamburg? No. There I was driven out by the police. Where is the German fatherland? In America!"

How did the *Forty-Eighters*' convictions map into the U.S. political battles in the 1850s? According to Wittke (1970, p.192), the *Forty-Eighters* "appraised the situation in terms of their revolutionary idealism, and concluded that the United States was involved in a sectional controversy

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[12] Setting their political convictions aside, the *Forty-Eighters* were by all accounts a diverse group, consisting of intellectuals, small proprietors and urban craftsmen.

Figure 1: The *Forty-Eighters*' Arrival, Turner Societies , and German Newspapers
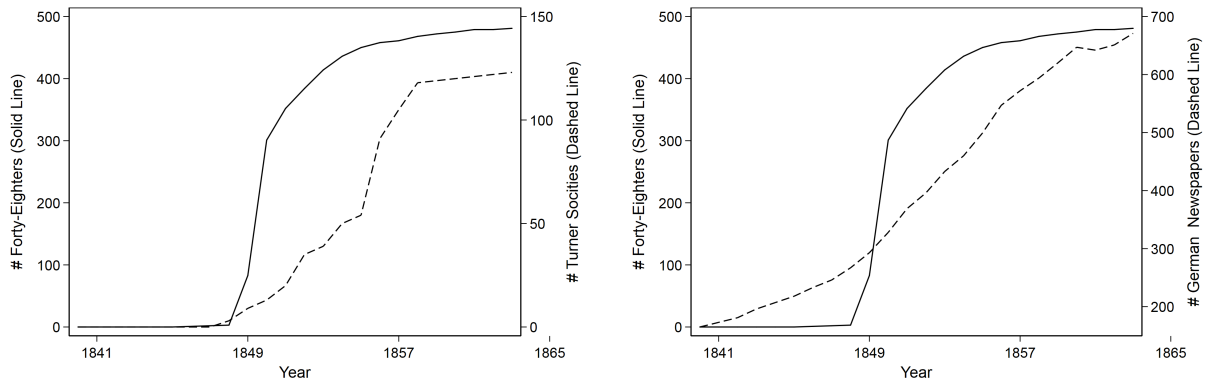
Notes: The left panel plots the arrival of the *Forty-Eighters* (scaled on the left axis) together with the emergence of the American *Turner Societies*, the first two of which were founded in 1848. The right panel plots the arrival of the *Forty-Eighters* together with the growth of German Newspapers in the U.S. (scaled on the right axis). German newspapers are scaled above zero, the first were founded as early as the 18th century.

over basic human rights in which one part of the nation defended the exact antithesis of democracy and equality." Various quotes by *Forty-Eighters* document that human slavery was to their mind a moral evil. Carl Schurz, one of the most prominent *Forty-Eighters*, called slavery the "one shrill discord." Friedrich Knapp's editorial in the *New York Abendzeitung* illustrates how abolition connected to the *Forty-Eighters*' revolutionary ideals: "The problem of slavery is not the problem of the Negro. It is the eternal conflict between a small privileged class and the great mass of the non-privileged, the eternal struggle between aristocracy and democracy" (quoted in Zucker, 1950, p.121). With the emergence of the Republican Party, the *Forty-Eighters* saw their beliefs politically represented, and they worked hard to convert other Germans as well as Americans to their beliefs. When Abraham Lincoln was elected the first Republican president in November 1860, the *Forty-Eighters* saw their next revolution arising. After seven Southern states seceded and the Civil War broke out in April 1861, they were among the first to call men to arms for the Union Army. Carl Schurz enthusiastically referred to the war as "a tremendous problem and a mighty cause! I am happy to live in this country at this time. In comparison with the splendid goal, what are our little sufferings and our individual sacrifices? Slavery is being driven out of its last citadel; the insulted dignity of human nature has been avenged. The people of the new world are taking an immeasurable step forward in its cleansing and ennobling."

How did the *Forty-Eighters* influence others' social norms and convictions? On this ques-

tion, two factors stand out in historical accounts. One, the *Forty-Eighters* were disproportionately represented in the newspaper business, often founding newspapers themselves. Because most newspapers in the 1850s openly declared their political leanings, such work afforded newspaper editors significant latitude to shape their readers' views, although quantitative evidence for this assertion is far from conclusive (Gentzkow, Shapiro, and Sinkinson, 2011). Two, the *Forty-Eighters* were very active in their local social clubs. These included card clubs, music societies, sharp-shooter organizations, and library associations. Bretting (1981, p.201) lists over 50 German social clubs that existed between 1835 and 1859 in New York City alone. The importance of social clubs for the transmission of social norms, beliefs and convictions has recently been demonstrated em-pirically in Satyanath, Voigtländer, and Voth (2016). By far the most politically important and in-fluential were the so-called Turner Societies ('Turnvereine'). The first U.S. Turnverein was founded in 1849; subsequently many more Turner Societies were founded across the country, creating a so-cial network that at the time wielded substantial political leverage. The abolition of slavery soon became the main goal of the nation-wide organization of Turner Societies. Most Turners were active supporters of the newly founded Republican Party during the 1850s and 1860s. At a time when violent outbreaks at political gatherings were common, Turners frequently formed body-guards for anti-slavery activists during public speeches; Turners were Lincoln's bodyguards at his inauguration (Zucker, 1950; Baron, 2012), and when the Civil War started, they formed special "Turner Regiments" (Hofmann, 1995, p.158). Wittke (1970, p.225) estimates that 60 percent to 80 percent of the Turners enlisted for the Civil War.

Figure 1 plots the arrival of our sample of *Forty-Eighters* together with these two potential mechanisms. Both graphs are in line with the historical narrative that the *Forty-Eighters* had an impact on both outcomes. This is more visually striking for the Turner Societies because the first was founded in 1849 (by a *Forty-Eighter*). A second jump in the number of Turner Societies is discernible in 1856, when the Republican Party entered the presidential race; this is consistent with the historical narrative that the Turner Societies had become highly politicized by this time (Hofmann 1995; Levine 1980, p.256).

3 Main Data

This section describes our treatment variable along with our main outcome variable, Union Army enlistment at the town level.

Exposure to the *Forty-Eighters*: Our starting point is an individual-level location panel dataset, constructed from biographical data sources. (See Appendix A.1, and also the abbreviated version of the biographies of the *Forty-Eighters* in Online Appendix B.) We are interested in the *Forty-Eighters'* role as civic leaders and how they influenced beliefs and convictions in their U.S. communities. In a time when travel and transportation costs were still quite high, social networks were mostly limited to local communities, which means we want to locate *Forty-Eighters* at a level of spatial granularity that reflects true local communities at the time. This is difficult because most 19th-century U.S. data is at the county level, i.e. too coarse to convincingly capture local communities.

Fortunately, the 1850 and 1860 Censuses are the only two in the 19th century where the Census Bureau published basic demographic information at a more disaggregate level than counties, namely towns (Fishman, 2009). They allow us to observe the universe of U.S. towns at the time, and from them we establish our spatial unit of observation. (For a detailed description of the town data is provided in Appendix A.2.) We observe 7,294 towns, which reduces to 4,331 by the considerations described below.

To turn the biographical panel dataset on the *Forty-Eighters'* into a town-level measure we apply the following procedure. Let $\mathcal{F}$ be the set of 493 *Forty-Eighters*, and let $FortyEighter_{ik}$ be an indicator that takes the value 1 if *Forty-Eighter* i settled in town k. We can then define a binary town-level exposure measure as:

$$\text{D}(\textit{Forty-Eighters})_k = \mathbb{1}(\sum_{i \in \mathcal{F}} FortyEighter_{ik} \geq 1), \tag{1}$$

where (1) takes value 1 if at least one *Forty-Eighter* settled in town k.

Expression (1) offers a binary distinction for towns where *Forty-Eighters* settled. However, the number of *Forty-Eighters* who settled in a given town varied widely. Also, the *Forty-Eighters* did not all settle down at exactly the same time, nor did they all stay in a single town. As a result,

while expression (1) provides an uncluttered shorthand of our treatment, we prefer to define a more precise treatment variable. Let $FortyEighter_{ikt}$ be an indicator that takes the value 1 if *Forty-Eighter* i lived in town k in year $t \in [1850, 1861]$, i.e. in the 11-year period between the *Forty-Eighters*' arrival in the U.S and the outbreak of the Civil War. Our preferred measure is then

$$Forty\text{-}Eighters_k = \sum_{i \in \mathcal{F}} \frac{1}{11} \sum_{t=1850}^{1861} FortyEighter_{ikt}. \tag{2}$$

Because equation (2) standardizes the settlement of *Forty-Eighters* by the maximum exposure of 11 years, a value of *Forty-Eighters*$_k = 1$ refers to a town where a *Forty-Eighter* settled in 1850 and stayed in until at least the outbreak of the war.

Overall, we observe 87 towns where at least one *Forty-Eighter* settled for some time. Nine of these towns were located in the South or the West. Figure 2 illustrates the *Forty-Eighters*' spatial distribution in the U.S. and Table 1 shows in more detail that the distribution of settlement was also quite skewed across the 87 towns. Seventy-four percent of the *Forty-Eighters* went to six large urban centers: New York, Cincinnati, St. Louis, Philadelphia, Baltimore, and Milwaukee. Cincinnati, St. Louis, Philadelphia and Milwaukee received larger numbers of *Forty-Eighters* relative to other cities of similar size such as Boston or Washington D.C., because they were home to larger German communities. New York was the most important arrival port. In the *Germans to America* passenger data collection, New York alone accounts for 85 percent of the 4.1 million German arrivals between 1850 and 1895. (For a detailed description of this data, see Appendix A.5.) It is thus not surprising that roughly one-quarter of the *Forty-Eighters* did not leave New York. In the following analysis, we disregard New York, because there is no plausible control town for it.

The Enlistment Data: Our main outcome variable at the town level is the number of enlistments for the Union Army. The data stem from a newly digitized collection of the universe of Union Army enlistments, more than two million men. The Union Army enlistment data is based on original reports issued separately by each state's Adjutant General's Office. Southern and Western states are excluded. We lack hometown information for over forty percent of the soldiers. In those cases, we use the observed distribution of hometowns in the regiment and assign soldiers proportionally to these towns. (For a detailed discussion, see section Appendix A.3.) There are two consequences of this way of inferring missing hometown information. First, the inferred al-

Figure 2: Spatial distribution of the *Forty-Eighters*
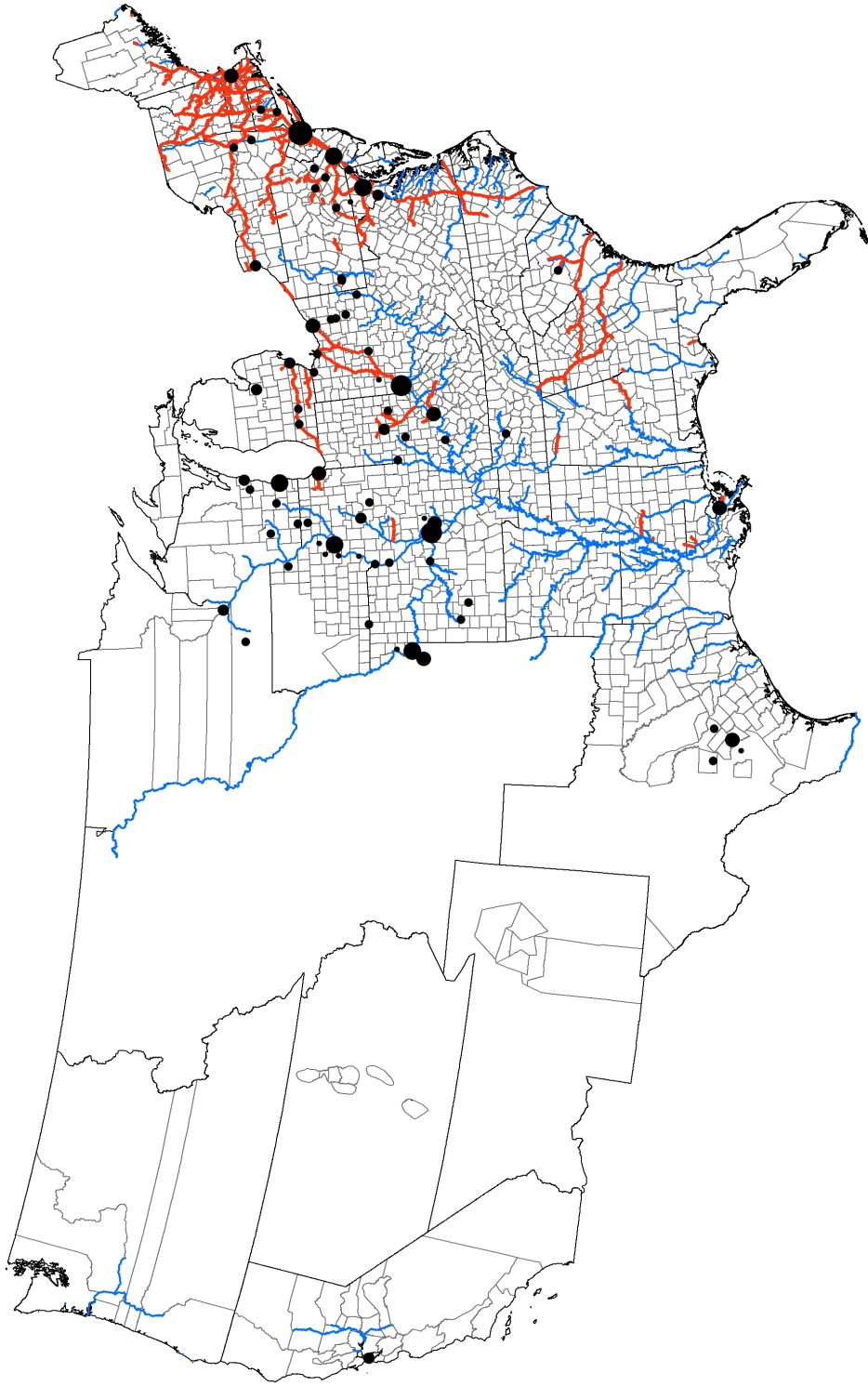
Notes: The map shows the spatial distribution of the *Forty-Eighters* across 87 U.S. towns. Larger bubbles indicate locations with more *Forty-Eighters*. Counties in their 1850 borders are marked with light grey outlines and corresponding states with black outlines. Blue lines refer to navigable rivers and canals in 1850; red lines indicate railroads in 1850 (Atack, 2015).

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Table 1: Distribution of the Treatment

State	Town	#	State	Town	#
Alabama	Mobile	0.33	Missouri	Benton	1.00
California	San Francisco	3.67	Missouri	Hermann	1.00
Connecticut	Hartford	0.50	Missouri	Saint Joseph	0.08
Connecticut	New Haven	1.50	Missouri	Saint Louis	32.42
District of Columbia	Washington	5.92	New Jersey	Hoboken	1.08
Illinois	Bellville	7.83	New Jersey	Newark	7.50
Illinois	Bloomington	1.08	New York	New York City	123.33
Illinois	Chicago	13.33	New York	Brooklyn	2.67
Illinois	Freeport	0.83	New York	Buffalo	2.75
Illinois	Peoria	3.25	New York	Hudson	0.75
Illinois	Quincy	1.08	New York	Schenectady	1.00
Illinois	Springfield	0.17	New York	Yonkers	0.58
Illinois	Warsaw	1.08	Ohio	Cincinnati	36.42
Indiana	Bloomington	1.00	Ohio	Cleveland	8.92
Indiana	Indianapolis	3.58	Ohio	Columbus	2.50
Indiana	Rushville	1.00	Ohio	Danbury	0.75
Indiana	Terre Haute	1.00	Ohio	Dayton	2.00
Indiana	Troy	1.08	Ohio	Franklin	1.00
Iowa	Buffalo	0.42	Ohio	Massillon	0.33
Iowa	Burlington	0.67	Ohio	Sandusky	0.83
Iowa	Davenport	15.00	Ohio	Toledo	1.00
Iowa	Dubuque	0.08	Ohio	Zanesville	1.00
Iowa	Farmersburg	1.00	Pennsylvania	Allegheny	1.00
Iowa	Guttemburg	0.50	Pennsylvania	Allentown	1.00
Iowa	Keokuk	0.08	Pennsylvania	Carlisle	2.00
Iowa	Muscatine	0.17	Pennsylvania	Littlestown	0.08
Iowa	New Buda	2.92	Pennsylvania	Minersville	0.42
Iowa	Springfield	0.58	Pennsylvania	Philadelphia	19.00
Iowa	Waterford	0.33	Pennsylvania	Pittsburg	1.33
Kansas	Atchison	0.08	Pennsylvania	Reading	1.00
Kansas	Lawrence	6.50	South Carolina	Columbia	0.92
Kansas	Leavenworth	11.50	Texas	Austin	1.17
Kentucky	Louisville	9.92	Texas	Fredericksburg	1.50
Louisiana	New Orleans	1.25	Texas	New Braunfels	4.25
Maryland	Baltimore	16.00	Texas	San Antonio	0.92
Maryland	Elkton	0.92	Virginia	Wheeling	0.92
Massachusetts	Boston	7.17	Wisconsin	Green Bay	0.08
Michigan	Detroit	4.00	Wisconsin	Manitowoc	2.50
Michigan	Kalamazoo	0.75	Wisconsin	Milwaukee	14.92
Michigan	Lansing	0.42	Wisconsin	Monroe	0.75
Michigan	Saginaw	2.92	Wisconsin	New Holstein	0.92
Minnesota	New Ulm	2.42	Wisconsin	Sheboygan	0.58
Minnesota	St. Paul's	3.17	Wisconsin	Watertown	1.25
			Wisconsin	Westfield	1.75

Notes: The table reports on the distribution of the *Forty-Eighters*, as defined by expression (2), in a town between 1850 and 1861. There are 87 towns. Southern and Western towns are reported for completeness but crossed out because they can play no role in our analysis of Union Army volunteering. The distribution of the *Forty-Eighters* is skewed toward larger cities, while 66 cities had less than three *Forty-Eighters*.

location induces noise. To account for this, we weight all regressions by the share of enlistments without missing information in every town. Second, this procedure in turn implies that we consider only towns where we observe at least one enlisted soldier. This reduces our effective sample from 7,294 to 4,331 towns, and our number of treated towns is now 41.[13] Appendix A.3 Table 10 shows the distribution of towns by state.

4 Identification

In this section, we introduce our identification strategy. In our baseline specification, we estimate equations of the form

$$\text{Enlistment}_k = \beta \textit{Forty-Eighters}_k + \boldsymbol{x}_k' \delta + \eta_s + \epsilon_k, \tag{3}$$

where Enlistment_k is our main outcome, town k's share of the population that enlisted in the Union Army. $\textit{Forty-Eighters}_k$ measures the presence of $\textit{Forty-Eighters}$, $\boldsymbol{X}_k$ is a vector of town-level control variables, η_s are state fixed effects, and ϵ_k represents the error term. The key concern with this estimation is that the $\textit{Forty-Eighters}$ might have selectively chosen their destination location, which would imply that $cov(\textit{Forty-Eighters}_k, \epsilon_k) \neq 0$. For example, $\hat{\beta}$ might be upward-biased, because the $\textit{Forty-Eighters}$ selected into locations that were more open to their liberal ideas. The following paragraphs discuss this concern and present strategies to assure the randomness of the assignment.

Assessing the *Forty-Eighters'* Location Decisions: The historical narrative provides strong evidence that the *Forty-Eighters* had to leave Europe hastily to escape prosecution, which explains their arrival in the U.S. over a narrow window of only two years. (See Figure 1.) Unlike previous cohorts of German immigrants, they had no time to plan their emigration, they arrived without savings, and had no social connections in the U.S. to influence their location choice. As a result, they were in much more immediate need of finding gainful employment than the average immigrant. The example of Hermann Raster illustrates this argument. Raster was a true intellectual. He spoke seven languages. He studied in Leipzig and Berlin, and he was part of a literature cir-

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[13] Connecticut never reported soldiers' hometowns in the original Adjutant General's Reports, so that Connecticut towns are not in our data. As can be seen in Table 1, this explains two of the dropped towns in the final sample of 41 treated towns.

cle around Bettina von Arnim, a German writer and novelist who was known to support young talents. Raster was imprisoned because of his active role in the German Revolution, but he was released from prison in 1851 under the condition that he leave Germany. He arrived in New York in July 1851. The only work he could find upon his arrival was as a wood-chopper on a farm near Tioga, Pennsylvania.

Raster is representative of many other *Forty-Eighters* in their early years in the U.S., who typically relied on the *German Society* in their port of arrival to help them find work. By historical accident, the *Forty-Eighters'* arrival coincided with the *German Societies'* increased efforts to place German immigrants into jobs outside of New York.[14] The German Society ran a 'labor bureau' to match destitute immigrants with employers across the country.[15] According to Wust (1984, p.32), this "employment service provided 2,200 jobs in 1846, 4,950 jobs in 1849 and 9,435 in 1853."[16] In the 1850s, job opportunities for Germans were typically located in the Midwest, mostly as office clerks, on the railroad, and on farms. Wittke (1970, ch.6, p.66) describes the economic hardship of several individual *Forty-Eighters* in the early years after their arrival; he laments the many "scholars able to quote Homer but forced to work with pick and shovel as day laborers on canals and railroads."

The historical narrative leaves little room for a selection of the *Forty-Eighters* into towns based on their political convictions. Since 97 percent of the *Forty-Eighters* did not migrate from their first location of settlement before 1861, it is this first location of settlement that is critical to identification in our setting.[17] Of course, while the *Forty-Eighters'* initial job assignment might have appeared random to historians, and possibly to the *Forty-Eighters* themselves, it is not random to

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[14]This was caused by two scandals, in 1847 and 1848, when groups of paupers from Grosszimmern and Griesheim in Hesse had arrived in New York City and refused to leave the city's Poor House. The German Society was fiercely attacked by New York officials and newspapers, who accused the 'Dutchmen' of loading this group of paupers onto New York (Wust, 1984, p.30).

[15]Since the immigrants typically did not speak English well, the pool of jobs was limited and German employers were the preferred choice.

[16]Wust (1984) mentions that the archives of the *German Society of New York City* held every annual report since 1845 at the time of his writing. Unfortunately, the society today has a staff of one, no archives and no library anymore.

[17] To account for the 14 *Forty-Eighters* who did migrate, we experimented with restricting the treatment to locations k that served as the *Forty-Eighters'* first residence and ignores any further location changes until 1861. This gives us the treatment

$$\sum_{i \in \mathcal{F}} \frac{1861 - \tau_{ki}}{11}, \tag{4}$$

where expression τ_{ki} indicates the year in which individual i arrived in his first location of settlement k. Unreported regressions show that the correlation between expression (4) and our main treatment (2) is extremely tight, and delivers point estimates that are practically identical to the ones we will present based on treatment (2). This is true precisely because most *Forty-Eighters* stayed in the town they first settled in, at least until the outbreak of the Civil War.

the econometrician, because work opportunities for the *Forty-Eighters* could have correlated with other unobserved factors that drove political trends and social norms, and therefore the outcomes we study. Of particular concern is that the *Forty-Eighters* went where all recent German arrivals went. Indeed it turns out that the *Forty-Eighters* were more likely to locate near existing German communities, and were likely to co-locate with the roughly 100,000 other Germans who arrived in the early 1850s, and who may have shared the *Forty-Eighters*' political convictions.

We will therefore carefully control for forces of attraction that applied to all German immigrants at the time and also directly control for other German immigrants' location choices. Conditional on these factors, we argue that the specific location of the 493 individuals we study was essentially random. In the rest of this section, we present balancing tests that lend strong support to this conditional identifying assumption.

Balancing Tests: To support our argument that the *Forty-Eighters* were quasi-randomly allocated across locations, we start with simple balancing tests where we regress different location characteristics on the *Forty-Eighters* treatment. Doing so will give us an idea of potentially important location factors. In this exercise, we consider characteristics from the 1850 Census to be pre treatment, because the 1850 Census was enumerated in 1849 and because the vast majority of the *Forty-Eighters* arrived later. (See Figure 1.)

We employ covariates from the following five separate data sources:

(*i*) Fishman (2009) provides a set of town-level population control variables, and we will use the population share of white females and the share of slaves.

(*ii*) We geocoded the location of all towns, which allows us to calculate a rich set of geographic location factors comprising longitude and latitude, log elevation, the mean temperature and precipitation, and (log) distance to the coast, to the next navigable river and to the railway network in 1850 (provided by Atack, 2015). We also include distance to cities on Metzler's *Map for Immigrants* (shown in Figure A1 in Appendix A.4) and the weighted distance to one of the four relevant arrival ports (Baltimore, New Orleans, New York and Philadelphia), using the share of German immigrants who arrived in the respective ports between 1848-1855 as weights.

(*iii*) In addition, we obtain some town-level variables from the *full-count Censuses* for 1850 and 1860.[18] Information from the full-count censuses does not include detailed individual characteris-

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[18] The full-count censuses make it hard to establish the universe of U.S. towns because census enumerators often

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tics, but the records do include place of birth. In the 1850 and 1860 Census, there were 570,591 and 865,600 individuals respectivley who report Germany as place of birth. We use this information to measure a town's initial presence of German communities as well as its change in the share of German-born individuals between 1850 and 1860.

(*iv*) To additionally locate other German immigrants who arrived precisely with the *Forty-Eighters*, we digitized the *Germans to America* collection for 1849–1852 and used the immigrants' name, age and gender to match them with individuals in the full-count 1860 Census. (For a detailed explanation of the matching procedure see Appendix A.5.)

(*v*) Lastly we have a rich set of *county*-level controls for 1850 from Haines (2010), including the county population share living in towns with either more than 2,500 or more than 25,000 inhabitants, the share of foreign-born inhabitants, the size of the agricultural sector and the size of the manufacturing sector, and the number of churches. (For more details on this data-source, see Appendix A.6.)

In the following, we exclude the seven towns with more than eight *Forty-Eighters* from our baseline specification, reducing the sample size from 4,331 to 4,324.[19] The motivation for doing so is not sample balance. In fact, in Appendix A.7 we show that including the seven has no effect on sample balance. Instead, we chose to drop the seven towns from our baseline specification because we are interested in the effect of one *Forty-Eighter* on their local community. As one might expect, we find that the effect of 15 *Forty-Eighters* is not 15 times as large as the effect of one *Forty-Eighter*.

We start with a parsimonious balancing test, where we regress the outcome variables on the *Forty-Eighters* treatment and state fixed effects. We further weight all regressions by the share of enlistments without missing information in every town (see Section 3). Column 1 of Table 2 shows the coefficients and p-values for these regressions. Overall, the balancing tests point to one important location factor: the *Forty-Eighters* were more likely to locate in proximity to existing German communities. Specifically, they appear to have co-located with other Germans who arrived between 1849 and 1852. The presence of German-American communities is therefore an obviously important location factor that is in line with our reading that the *Labor Bureaus* in the

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included unincorporated areas under the label township. However, with the universe of towns from Fishman (2009), most places in the Census can be clearly located.

[19]In Table 5 we show that the main results' significance is not affected by including these seven towns, but the estimated magnitudes are because a linear effect is estimated of much larger numbers *Forty-Eighters* in a town.

Table 2: Balancing test

	Unconditional		Conditional		PSM	
	Coeff.	p-Val.	Coeff.	p-Val.	Coeff.	p-Val.
Controls Core						
Town : log Population $_{1850}$	0.580	[0.241]	-	-	-0.174	[0.727]
Town : log Population^2 $_{1850}$	9.628	[0.193]	-	-	-1.136	[0.880]
Town : Share Germans $_{1850}$	0.043***	[0.001]	-	-	-0.038	[0.205]
Town: Δ Count Germans $_{1850\text{-}60}$	0.001	[0.945]	-	-	0.003	[0.842]
Town : German Arrivals $_{1849\text{-}52}$	3.526**	[0.019]	-	-	1.650	[0.265]
Town : log Dist Metzler Towns	-0.780*	[0.085]	-	-	0.102	[0.858]
Controls Town						
Town : Share Slaves $_{1850}$	-0.005	[0.314]	-0.006	[0.228]	-	-
Town : Share White Female $_{1850}$	0.012	[0.349]	0.014	[0.321]	0.014	[0.152]
Controls Geography						
Town : log Dist Navigable River	-0.742	[0.153]	-0.086	[0.805]	0.069	[0.899]
Town : log Dist Railway	-0.436	[0.170]	-0.148	[0.650]	0.258	[0.542]
Town : log Dist Ports (weighted)	-0.046	[0.103]	-0.037	[0.312]	0.041	[0.227]
Town : Mean Temperature	0.557	[0.151]	0.008	[0.991]	0.246	[0.439]
Town : Mean Precipitation	0.053	[0.170]	-0.008	[0.909]	-0.049	[0.384]
Town : log Dist Coast	-0.201	[0.164]	0.082	[0.716]	0.034	[0.859]
Town : log Elevation	-0.162**	[0.017]	0.007	[0.964]	0.133	[0.393]
Town: Latitude	-0.202	[0.460]	0.045	[0.923]	-0.211	[0.391]
Town: Longitude	0.456*	[0.093]	0.460	[0.126]	-0.483	[0.130]
Controls Economic						
County: log (Manuf Empl) $_{1850}$	0.010	[0.441]	-0.005	[0.537]	0.002	[0.893]
County: log($ Manuf Output) $_{1850}$	0.327	[0.170]	-0.111	[0.459]	0.037	[0.872]
County: log($ Manuf Value) $_{1850}$	0.397	[0.109]	0.044	[0.795]	-0.081	[0.715]
County: Urbanization 25K+ $_{1850}$	0.020	[0.420]	-0.006	[0.731]	0.025	[0.327]
County: Urbanization 2.5K+ $_{1850}$	0.073	[0.145]	-0.028	[0.226]	0.026	[0.621]
County: Foreign-Born Pop $_{1850}$	0.051	[0.182]	-0.004	[0.885]	-0.004	[0.910]
County: log($ Farm Value) $_{1850}$	0.105	[0.549]	-0.177	[0.614]	0.062	[0.750]
County: log($ Farm Equip Value) $_{1850}$	0.030	[0.829]	-0.202	[0.485]	-0.035	[0.835]
County: log($ Farm Livestock Value) $_{1850}$	-0.094	[0.493]	-0.274	[0.271]	-0.045	[0.790]
County: Share Farmland $_{1850}$	0.000	[0.811]	-0.000	[0.868]	-0.000	[0.688]
County: Churches 1850	10.101	[0.366]	-14.679*	[0.090]	9.292	[0.447]
Observations	4,324		4,324		137	

Notes: The table shows estimated coefficients from separate regressions of the covariates on the *Forty-Eighters* treatment dummy and state fixed effects in the 'Unconditional column', and the *Forty-Eighters* treatment dummy, state fixed effects, and the core controls in the 'Conditional column'. The 'PSM column' restricts the sample to treated locations and their five nearest neighbors in propensity score space and regresses each covariate on the *Forty-Eighters* treatment dummy conditional on state fixed effects. In this table, we exclude the seven towns with more than eight *Forty-Eighters*. Appendix A.7 presents the same balancing results when these seven towns are included. All regressions are weighted by the share of enlistments without missing information in every town, and standard errors are robust.

arrival ports matched them with jobs in German communities. From an econometric viewpoint, it may be that German-American communities were more strongly gravitating toward anti-slavery social norms, which could mean that we wrongly assign a civic leadership role to *Forty-Eighters* who merely settled in areas with political pre-trends.[20]

To account for this potential source of bias, we define a set of 'core controls,' which comprise a town's share of German-born among the population in 1850 and the change in a town's share of German-born between 1850 and 1860; the number of co-locating other German immigrants who also arrived in 1849–1852; and the distance to the next town indicated on Metzler's map for immigrants. Moreover, we include log population and log population squared in 1850, since the historical record suggests that the *Forty-Eighters* selected into more urbanized areas; and we see some imbalance on these covariates. The 'Conditional column' shows that controlling for the set of core controls leaves us with a balanced sample, suggesting that the *Forty-Eighters*' location choice is not systematically related to other observed covariates. We will therefore always condition the treatment on this set of controls in the subsequent regression specifications. As an alternative way of assessing how much the imbalance in the core controls affects our estimated effects, we employ a matched sampling approach. Specifically, we use propensity score matching, allowing for five matches per observation.[21] According to Imbens and Rubin (2015), this can improve inference and leaves the results less sensitive to minor changes. The 'PSM column' of Table 2 shows the results. PSM matching further reduces the covariate imbalance to the extent that we achieve balance even in the core controls. In the next section, we will also report results based on this matched sample.

5   Results

Table 3 reports the results of estimating equation (3), i.e. the effect of the *Forty-Eighters* as defined in expression (2), on Union Army volunteering. The outcome is a town's total enlistments relative to its adult male population in 1860.

The top panel of Table 3 reports on the main outcome, the share of a town's adult men who

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[20] The opposite concern may arise if the *Forty-Eighters*' influence was focused on German-Americans but was not spatially concentrated. For example, if German-American communities were socially connected across space, e.g. through the nationwide Turner organizations and through the German press, then even if the *Forty-Eighters*' influence on German-Americans was substantial, it may have been quite uniform across communities. In that case, regressions that include German-American communities might over-control.

[21] Alternative specifications where we alter the number of matching partners do not lead to different results.

Table 3: Effect of *Forty-Eighters* on Union Army Enlistments

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome:	*Enlisted Men / Adult Male Population $_{1860}$ in % (0-100)*					
Forty-Eighters$_k$	22.748***	20.778***	20.834***	20.906***	20.371***	20.407***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
log Town Population $_{1850}$		-4.264	-5.362*	-6.013*	-5.964*	-5.784*
		[0.143]	[0.050]	[0.057]	[0.055]	[0.063]
log Squared Town Population $_{1850}$		0.364*	0.429**	0.448*	0.469**	0.454*
		[0.098]	[0.038]	[0.060]	[0.045]	[0.054]
Share Germans $_{1850}$		-10.951*	-7.450	-7.368	1.510	1.669
		[0.081]	[0.230]	[0.215]	[0.776]	[0.750]
Δ Germans $_{1850-60}$		-8.395	-6.021	-4.368	0.881	1.040
		[0.179]	[0.344]	[0.462]	[0.882]	[0.859]
German Arrivals $_{1849-52}$		0.116	0.114	0.169	0.126	0.126
		[0.734]	[0.742]	[0.629]	[0.701]	[0.701]
log distance Metzler-town		-0.947**	-0.862*	-0.645	-0.821**	-0.813**
		[0.036]	[0.051]	[0.135]	[0.037]	[0.038]
Controls #	-	core	+ town	+ geographic	+ county	+ churches
fixed effects:	state	state	state	state	state	state
Observations	4,324	4,324	4,324	4,324	4,324	4,324
R-squared	0.156	0.161	0.171	0.191	0.205	0.205
PPS-Statistic	0.012	2.189	0.049	0.046	1.317	0.121
p-val [PPS]	0.912	0.139	0.826	.830	0.251	0.728
	(7)	(8)	(9)	(10)	(11)	(12)
Outcome:	*log: Enlisted Men*					
Forty-Eighters$_k$	1.732***	0.817***	0.819***	0.802***	0.761***	0.763***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	4,324	4,324	4,324	4,324	4,324	4,324
R-squared	0.441	0.594	0.596	0.605	0.612	0.612
PPS-Statistic	0.097	21.607	0.011	0.007	1.352	0.061
p-val [PPS]	0.756	0.000	0.918	0.935	0.245	0.805

Notes: The table reports results from regressions of a town's share of enlisted adult men (top panel) or the log of enlisted men (bottom panel) on the *Forty-Eighters* treatment. The treatment sums the number of *Forty-Eighter*-years per town and standardizes the measure by the maximum exposure of 11 years such that a value of 1 refers to a town where one *Forty-Eighter* settled in 1850 and stayed there until the outbreak of the Civil War. See expression (2). Columns 1–6 stepwise introduce additional controls. Column 1 conditions on state fixed effects; column 2 adds the set of core controls; column 3 introduces town-level controls; column 4 adds geographic controls; column 5 considers county-level controls; and column 6 controls for the number of churches. The PPS-statistic in columns 3–6 report the χ^2 statistic and the associated p-value of a generalized Hausman test which compares the estimations with and without an additional sets of control variables (Pei, Pischke, and Schwandt, 2017). Standard errors are clustered at the county-level. *p-values* are reported in square brackets. *** p<0.01, ** p<0.05, * p<0.1.

enlisted. The bottom panel reports on the log of enlisted men as the outcome. Columns 1–6 present results where we stepwise introduce sets of controls. Column 1 includes only state fixed effects. Column 2 adds the six core controls (i.e. population 1850 and its square, distance to the Metzler towns, the share of German-born inhabitants, the change in the share of German-born inhabitants between 1850 and 1860 and the number of German immigrants arriving between 1849 and 1852) to the regression. Column 3 adds 1850 town-level demographic controls to the regression (share of slaves and share of white females). Column 4 adds geographic controls (mean temperature, mean precipitation, log distance to the coast, log distance to the next navigable river in 1850, log distance to the 1850 railway network, log distance to the four arrival ports, log elevation, latitude, and longitude). Column 5 adds census controls at the county level observed in 1850 (share of manufacturing labor, value of manufacturing output, manufacturing capital, share of population living in cities larger than 2,500, share of people living in towns larger than 25,000, share of foreign-born individuals, farm value, value of farm equipment, value of farm livestock, improved acres of farmland, and the number of churches). Column 6 adds a control for churches, which we include separately because of churches' frequent involvement in the abolitionist movement.

It is evident in both panels that only the core controls really affect the estimated coefficients, consistent with the discussion in section 4. To test this formally, we follow Pei et al. (2017) and compare the estimations with and without the added sets of covariates. The χ^2 statistic and the associated p-value of this generalized Hausman test are reported as the Pei-Pischke-Schwandt (PPS) statistic and the corresponding *p-value* at the bottom of both panels in Table 3. The test confirms the initial impression that there are no significant imbalances. In other words, once we control for location factors that attracted *all* German immigrants, the *Forty-Eighters*' location choice is as good as random, which gives the estimated effect on enlistment a causal interpretation.

The estimates suggest that one *Forty-Eighter* raised his town's Union Army enlistments by twenty men per one hundred adult males over the course of the war. While this is a large effect, it is still reasonable, as it equals the mean town-level enlistment rate in our data and matches historians' overall assessment that one out of five adult Northern males took up arms to fight (Hacker, 2011). The corresponding estimate in the bottom panel implies that a *Forty-Eighter* increased total enlistments by 76 percent.

Robustness: While our estimations and tests presented in Table 3 suggest that our treatment

is not strongly correlated with other control variables, we acknowledge that we do not add the controls one-by-one but in blocks. Doing so might cover up some relevant relationships between the treatment and outcome variables that may point to the existence of unobserved confounding variation. To address this concern, we employ different variable-selection models that choose the most relevant combination of control variables. Specifically, in Table 4 we employ the doubly robust variable-selection procedure proposed by Belloni, Chernozhukov, and Hansen (2014) and alternatively the R^2 and *Akaike's information* criteria suggested by Lindsey, Sheather, et al. (2010). Columns 1–3 show that these alternative approaches to selecting control variables do not make a difference.

Next, we repeat the estimations for the matched-sampling approach, where we used propensity score matching (PSM) and kept the five nearest neighbors in propensity-score space. We do so conditional on state fixed effects (column 4) and state fixed effects plus core controls (column 5). It is reassuring to see that the coefficient on the *Forty-Eighters* does not change substantially, despite the drastic reduction in sample size. In the bottom panel, with log enlistments as the outcome, we see a larger change between columns 9 and 10, which is, however, comparable to the change in the unmatched, full sample for the log of enlisted men (columns 7 and 8 in the bottom panel of Table 3).

In a final robustness check, we rule out spuriously correlated effects by replacing the actual *Forty-Eighter* locations with an equal number of randomly drawn locations. We then re-estimate our baseline equation 3 with this placebo treatment. We repeat this experiment 1,000 times, comparing the distribution of the estimated placebo effects to the actual treatment effect. To facilitate this exercise, we abstract from variation in the number of *Forty-Eighters* across locations by using the dummy measure defined in expression (1) instead of the treatment defined by expression (2). The coefficient on (1) in our most conservative specification (column 6 of Table 3) is 23.6375. Figure 3 shows the result of this placebo exercise. The placebo distribution is centered around a mean value of -.0389 and the largest estimated coefficient is 9.339. This is in stark contrast with the actual coefficient of 23.6375 (red line). This supports our argument that it was indeed the presence of *Forty-Eighters*, i.e. not spurious correlation, that caused men to enlist for the Civil War.

Given that some towns hosted only one *Forty-Eighter* while others hosted two or more, it is natural to ask whether the *Forty-Eighters* had a nonlinear effect on the probability of enlistment.

Table 4: Robustness Tests and Magnitude Checks

	(1)	(2)	(3)	(4)	(5)
Outcome:	*Enlisted Men / Adult Male Population $_{1860}$ in % (0-100)*				
Forty-Eighters$_k$	20.778***	20.778***	20.778***	18.720***	18.321***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Controls-Selection:	Belloni et al.	Adj R-Sq	AIC		core
Sample				PSM	PSM
fixed effects:	state	state	state	state	state
Observations	4,324	4,324	4,324	137	137
R-squared	0.161	0.161	0.161	0.318	0.477
	(6)	(7)	(8)	(9)	(10)
Outcome:	*log: Enlisted Men*				
Forty-Eighters$_k$	0.817***	0.817***	0.817***	1.134***	0.599***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	4,324	4,324	4,324	216	216
R-squared	0.594	0.594	0.594	0.336	0.088

Notes: The table reports results from regressions of a town's share of enlisted adult men (top panel) or the log of enlisted men (bottom panel) on the *Forty-Eighters* treatment. The treatment sums the number of *Forty-Eighter*-years per town and standardizes the measure by the maximum exposure of 11 years such that a value of 1 refers to a town where one *Forty-Eighter* settled in 1850 and stayed there until the outbreak of the Civil War. See expression (2). Columns 1–3 (6–8) show results of specifications where we employ different variable-selection methods to determine the set of control variables. Columns 4–5 (9-10) show the results from estimations where the sample is limited to the five nearest neighbors in propensity-score space (see section 4). Column 4 conditions the regression on state fixed effects, and column 5 additionally adds the set of core controls. Standard errors are clustered at the county level. *p-values* are reported in square brackets. *** p<0.01, ** p<0.05, * p<0.1.

Figure 3: Placebo Estimations
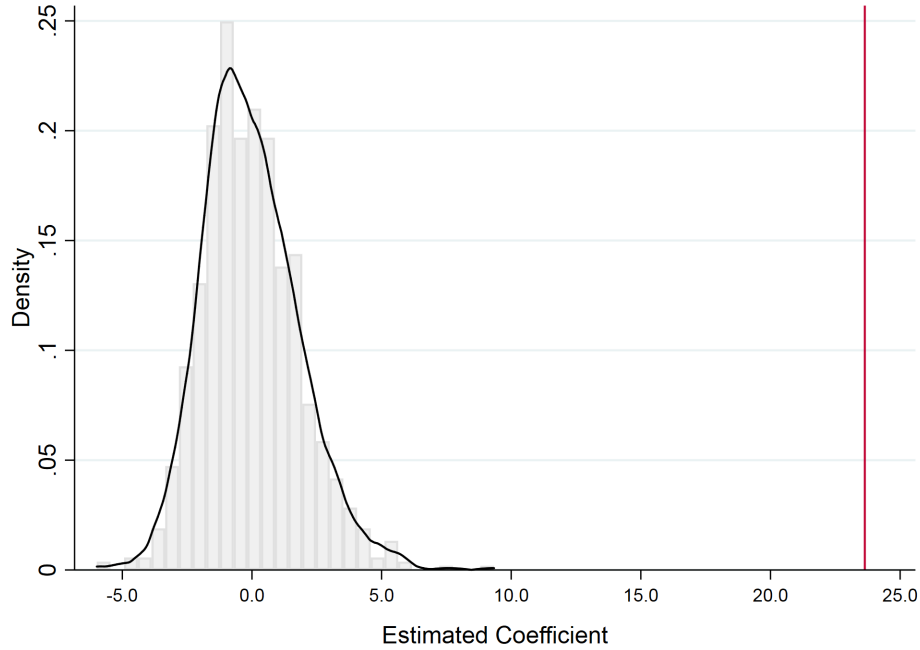
Notes: The figure shows the distribution of 1,000 coefficients from placebo estimations where we replace the actual *Forty-Eighter* locations with an equal number of randomly drawn locations. The red line contrasts this distribution with the magnitude of the actual coefficient. For simplicity, we abstract from variation in the number of *Forty-Eighters* across locations and simply use a dummy that takes the value one if a location hosted at least one real (or placebo) *Forty-Eighter*.

To test this, we run a regression where we include both the number of *Forty-Eighters* and its square. Table 5 shows that the effect is, as expected, nonlinear. In column 1, the coefficient on the number of *Forty-Eighters* is 40.8 and the one on its square T_k^2, is -7.3, implying that the linear effect of 20.4 estimated in column 6 of Table 3 applies to a town with about 2.8 *Forty-Eighters* ($\frac{40.8-20.4}{7.305}$). Column 4 shows the same nonlinearity for the log of enlisted men. Next, we allow for even more stronger skewness in the treatment variable and include the seven towns with more than eight *Forty-Eighters*, i.e. Baltimore, Chicago, Cincinnati, Cleveland, Davenport, Milwaukee, and Philadelphia, which had, respectively 16, 13, 35, 9, 15, 15 and 20 *Forty-Eighters*. Columns 2 and 5 show that the baseline effects (20.4 and 0.763 in column 6 of Table 3) remain highly significant but unsurprisingly shrink a lot in magnitude when compared to Table 3. The nonlinearities we inspected in columns 1 and 4 are equally present in columns 3 and 6 for this larger sample. Both the number of *Forty-Eighters* and its square are highly significant, with *p-values* well below 1 percent.

Table 5: Sample Selection and Non-linearities

Outcome:	(1)	(2)	(3)	(4)	(5)	(6)
	Enlisted Men / Adult Male Pop $_{1860}$			*log: Enlisted Men*		
Forty-Eighters$_k$	40.811***	3.005***	21.282***	2.109***	0.221***	0.896***
	[0.001]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Forty-Eighters$_k$ Squared	-7.305**		-1.232***	-0.482***		-0.045***
	[0.043]		[0.000]	[0.000]		[0.000]
Controls-Selection:	all	all	all	all	all	all
Sample		+ big 7	+ big 7		+ big 7	+ big 7
fixed effects:	state	state	state	state	state	state
Observations	4,324	4,331	4,331	4,324	4,331	4,331
R-squared	0.208	0.200	0.210	0.613	0.614	0.615

Notes: The table reports results from regressions of a town's share of enlisted adult men (columns 1–3) or the log of enlisted men (columns 4–6) on the *Forty-Eighters* treatment. The treatment sums the number of *Forty-Eighter*-years per town and standardizes the measure by the maximum exposure of 11 years such that a value of 1 refers to a town where one *Forty-Eighter* settled in 1850 and stayed there until the outbreak of the Civil War. See expression (2). Columns 1 and 3 (4 and 6) additionally include the square of the treatment variable to account for nonlinearities in the *Forty-Eighter* effect. Columns 2 and 3 (5 and 6) extend the sample by including the seven large cities were more than eight Forty-Eighters lived. Standard errors are clustered at the county-level. *p-values* are reported in square brackets.
*** p<0.01, ** p<0.05, * p<0.1.

Voting for the Republican Party: Anecdotes suggest that the *Forty-Eighters* played an important role in generating support for the Republican Party in German-American communities. Earlier German immigrants opposed the Republican Party because many Republican leaders had ties to the nativist *Know Nothings*, an anti-immigrant during the 1850s.[22] Nevertheless, authors like Thompson and Brown (page 137-8 in Zucker, 1950) claim that the *Forty-Eighters* helped mobilize a critical mass of German-Americans who supported Lincoln's election in 1860. This opinion is echoed in an article by a correspondent for the *New York Herald* reporting from Springfield, Illinois, on December 9, 1860: "In Ohio, Illinois, Indiana, Iowa, and Wisconsin, native Republicans now openly acknowledge that their victory was, if not wholly, at least to a great extent, due to the large accessions they received in the most hotly contested sections from the German ranks." Unfortunately, we can only estimate the effect of the *Forty-Eighters* on voting outcomes at the county level.[23] We report county-level voting results in Online Appendix D Table 2. They suggest a pro-

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[22]The *Know Nothings* were particularly hostile to German immigrants. One of their pamphlets stated they "were driving 'white people' out of the labor market, and, 'with their garlic sausage, sauerkraut and beer', forced Americans to accept a lower standard of living" (Wittke, 1970, p.183).

[23]We attempted collecting voting outcomes at the level of *electoral districts* as more disaggregate unit of analysis. For example, Alsan, Eriksson, and Niemesh (2018) use this level of analysis in Massachusetts to study the rise of the *Know-Nothings* in that state in the 1850s. However, it turns out that in most states electoral districts are in fact larger than

nounced effect of the *Forty-Eighters* on the 1848–1860 change in the vote share of the Republican Party. We take these estimates as supportive evidence but caution that the county-level analysis might cover up relevant town-level variation and cannot achieve as good a balance between treatment and control units.

Mechanisms: We next investigate *how* the *Forty-Eighters* may have affected men's willingness to risk their lives in the Civil War. We focus our attention on two specific channels that have been emphasized in the historical narrative surrounding the *Forty-Eighters*: their involvement in (*i*) journalism and in (*ii*) grassroots political organizations, particularly the Turner Societies. To establish these mechanisms, we exploit different data sources. Data on the formation of Turner Societies stems from the nationwide *Turner Society Foundation*'s yearbook (Metzner, 1894). We used this publication to code the history of U.S. Turner Societies.[24] To investigate the *Forty-Eighters'* effect on newspapers, we peruse three sources: The earliest survey of U.S. newspapers after the *Forty-Eighters'* arrival is the first volume of *Rowell's Newspaper Compendium*, published in 1869. We digitized this first volume and located all newspapers at the town level. It is obviously critical to control for the existence of newspapers before the *Forty-Eighters'* arrival. Second, Kennedy (1852) fortunately created a universal survey of U.S. newspapers as part of the 1850 Census, i.e. just before the *Forty-Eighters'* arrival.[25] Third, for the German-speaking press, we perused Arndt (1965), which includes the full history of the German-American press.[26] From this source, we measure the circulation of German-speaking newspapers and journals at the town level in 1850 and in 1869 to mirror the data for the English-language press.[27]

Table 6 investigates these mechanisms. For each outcome, we rerun the most conservative specification with all controls, i.e. columns 6 and 12 in Table 3. Columns 1–2 show that in a town where a *Forty-Eighter* settled, the likelihood that a Turner Verein was founded sometime between 1849 and 1861 was 14 to 16 percent higher. Columns 3–4 show that in a town where a *Forty-Eighter* settled, the number of German-language newspapers increased by around 0.26. A literal reading of this coefficient would suggest that every fourth *Forty-Eighter* founded a new newspaper, and although we cannot be entirely sure that this is true, the number seems eminently reason-

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counties and we cannot gain finer granularity across all states. For more details, see Online Appendix D.

[24]See Appendix A.8 for details.

[25]To our knowledge, this is the only time the Census collected this information in the 19th century.

[26]Arndt lists all German-language newspapers and political journals, including the dates of their first and last issues.

[27]See Appendix A.9 for additional details.

Table 6: Effect of *Forty-Eighters* on Turner Society Foundations and Newspapers

	(1)	(2)	(3)	(4)	(5)	(6)
Outcome:	*D(Turner Soc. Found)*		*# German Newspapers $_{1869}$*		*# U.S. Newspapers $_{1869}$*	
Forty-Eighters$_k$	16.723**	13.778**	0.263***	0.225***	0.103	0.097
	[0.019]	[0.036]	[0.000]	[0.000]	[0.248]	[0.307]
Lagged Outcome $_{1850}$			1.033***	1.031***	0.992***	0.968***
			[0.000]	[0.000]	[0.000]	[0.000]
Controls #	-	all	-	all	-	all
fixed effects:	state	state	state	state	state	state
Observations	4,324	4,324	4,324	4,324	4,324	4,324
R-squared	0.342	0.699	0.827	0.860	0.677	0.793

Notes: The table reports results from regressions of an indicator variable that takes the value 1 if a Turner Society was founded in the town sometime between 1849 and 1861 (columns 1–2), the number of German-speaking newspapers in 1869 (columns 3–4), and the number of English-language newspapers in 1869 (columns 5–6) on the *Forty-Eighters* treatment. The treatment sums the number of *Forty-Eighter*-years per town and standardizes the measure by the maximum exposure of 11 years such that a value of 1 refers to a town where one *Forty-Eighter* settled in 1850 and stayed there until the outbreak of the Civil War. See expression (2). Odd columns are conditional on state fixed effects and even columns include the full set of controls from our preferred specification in Table 3, column 6. Columns 4–5 additionally include a control for the number of German-speaking newspapers in 1850 and columns 5–6 include the corresponding number of English-language newspapers in 1850. Standard errors are clustered at the county-level. *p-values* are reported in square brackets. *** p<0.01, ** p<0.05, * p<0.1.

able given the *Forty-Eighters*' well-documented penchant for founding newspapers (in addition to becoming editors of existing ones). However, we acknowledge that the newspaper effect does not necessarily have to proxy for civic leadership per se. To some extent, the estimated effect also reflects the fact that publishing became many *Forty-Eighters*' occupational choice.[28] Interestingly, the estimated effect on the English-language press reported in columns 5–6 is much smaller and consistently insignificant. This is consistent with the historical record, which suggests that *Forty-Eighters* rarely founded English-language newspapers, although they did frequently work for existing ones (Wittke, 1973). One could even push this argument further to argue that the lack of an effect in columns 5–6 is further evidence that the *Forty-Eighters* did not selectively settle into locations that were becoming more politically engaged overall.

Results by Ethnic Group: We now investigate *whom* the *Forty-Eighters* influenced to enlist

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[28] It is noteworthy that German newspapers are also the only outcome that is significantly impacted by the *1849–1852 All German Arrivals* variable. This is to be expected because newspaper circulation responded to changes in demand. Or, as (Tóth, 2014, p.205) puts it: "[The *Forty-Eighters*] played key roles in shaping German American public opinion. Newspapers proliferated, however, primarily, because along with new authors came a new readership. The number of German American periodicals rose not only because suddenly the number of Germans grew who were willing to edit and publish them but also because the hundreds of thousands of immigrants arriving at this time greatly increased an already existing demand for German-language newspapers."

in the Union Army. It seems likely that the *Forty-Eighters'* effectiveness was most concentrated in German-American communities. Nonetheless, it is also clear that the *Forty-Eighters* were not content with limiting their influence to German-American communities. This is why they participated in the broader political movements of the time, in particular the Republican party and the abolition movement (Curti, 1949; Zucker, 1950; Wittke, 1970; Baron, 2012). Decomposing the effect of the *Forty-Eighters* by immigrant group is not straightforward, because the Union Army enlistment data contains no information about soldiers' country of origin or birth.

We therefore used the full 1860 U.S. Census (where we observe country of birth) to train a machine learning algorithm that predicts soldiers' ancestry, which is unreported in the Adjutant General's Reports. (For a detailed description of the machine-learning algorithm, see Online Appendix E.) We then apply this algorithm to the Union Army data to generate army enlistments by town for the big four immigrant groups (German, Irish, Italian and Scandinavian), as well as for American men. We then divide the predicted, group-specific enlistment numbers by a town's group-specific adult male population, which we glean from the 1860 Census.

We end up with just over 300,000 German soldiers, a marginally smaller number of Irish soldiers, and just short of 100,000 Scandinavians. While this could not be hitherto confirmed in the data, Gould (1869) had also argued that Germans were the largest group of foreign-born soldiers in the Union Army. We note that most towns in the 1860 Census have some Irish and German populations, while we observe significantly fewer towns with Scandinavian-born individuals. Finally, less then ten thousand soldiers end up being coded as Italians, and fewer than 200 towns have an Italian population in the 1860 Census.

Table 7 reports the results of this exercise. We limit ourselves to reporting the log results because the machine-learning predictions generate too much noise in the per capita estimates where the denominator is also ancestry-specific. The top panel includes only the core controls, while the bottom panel includes the full set of controls. In addition, we add the log of the ancestry-group's male adult population as an important new control. The main observation in Table 7 is a clear gradient: As expected, the *Forty-Eighters* had the strongest effect on German-Americans. The second-biggest effect was on the two large English-speaking groups, Americans and Irish immigrants (both of which were present in more towns than Germans). The effect is smaller for Scandinavian men, and smallest (and least significant) for Italian men. Comparing results across panels shows

that including all controls generally leads to larger estimated coefficients if the enlistment outcome is ancestry-specific. More important, however, is that the relative gradient observed across columns is the same in the top and bottom panels. The observed gradient is consistent with existing evidence that ethnicity and ancestry can form an important barrier to the diffusion of beliefs and social norms (Spolaore and Wacziarg, 2009).

Table 7: Decomposing the Effect on Enlistments by Ancestry Group

	(1) Germans	(2) American	(3) Irish	(4) Scandin.	(5) Italian
Forty-Eighters$_k$	0.952***	0.721***	0.720***	0.584***	0.531*
	[0.000]	[0.000]	[0.000]	[0.003]	[0.050]
Controls #	core	core	core	core	core
Observations	3,737	4,281	4,050	851	192
R-squared	0.590	0.645	0.591	0.538	0.694
	(6) Germans	(7) American	(8) Irish	(9) Scandin.	(10) Italian
Forty-Eighters$_k$	0.850***	0.607***	0.575***	0.397**	0.381
	[0.000]	[0.000]	[0.003]	[0.028]	[0.150]
Controls #	all	all	all	all	all
Observations	3,737	4,281	4,050	851	192
R-squared	0.609	0.665	0.614	0.591	0.745

Notes: The table reports results from regressions of different ancestry groups' enlistment shares on *Forty-Eighters* treatment. We employ machine learning techniques to identify men of German, American, Irish , Scandinavian, and Italian origin. The top panel shows results where we consider only the set of core controls, and the bottom panel includes the full set of controls from our preferred specification in Table 3, column 6. Additionally, we control for the log of the ancestry-group's male adult population. Standard errors are clustered at the county level. *p-values* are reported in square brackets. *** p<0.01, ** p<0.05, * p<0.1.

One concern is that the machine-learning algorithm is trained on birthplaces of men in the Census, which is not quite the same as ancestry. This implies that in the training dataset, second-generation German immigrants (i.e. the U.S.-born children of German immigrants) are coded as American, which can blur the line between the two groups. To address this, we also trained the machine-learning algorithm to identify second-generation immigrants and assign them to their immigrant ancestry group. Unsurprisingly, this increases the number of men of all immigrant groups and reduces the number of American-born men. However, it had no appreciable effect on the results reported in Table 7, suggesting they are not biased by our initial approach to train the

algorithm to predict ancestry from birthplace data.

Convictions in Battle: Roughly one-third (149) of the *Forty-Eighters* actually enlisted in the Civil War.[29] The leadership literature suggests that effective leaders are characterized by their conviction, resoluteness, and a sense of direction, combined with a willingness to lead by sacrifice and lead by example (Bolton et al., 2012; Dewan and Myatt, 2008; Hermalin, 1998). One may therefore expect that *Forty-Eighters* who themselves enlisted would have a larger effect on enlistment. We test this hypothesis in Table 8. The evidence is mixed at best. Column 1, which focuses on per capita enlistments, actually suggests that *Forty-Eighters* who themselves enlisted had a lower effect on the share of enlistments $(17.566 < 20.407)$. Column 2 does suggest a larger effect when the log of enlistments is considered, but this is only marginally significant. A simplistic prediction of 'leading by sacrifice' therefore seems to miss some key realities of the enlistment process in this data. In fact, a deeper reading of the historical enlistment process suggests that the primary driver of enlistment among the *Forty-Eighters* was military experience and not resoluteness. Most of them would have been in their late forties or early fifties in 1861, a fairly old age by the standards of the time, and certainly too old to take up arms for the first time. In fact, the enlistment agencies discouraged men above 45 from enlisting, except in the case of commissioned officers with military training (Costa and Kahn, 2003, ch.5).

Digging further into the historical enlistment process reveals an interesting heterogeneity. The basic 'enlistment unit' of the Union Army was a regiment of ten companies.[30] Regiments were typically raised locally, and the recruitment effort was headed by local leaders who had to obtain a commission from the state government that entitled them to do so (Costa and Kahn, 2003, ch.5). A commissioned officer who succeeded in raising a full regiment, or at least the majority of a regiment, would usually lead that regiment with the rank of colonel. Stories abound of regiments led by a colonel who was the town mayor, doctor or school principal. We know the enlistment rank of each soldier in our data, and we can identify 29 *Forty-Eighters* who enlisted as colonels,

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[29] While we have much biographical information on the *Forty-Eighters*, we do not have it for all *Forty-Eighters*. For the ones where we do have information, we cannot be sure that we have no gaps in their biographies. For example, we know of many *Forty-Eighters* who worked for or founded newspapers, but we have no way of verifying that we know of all *Forty-Eighters* who worked for newspapers. By contrast, in the case of Civil War involvement, we observe the universe of Union Army soldiers, which we carefully gleaned for matches to the 493 *Forty-Eighters*. We therefore know precisely that 149 of them were in the Union Army. For 85% of them, we already knew this from the biographical sources before inspecting the Union Army data. It is worth noting that the biographical sources never falsely reported a *Forty-Eighter* as being in the Union Army.

[30] By contrast, a company of 100 men (led by a captain) was the basic 'fighting unit' McPherson (2003, p.85).

i.e. as the head of their regiment.[31] Once we split those *Forty-Eighters* who fought in the Civil War into colonels and non-colonels, we get a much cleaner picture. As apparent from columns 3–4, *Forty-Eighters* who themselves enlisted and who successfully raised local regiments indeed had the highest impact on local enlistment. By contrast, the other enlisted *Forty-Eighters*, some of whom enlisted in one of the 29 regiments led by a *Forty-Eighter*, had no effect on enlistment. This suggests that splitting the *Forty-Eighters* who themselves enlisted in this way separates the successful from the unsuccessful civic leaders in our context. By contrast, among the *Forty-Eighters* who did not enlist we do not have this separation and we observe the average effect.

Table 8: *Forty-Eighters* Who Enlisted

	(1)	(2) log:	(3)	(4) log:	(5)	(6)
Outcome:	Enlisted Men / Pop	Enlisted Men	Enlisted Men / Pop	Enlisted Men	D(Turner Soc.)	D(Turner Soc.)
Forty-Eighters who didn't enlist	22.983***	0.610**	23.144***	0.814***	15.544**	15.332**
	[0.000]	[0.019]	[0.000]	[0.001]	[0.031]	[0.031]
Forty-Eighters who enlisted	17.556	1.222*			1.188	
	[0.159]	[0.091]			[0.927]	
Forty-Eighters who raised regiments			48.063***	3.010***		-0.117
			[0.000]	[0.000]		[0.788]
Forty-Eighters who enlisted			1.015	0.636		1.503
			[0.942]	[0.425]		[0.935]
Controls #	all	all	all	all	all	all
fixed effects:	state	state	state	state	state	state
Observations	4,324	4,324	4,324	4,324	4,324	4,324
R-squared	0.156	0.606	0.182	0.588	0.127	0.131

Notes: The table reports results from regressions of enlistment shares (columns 1 and 3), the log enlistments (columns 2 and 4) and an indicator variable for a Turnverein (columns 5 and 6) on different definitions of the *Forty-Eighters* treatment. Columns 1–2 distinguish between *Forty-Eighters* who did enlist and those who did not enlist. Columns 4–6 further distinguishes *Forty-Eighters* who did enlist into those who successfully raised local regiments and those who did not. Standard errors are clustered at the county-level. *p-values* are reported in square brackets.
*** p<0.01, ** p<0.05, * p<0.1.

Nonetheless, one may be surprised that the effect of *Forty-Eighters* who did not enlist was not at least somewhat lower than the overall average effect. When we also split the effect on Turner Societies (our best proxy for local political involvement) by those who themselves enlisted, we

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[31]The two highest-ranking soldiers among the *Forty-Eighters*, Albin Schoepf and Carl Schurz, were *brigadier generals*, lower-ranked generals who commanded collections of regiments called brigades.

find that those who did not enlist had the biggest effect on this outcome (columns 5–6). This is noteworthy because Turner Societies themselves were active drivers of Union Army enlistment (Levine, 1980, p.256). This suggests that two different leadership styles prevailed among the *Forty-Eighters*. Indeed, it is likely that the division between those who did and did not themselves enlist is simply a continuation of the two ways in which the *Forty-Eighters* had been involved in the German revolutions. Some had been military officers who took up arms on the side of the revolutionaries.[32] But most *Forty-Eighters* had no military training in Germany and had not been involved in military engagements in Germany. Instead, they had led the revolutions on the political front. The evidence presented here does not imply that Hermalin's emphasis on leading by sacrifice or leading by example is incorrect, it merely implies us that there is more than just one set of characteristics that make a successful civic leader. While we cannot shed further light on this with the data at hand, the *Forty-Eighters* who did not enlist may have been as driven, purposeful, persuasive and resolute as those who did enlist.

All results reported so far suggest that the *Forty-Eighters* succeeded in shifting men's convictions to a degree that they were more willing to risk their lives for them. We now turn to asking if the 149 *Forty-Eighters* who themselves enlisted also had a discernible effect on men's loyalty to the Army in battle commenced. The obvious way to measure soldiers' loyalty to their convictions is to follow Costa and Kahn (2003) and look at their propensity to desert. We focus on the 1.6 million Union Army soldiers who neither died nor were discharged due to wounds, and ask whether the presence of one of the *Forty-Eighters* in their military units affected their likelihood of desertion. The alternative to desertion is essentially to see out one's enlistment terms after which a soldier was 'mustered out'.[33]

The basic fighting unit in the Army was a company consisting of 100 men; e.g. Costa and Kahn (2003) used a sample of 303 randomly drawn companies, corresponding to just over 30,000 men. McPherson (2003, p.85) surveys the literature on combat motivation and also argues that "primary group cohesion" was to be found at the level of the company. This gives rise to our prior, that leadership should have been most effective at the company level rather than the regiment

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[32] While we have no systematic data on their military training in Germany, we find a strong correlation between (possibly incomplete information on) having been involved in military altercations during the 1848 revolution and enlisting in the Civil War.

[33] In total, 7.5 percent of all soldiers deserted, amounting to a total of 75,365.

level. To get a better sense for leadership in the battle, we split the *Forty-Eighters* into three groups: *colonels* (leaders of regiments), *captains* (leaders of companies), and common soldiers (mostly *privates*). Let i identify a soldier, c his company, and r his regiment. We then have three treatments: *Forty-Eighter$_{ir}$* for having a *Forty-Eighter* as *colonel* (regiment leader), *Forty-Eighter$_{ic}$* for having a *Forty-Eighter* as *captain*, and, with a slight abuse of notation, *Forty-Eighter$_{ij}$* for having a common soldier in one's company who was a *Forty-Eighter*. It is worth noting that there was not a single company with more than one *Forty-Eighter* in the Union Army.

With these measures in place, we regress soldier i's loyalty in the Union Army on a range of individual and company-level controls as well as on the presence of a *Forty-Eighter* in his military unit, as follows:

$$\mathrm{D(Desert)}_i = \beta_{ir}\textit{Forty-Eighter}_{ir} + \beta_{ic}\textit{Forty-Eighter}_{ic} + \beta_{ij}\textit{Forty-Eighter}_{ij} + \alpha_i'\mathbf{X}_i + \alpha_c'\mathbf{X}_c + \epsilon_i. \quad (5)$$

The main individual characteristic in $\mathbf{X}_i$ is a soldier's observed rank. We capture it with two binary variables, one for officer and one for private; the omitted category includes all other ranks. The second important individual characteristic in $\mathbf{X}_i$ is soldiers' ancestry, as predicted by the machine-learning algorithm described above.

Company controls $\mathbf{X}_c$ include a company's final share of dead soldiers and final share of soldiers who were wounded badly enough to be discharged. We also calculated the same measures at the larger regimental unit; and we found regiment characteristics to always have the same sign and similar magnitudes as $\mathbf{X}_c$, but to be generally less significant. This is consistent with the previously stated view that the company was the basic fighting unit to which primary group cohesion was tied (McPherson, 2003; Costa and Kahn, 2003).

Table 9 presents the results of estimating equation (5). In column 1, we include only a soldier's rank, with officers being 8 percentage points less likely to desert than privates $(3.72 + 5.14)$, i.e. just about equal to the mean desertion rate rate in the data. In column 2, we include $\mathbf{X}_c$. As expected, seeing more killed and injured soldiers in one's own fighting unit lowered morale and increased the likelihood of desertion. Column 3 adds individual indicators for soldiers' inferred ancestry. All immigrant groups were more likely to desert than American men, but among the immigrant groups, Germans were the least likely to desert. This is consistent with other accounts: For exam-

Table 9: Desertion of Individual Soldiers

Outcome:	(1)	(2)	(3)	(4)	(5)
			D(Desertion)		
Forty-Eighter$_{ir}$ (colonel)				-0.39	-0.12
				[0.3895]	[0.7971]
Forty-Eighter$_{ic}$ (captain)					-2.12**
					[0.0194]
Forty-Eighter$_{ij}$ (private)					-1.51*
					[0.0793]
D(officer)	-3.72***	-4.27***	-4.25***	-4.24***	-4.24***
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]
D(private)	5.14***	4.59***	4.49***	4.49***	4.49***
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]
Company-Share Discharged		0.38***	0.37***	0.37***	0.37***
		[0.0000]	[0.0000]	[0.0000]	[0.0000]
Company-Share Dead		0.02	0.03**	0.03**	0.03*
		[0.1018]	[0.0415]	[0.0493]	[0.0508]
German Soldier			1.40***	1.43***	1.44***
			[0.0000]	[0.0000]	[0.0000]
Scandinavian Soldier			2.94***	2.95***	2.95***
			[0.0000]	[0.0000]	[0.0000]
Italian Soldier			4.17***	4.19***	4.19***
			[0.0000]	[0.0000]	[0.0000]
Irish Soldier			4.35***	4.36***	4.36***
			[0.0000]	[0.0000]	[0.0000]
Observations	1,632,782	1,632,782	1,632,782	1,632,782	1,632,782
R-squared	0.006	0.026	0.031	0.031	0.031

Notes: The table reports results from regressions of an indicator variable that takes the value 1 if a soldier deserted. Column 1 distinguishes whether a soldier was an officer, a private or as the omitted category had a low rank in between. Column 2 adds controls for the share of a soldier's company that had been killed or severely injured. Column 3 adds individual indicators for a soldier's ancestry (German, Scandinavian, Italian, or Irish). Column 4 introduces an indicator variable for whether a *Forty-Eighter* led a soldier's regiment. Column 5 distinguishes the effect on a soldier of have a *Forty-Eighter* lead his regiment (as a colonel), lead his company (as a captain), or fight in his company (as a private). Standard errors are clustered at the company level. *p-values* are reported in square brackets.
*** p<0.01, ** p<0.05, * p<0.1.

ple, Costa and Kahn (2003) also find that Germans were less likely to desert than other immigrants. They argue this is because "Germans who fled the revolutions of 1848 were more likely than Irish or British immigrants who migrated for economic reasons to view the United States as the best hope for the survival of a form of republican government." In column 4, we first introduce only *Forty-Eighter*$_{ir}$, with the rationale that this gives us the most pronounced effect at the point of enlistment. However, having a *Forty-Eighter* as the leader of a regiment turns out to not significantly reduce desertion, although it is at least sign-consistent. In column 5, we introduce all three measures: *Forty-Eighter*$_{ir}$, *Forty-Eighter*$_{ic}$, and *Forty-Eighter*$_{ij}$. Consistent with the literature on combat motivation, having a *Forty-Eighter* who is the leader of one's basic fighting unit mattered the most for morale. *Forty-Eighter*$_{ic}$ is associated with a 2.1 percentage point reduction in the likelihood of desertion, which is large relative to a baseline desertion probability of 7.5 percentage points. Even the peer effect of having a *Forty-Eighter* as a soldier in one's company mattered more than the regimental leader, underscoring the importance of the company as the basic fighting unit.

6   Discussion and Conclusion

A growing body of theoretical literature on social networks points to the importance of leaders in the formation and equilibrium selection of social norms, beliefs, and convictions. However, while a rich empirical literature documents the importance of leadership inside organizations (e.g. companies or government institutions) practically no empirical evidence exists on the importance of civic leaders in society at large. This paper fills the gap and estimates the effect of civic leadership on individual beliefs and social norms.

The *Forty-Eighters*' active participation in the German revolutions of 1848 and 1849—the cause of their subsequent expulsion—shows the strength of their convictions and clearly establishes the nature of these convictions. Their haphazard arrival in the United States provides us with quasi-experimental variation in their spatial distribution across destination regions; and their political convictions in Germany clearly mapped into those in the U.S., where they engaged in the struggle to abolish slavery. Our main outcome is voluntary enlistment for the Union Army in the Civil War, which, given the high death toll, provides a powerful measure of social convictions. Our empirical analysis then asks what effect the *Forty-Eighters* had on enlistments in their local communities.

Using a number of identification strategies, we show that U.S. towns where *Forty-Eighters* settled in the 1850s had sizeably larger enlistments for the Union Army. The presence of a *Forty-Eighter* increased enlistments by 20 per 100 adult men, roughly the mean level of enlistment.

To better understand the cultural gradient of the *Forty-Eighters'* influence on social norms, we use machine-learning techniques to infer soldiers' nationality. We find that the *Forty-Eighters* had their biggest impact on the enlistment of German-American men in the Civil War, their second-biggest impact on English-language groups (American and Irish), and their smallest impact on Scandinavian and Italian men. We find evidence of two distinct leadership styles among the *Forty-Eighters*: those who themselves enlisted had a big effect if they were successful in raising their own regiments. But those who did not themselves enlist were almost as influential, with the evidence suggesting they were the more influential in the formation of grass-roots local social clubs.

In summary, this paper provides the first rigorous empirical evidence for the importance of 'civic leadership' in shaping social norms, beliefs, and convictions. It does so using a well-defined set of civic leaders, a clear mapping between their objectives and society's response, and by studying an outcome that is individually costly and thus a meaningful reflection of personal beliefs and norms.

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Appendix A   Data

Appendix A.1   The *Forty-Eighters*

We started with the 318 accounts listed in the explicitly biographical book by Zucker (1950). We complement this source with names from Wittke's (1970) book on the *Forty-Eighters'* influence in U.S. politics, which includes over 400 individual names. Raab's (1998) index of revolutionaries in the German state of Baden gives us another 43 names. Finally, Baron's (2012) book includes a name index with over 300 *Forty-Eighters*. All three sources overlap in large part with Zucker (1950), but each also contains some new names. In total, we end up with a list of just over 500 individuals, and we use `Ancestry.com` to follow these individuals over their life and code their locations in Germany and the United States. We can locate 493 in the towns they settled in. In Online Appendix B, we list in abbreviated form the biographies of the *Forty-Eighters*.

Appendix A.2   The Fishman (2009) Town Data

We peruse *Population of Counties, Towns, and Cities in the United States, 1850 and 1860* (Fishman, 2009). This data was coded up by Fishman (2009) as part of Robert Fogel's Early Indicators Project. It contains 11,964 towns (excluding the South and West). However, only 7,294 of these towns are reported in the 1850 and 1860 Censuses. The ones that are reported in only one of the two years are typically small towns that had disappeared by 1860 or towns that had been founded between 1850 and 1860. We thus only retain the 7,294 towns that are reported in both years.

Appendix A.3   Civil War Volunteering

The reports of the Adjutant General's Office reported each state's enlistment *registers*, which list soldier names, their residences, enlistment places, and enlistment dates. The same office published information on the *rosters* of its regiments and companies. We thank Yannick Dupraz and Andreas Ferrara for generous data-sharing and joint efforts in collecting the Civil War soldier and regiments data. From these reports, we have data on over 2 million soldiers, the entire Union Army. For each soldier, we know their enlistment date, their regiment and company, and volunteering status (95%). For most individuals, we also know their place of residence (city and county). For over half of the soldiers, we were able to directly locate them in a town in our dataset. For 200,000, we could locate them only in a county and then assigned them to the county's towns according to population-shares. For the remainder, we did not have location information, for the most part because certain states rarely reported it. But we always had regiment information for every soldier. Based on the over 1 million soldiers where we had location information, we assigned each of 2,328 regiments a distribution of towns from which it drew men. (The average regiment drew men from eight towns.) We then allocated the men with no location information into towns based on his regiment's fractions. Because locating enlistees to towns based purely on their regiments known distribution of residence is far more noisy than directly observing a soldier's location, we always weight regressions by the share of a town's enlisted soldiers who directly reported their home town. For a substantial subset of towns, this share is zero, so that these observations receive zero weight in the regressions. We therefore further prune our base sample to include only those 4,331 towns that are reported as soldiers' hometowns in the data. Table 10 shows how these towns are distributed across states.

Table 10: Sample of Towns

#	States	#Towns	in %	#	States	#Towns	in %
1	Delaware	4	0.09	10	Missouri	63	1.45
2	Illinois	309	7.12	11	New Hampshire	35	0.81
3	Indiana	631	14.55	12	New Jersey	36	0.83
4	Iowa	134	3.09	13	New York	678	15.63
5	Kentucky	7	0.16	14	Ohio	836	19.27
6	Maine	46	1.06	15	Pennsylvania	805	18.56
7	Maryland	3	0.07	16	Rhode Island	10	0.23
8	Massachusetts	46	1.06	17	Vermont	45	1.04
9	Michigan	422	9.73	18	Wisconsin	228	5.26

Notes: Total number of towns: 4,331.

Appendix A.4   Historical City Level Controls

At the city level, we observe only population counts by race and gender, from Fishman (2009). We thank Michael Haines for sharing his cleaned version of the 1850 and 1860 town-level data. In addition, we geo-coded the location of all towns, which allows us to calculate a rich set of geographic location factors. These include longitude and latitude, log elevation, the mean temperature and precipitation, and the following set of (log) distance variables: distance to the coast, to the next navigable river, and the railway network in 1850 (provided by Atack, 2015). A novel control variable that we are introducing for this paper is *Metzler's Map for Immigrants*; see Figure A1. This map was published in Germany in 1853 to show emigrants the main travel routes across the ocean to the U.S. and within the U.S. along with some information about fares. Based on this map, we calculate all cities' distance to the nearest city on Metzler's map.

Appendix A.5   The *Germans to America* Data and Mapping it to the 1860 U.S. Towns

Here we describe the matching process that merges the *Germans to America* passenger arrival lists with Germans in the full-count 1860 Decennial U.S. Census. The algorithm performs the following steps:

1. clean name and location information

2. split the sample into male and female sub-samples

3. use Stata's `reclink2` command (Wasi, Flaaen, et al., 2015) to match passenger list and Census information via bi-gram based on

   - first name [6] and last name [16]
   - age in 1860 [14]
   - first letter of first name [3] and last name [3] (blocking variables)

   where numbers in brackets are the relative weight with which each variable enters the matching algorithm.

Figure A1: Metzler's Map for Immigrants

Notes: This map depicts the second edition of *Metzler's Auswanderer Karte*, published in 1853.

4. assess match quality by computing

- the token soundex of first and surname
- the age difference between passenger and Census match

and keep those matches where the token soundex of both first and surname is non-zero and the age difference is within a ± 2 years interval.

Step 1 helps to improve the match quality. Step 2 reduces the dimension of the matching problem. Step 3 matches names of individuals in the passenger lists and the Census by computing a bi-gram score. The choice of matching variables was mainly determined by information that was available in both datasets. First name, last name, and age are typical quantities to match on (e.g. Feigenbaum (2016)). Note that we did not transform the names by using the soundex or NYSIIS algorithm. While transforming names into phonetic codes helps with spelling mistakes,[34] it also removes useful information. Mikail and Michael will have the same soundex code because they sound similar even though one name is probably of Russian origin whereas the other one is not. It has been shown that matching on soundex- or NYSIIS-transformed names typically performs worse than matching on untransformed names (Bailey, Cole, Henderson, and Massey, 2017).

The choice of weighting different variables is somewhat arbitrary. There is more variation in surnames than first names, hence the difference in information content motivates the difference in weights but there is no explicit guidance on the use of weights. Wasi et al. (2015) and the documentation of the Stata command `reclink2` provide a discussion.

Blocking on the first letter of first and surname reduces the dimension of the matching problem but will miss individuals who have a typo in the first letter of their names.[35] Otto will match with Otho but not with Utto.

Step 4 seeks to reduce the false positive rate, i.e. matches that were made but which are not correct. Matches were dropped if the soundex of first and surname was zero, and if the matched Census observation was outside a ± 2 years interval around the age of the corresponding passenger. Hence matches of John Smith aged 31 with Henry Smith (31) or John Smith (35) would have been discarded while a match with John Smith (32) would have been kept. Such criteria are also used in the machine learning algorithm by Feigenbaum (2016) even though he applies these filters before performing the match in order to reduce the dimensionality of the matching problem.

Because of a lack of one gold standard method for performing record linkage, there are several different algorithms which are often tweaked and altered by following applications. We discuss these in in Online Appendix C.

Appendix A.6   Historical County-Level Controls

We use the following 1850 county-level controls from the *Historical, Demographic, Economic, and Social Data: The United States, 1790-2002* (Haines, 2010):

- Economic: urbanization, manufacturing employment and output, farmland's share of area, farm equipment value

- Demographic: population size, foreign born, German-born, churches

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[34]Phonetic codes assign a unique code to names that sound similar. For example, the soundex code `C365` includes Catharina, Catharine, Cathrin, Cathrine, ...

[35]Blocking means that a potential match has to agree on certain criteria to be considered as a valid match. Observations which do not agree on the chosen criteria are discarded and the dimension of the matching problem is reduced. Blocking is commonly used in record linking (see Sariyar and Borg (2010).

Appendix A.7 Balancing Tests for Full Sample

Table 11 reports the equivalent to Table 2 in the paper's body, with the seven towns with a large number of *Forty-Eighters* added.

Appendix A.8 *Turner Societies*

German immigrants had a strong sense for cultural heritage, and social organizations as they knew them from home were one way to preserve this heritage. These clubs included card clubs, music societies, sharpshooter organizations, library associations, and so-called *Turnvereine* ('Turner Societies'). The latter were probably the most prominent kind of social clubs, and certainly the most political ones. Many *Forty-Eighters* were members of them if not their founders. One of the first Turner Societies was founded in Cincinnati in 1849 by Friedrich Heckler, a prominent *Forty-Eighter* who had led the revolution in the German state of Baden (Barney, 1982). Subsequently, more Turner Societies were founded across the entire U.S., thus creating a social network with substantial political leverage.

The origin of the Turner Society goes back to Friedrich Ludwig Jahn—sometimes referred to as *Turnvater* Jahn—who defined gymnastic principles for physical fitness. He opened a first outdoor gymnasium (*Turnplatz*), in Berlin-Hasenheide in 1811 and the Turner movement spread quickly to other locations in Germany. What sounds like a leisure movement focused on athletics was in reality a highly political movement. Jahn was a patriot who believed that physical education would raise young gymnasts physical and moral powers and their sense for national identity. In this way, he was hoping to prepare them for military service and the liberation of the German lands from Napoleon and France. But Jahn was also a liberal thinker who dreamed of overthrowing the feudal order of serfdom and reorganizing Germany into a unified nation state, a republic. While the Prussian authorities supported the first purpose, they were less impressed with the nationalist movement and banned *Turnen* between 1819-1842. After the ban was lifted, Turner Societies became centers of political discussions and activities and it is not surprising that they were the breeding ground for the revolution. Many *Forty-Eighters* were members of the Turner Societies in Germany.

Upon their arrival, the *Forty-Eighters* established the Turner movement in the United States, and the nationwide Turner network helped them spread their liberal ideals. Among their main goals was to fight American nativism and to abolish slavery. Consequently, most Turners were active supporters of the newly founded Republican Party during the 1850s and 60s. Among others, they helped protecting anti-slavery activists during public speeches; Turners were Lincoln's bodyguards for his first inauguration (Zucker, 1950; Baron, 2012) and when the Civil War started in 1861, they formed special "Turner Regiments" (Hofmann 1995, p.158, Wittke 1970, p.225 estimates that 60 percent to 80 percent of the Turners enlisted for the Civil War.

Appendix A.9 Newspapers

Our individual biographies show that a significant number of *Forty-Eighters* had a journalistic background and either took over editorial positions in existing U.S. newspapers or started their own outlets. Bergquist (1987, p.136) argues that while "only few *Forty-Eighters* had been journalists in Germany, upon immigration, the most accessible opportunities for them often lay in the expanding world of journalism."

For the German-language press, we separately coded up the full history of the German-American

Table 11: Balancing test for the full sample

	Unconditional		Conditional		PSM	
	Coeff.	p-Val.	Coeff.	p-Val.	Coeff.	p-Val.
Controls Core						
Town : log Population $_{1850}$	0.765*	[0.092]	-	-	-0.019	[0.967]
Town : log Population^2 $_{1850}$	11.771*	[0.071]	-	-	0.630	[0.927]
Town : Share Germans $_{1850}$	0.033**	[0.022]	-	-	-0.051	[0.230]
Town: Δ Count Germans $_{1850-60}$	0.047	[0.267]	-	-	0.048	[0.221]
Town : German Arrivals $_{1849-52}$	7.041**	[0.019]	-	-	4.441*	[0.063]
Town : log Dist Metzler Towns	-0.544	[0.169]	-	-	0.184	[0.683]
Controls Town						
Town : Share Slaves $_{1850}$	-0.004	[0.318]	-0.006	[0.198]	0.000	[0.622]
Town : Share White Female $_{1850}$	0.006	[0.594]	0.012	[0.398]	0.011	[0.240]
Controls Geography						
Town : log Dist Navigable River	-1.278*	[0.057]	-0.404	[0.328]	-0.350	[0.531]
Town : log Dist Railway	-0.378	[0.150]	-0.208	[0.510]	0.197	[0.587]
Town : log Dist Ports (weighted)	-0.047**	[0.039]	-0.049	[0.172]	0.045	[0.130]
Town : Mean Temperature	0.492	[0.132]	0.017	[0.980]	0.333	[0.307]
Town : Mean Precipitation	0.036	[0.296]	-0.015	[0.822]	-0.054	[0.310]
Town : log Dist Coast	-0.241**	[0.040]	0.160	[0.511]	-0.134	[0.401]
Town : log Elevation	-0.161***	[0.004]	-0.011	[0.939]	0.042	[0.733]
Town: Latitude	-0.131	[0.580]	0.058	[0.894]	-0.182	[0.450]
Town: Longitude	0.564**	[0.017]	0.621*	[0.051]	-0.447	[0.129]
Controls Economic						
County: log (Manuf Empl) $_{1850}$	0.009	[0.360]	-0.005	[0.526]	0.001	[0.949]
County: log($ Manuf Output) $_{1850}$	0.569*	[0.064]	0.084	[0.694]	0.126	[0.629]
County: log($ Manuf Value) $_{1850}$	0.562**	[0.033]	0.191	[0.359]	-0.121	[0.534]
County: Urbanization 25K+ $_{1850}$	0.020	[0.335]	-0.018	[0.356]	0.023	[0.283]
County: Urbanization 2.5K+ $_{1850}$	0.055	[0.199]	-0.046	[0.113]	0.018	[0.705]
County: Foreign-Born Pop $_{1850}$	0.074*	[0.051]	0.003	[0.923]	0.017	[0.616]
County: log($ Farm Value) $_{1850}$	0.076	[0.606]	-0.107	[0.743]	0.106	[0.582]
County: log($ Farm Equip Value) $_{1850}$	0.018	[0.872]	-0.142	[0.596]	0.066	[0.698]
County: log($ Farm Livestock Value) $_{1850}$	-0.117	[0.307]	-0.241	[0.302]	0.039	[0.825]
County: Share Farmland $_{1850}$	0.000	[0.615]	-0.000	[0.953]	-0.000	[0.622]
County: Churches 1850	9.066	[0.317]	-12.774	[0.123]	11.146	[0.275]
Observations	4,331		4,331		142	

Notes: The table shows estimated coefficients from separate regressions of the covariates on the *Forty-Eighters* treatment dummy and state fixed effects in columns 1–2 and the *Forty-Eighters* treatment dummy, state fixed effects and the core controls in columns 3–4. Columns 5–6 restrict the sample to treated locations and their five nearest neighbors in propensity-score space and regresses each covariate on the *Forty-Eighters* treatment dummy conditional on state fixed effects. All regressions are weighted by the share of enlistments without missing information in every town, and standard errors are robust.

press recorded in Arndt (1965).[36]

For the English-language press, Rowell's books have been entirely digitized and are available on the Library of Congress' website.[37] The first of Rowell's books was published for 1869. We found one earlier comparably universal survey of U.S. newspapers, which Kennedy (1852) had published as part of the 1850 Census. In combination with the first edition of *Rowell's Newspapers Compendium* in 1869, this gives us an idea of change in the number and circulation of newspapers in regions that experienced an inflow of *Forty-Eighters*.

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[36]Arndt lists newspapers and political journals by U.S. county, including the dates of their first and last issue.
[37]See http://lcweb2.loc.gov/diglib/vols/loc.gdc.sr.sn82007064/default.html.

Online Appendix

to

"Leadership and Social Norms:
Evidence from the *Forty-Eighters* in the Civil War"

Online Appendix A   The 1848–1849 Revolutions in Germany

Somewhat surprised by the revolutionary movement, rulers of smaller German states—what we know as Germany today comprised 39 independent states which were part of the German Confederation—were fast to give in. Eventually, also King Frederick William IV of Prussia agreed to pass a constitution, establish a parliament, and support German unification. In March 1849, almost one year after the beginning of the revolution, the Constitutional Assembly in Frankfurt issued a first constitution. It was designed as foundation of a liberal constitutional state with a strong parliament to control the government and the Prussian king at its head. 28 of the German states passed the constitution but the Prussian king, despite his earlier agreement, refused to "pick up a crown from the gutter" and rejected the constitution on 28 April 1849. In the following counter-revolution, the absolutist rulers fought the revolutionaries and re-established the situation before the March Revolution. After some last uprisings, most notably in Baden, Palatine, Saxony and Württemberg, the revolutionary momentum eventually abated in the summer of 1849.[38]

When the Prussian-led troops eventually quelled the last uprisings in the southwest of Germany, several thousand German revolutionaries escaped to Switzerland. There are different reasons why Switzerland was a good choice for the revolutionaries. Importantly, it was geographically close, considered a safe country of asylum, and, following the so-called *Sonderbund War* ('Sonderbundkrieg'),[39] Switzerland had already transformed into a federal republic with a democratic constitution. However, the substantial inflow of revolutionaries from German states, Italy and France presented a serious organizational and financial challenge to Switzerland. Even worse, the refugees presence raised concerns that Prussia and Austria could use their military power to force Switzerland to expel or deliver the revolutionaries. Faced with this threat, Switzerland put pressure on regular soldiers, who had little to fear, to return to their home countries. Leaders of the revolution like Gustav Struve, Lorenz Brentano or August Willich were expelled and, with the help of France, shipped to the United States. As a result, the number of German refugees in Switzerland decreased rapidly from more than 8350 at the beginning of September 1849 to roughly 2,000 in January 1850 and as little as 883 refugees in August 1850 (Jung, 2015; Nagel, 2012; Reiter, 1992). This expulsion is nicely illustrated in a cartoon (Figure 1) where Prussian soldiers led by Friedrich Wilhelm IV of Prussia sweep the revolutionaries out of Europe.

While the majority of revolutionaries emigrated straight to the United States, a smaller fraction went on exile in London, hoping to spark another revolution in Europe. However, with the French coup d'état of 2 December 1851 which lead to the proclamation of the Second French Empire, they abandoned this hope and many followed their comrades to the United States (Nagel, 2012). This explains why we observe a second wave of indigent immigrates of German heritage around that time.

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[38]See Dahlinger (1903), Valentin (1930) and Whitridge (1949) for seminal accounts of the revolutions of 1848–1849.

[39]The *Sonderbund War* ended the attempted succession of seven Catholic Cantons into a separate alliance ('Sonderbund') which was formed in opposition to a new Constitution for the Swiss Confederation proposed by the Protestant cantons.

Online Appendix Figure 1: Cartoon by Ferdinand Schröder on the end of the revolution in Europe in 1849

Notes: The political cartoon by Ferdinand Schröder titled "Rundgemälde von Europa im August MDCCCXLIX" shows how the absolutistic rulers force the *Forty-Eighters* to leave Europe on a boat from Le Havre. It was first published in *Düsseldorfer Monatshefte*, 1849.

Online Appendix B   Individual Biographies

Here we list all *Forty-Eighters* sorted by last name and (first name). We further list location information, i.e. each individual's town, county and state of residence at each point in time.

ALMSTEDT (HEINRICH) *1849-1870: Washington, DC, District Of Columbia; 1871-1884: Saint Louis, St. Louis, Missouri.* •

AMSBERG (GEORGE VON) *1859-1864: Hoboken, Hudson, New Jersey; 1865-1876: Jersey, Hudson, New Jersey.* •

ANGELRODT (ERNST) *1850-1869: Hermann, Gasconade, Missouri.* •

ANNEKE (EMIL P.) *1849-1850: New York, New York, New York; 1851-1855: Minersville, Schuylkill, Pennsylvania; 1856-1856: Detroit, Wayne, Michigan; 1857-1866: Lansing, Ingham, Michigan; 1867-1870: Grand Rapids, Kent, Michigan; 1871-1888: East Saginaw, Saginaw, Michigan.* •

ANNEKE (FRITZ) *1850-1872: Milwaukee, Milwaukee, Wisconsin.* •

ANNEKE (MATHILDE FRANZISKA GIESLER-) *1850-1884: Milwaukee, Milwaukee, Wisconsin; 1853-1865: Newark, Essex, New Jersey.* •

ANSCHUETZ (CARL) *1858-1870: New York, New York, New York.* •

ANSELM (ALBERT) *1852-1878: Davenport, Scott, Iowa; 1879-1902: Saint Louis, St. Louis, Missouri.* •

ARNOLD (FRANZ) *1850-1885: Chicago, Cook, Illinois.* •

AULENBACH (KARL) *1850-1881: Zanesville, Muskingum, Ohio.* •

BACKHOFF (FRANZ) *1852-1863: Saint Louis, St. Louis, Missouri.* •

BALATKA (HANS) *1861-1899: Chicago, Cook, Illinois.* •

BARUS (KARL) *1857-1902: Cincinnati, Hamilton, Ohio.* •

BAUER (CARL FRIEDRICH) *1850-1885: Pittsburg, Allegheny, Pennsylvania; 1886-1888: Milwaukee, Milwaukee, Wisconsin.* •

BAUER (LOUIS) *1850-1902: Saint Louis, St. Louis, Missouri.* •

BAUMBACH (LUDWIG VON) *1858-1883: Milwaukee, Milwaukee, Wisconsin.* •

BAYRHOFFER (KARL THEODOR) *1853-1888: Monroe, Green, Wisconsin.* •

BECKER (AUGUST) *1854-1860: Baltimore, Ind. City: Baltimore, Maryland; 1861-1871: Cincinnati, Hamilton, Ohio.* •

BECKER (GOTTFRIED) *1861-1867: Chicago, Cook, Illinois.* •

BEHLENDORF (FREDERICK) *1861-1869: Saint Louis, St. Louis, Missouri; 1870-1872: Chicago, Cook, Illinois; 1873-1889: Grand Rapids, Kent, Michigan.* •

BEHR (ALFRED VON) *1861-1863: Saint Louis, St. Louis, Missouri.* •

BEHR (HANS HERMANN) *1851-1904: San Francisco, San Francisco, California.* •

BEHRENDT (KARL HERMANN) *1852-1878: New York, New York, New York.* •

BERENDS (JULIUS) *1854-1875: San Antonio, Bexar, Texas; 1876-1891: Cincinnati, Hamilton, Ohio.* •

BERGER (HEINRICH) *1849-1902: New York, New York, New York.* •

BERGMANN (CARL) *1850-1876: New York, New York, New York.* •

BERNAYS (CARL L.) *1849-1861: Saint Louis, St. Louis, Missouri; 1862-1879: Washington, DC, District Of Columbia.* •

BEST (ADAM) *1849-1880: Cincinnati, Hamilton, Ohio.* •

BEST (MICHAEL) *1853-1865: Saint Louis, St. Louis, Missouri; 1862-1906: Saint Louis, Ind. City: St. Louis, Missouri.* •

BETZ (PHILIPP) *1853-1902: Davenport, Scott, Iowa.* •

BEYSCHLAG (CARL) *1852-1866: Indianapolis, Marion, Indiana; 1867-1902: Saint Louis, St. Louis, Missouri.* •

BIEBUSCH (HENRY) *1850-1882: Lawrence, Douglas, Kansas.* •

BIELING (JOHANN H.) *1850-1902: New York, New York, New York.* •

BIEN (JULIUS) *1850-1909: New York, New York, New York.* •

BINDER (HEINRICH) *1853-1865: Chicago, Cook, Illinois; 1866-1870: Saint Louis, St. Louis, Missouri; 1871-1888: Detroit, Wayne, Michigan; 1889-1901: New York, New York, New York.* •

BISKY (FRIEDRICH LUDWIG) *1851-1860: Columbus, Franklin, Ohio; 1861-1863: New York, New York, New York.* •

BLANDWOSKI (CONSTANTIN) *1851-1861: New York, New York, New York.* •

BLENKER (LUDWIG) *1851-1863: New York, New York, New York.* •

BLESCH (PHILIP) *1850-1907: Columbus, Franklin, Ohio.* •

BLOEDE (GUSTAV) *1851-1902: New York, New York, New York.* •

BLUME (ERNST CHRISTIAN FRIEDRICH) *1850-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

BOEBEL (HANS) *1866-1902: Milwaukee, Milwaukee, Wisconsin.* •

BOERNSTEIN (HEINRICH) *1850-1892: Saint Louis, St. Louis, Missouri.* •

BOGEN (LUDWIG) *1865-1886: New Ulm, Brown, Minnesota.* •

BOLLMANN (LOUIS) *1850-1902: Bloomington, Monroe, Indiana.* •

BONDI (AUGUST) *1849-1856: Saint Louis, St. Louis, Missouri; 1857-1870: Walker, Ellis, Kansas; 1871-1880: Walnut, Crawford, Kansas; 1881-1907: Salina, Saline, Kansas.* •

BRAND (FR.) *1850-1902: Boston, Suffolk, Massachussetts.* •

BRAUSE (CARL VON) *1850-1902: Manitowoc, Manitowoc, Wisconsin.* •

BRENDEL (FRIEDRICH) *1851-1852: Saint Louis, St. Louis, Missouri; 1853-1912: Peoria, Peoria, Illinois.* •

BRENTANO (LORENZ) *1851-1859: Kalamazoo, Kalamazoo, Michigan; 1860-1891: Chicago, Cook, Illinois.* •

BRETHAUER (OTTO) *1849-1882: New York, New York, New York.* •

BRICKEL (ANDREW) *1850-1898: New York, New York, New York; 1899-1902: Buffalo, Erie, New York.* •

BRODBECK (CONRAD) *1850-1902: Dayton, Montgomery, Ohio.* •

BROOKMAN (ANTON) *1850-1903: Newark, Essex, New Jersey.* •

BRUHL (GUSTAV) *1850-1902: Cincinnati, Hamilton, Ohio.* •

BUSH (ISIDOR) *1850-1898: Saint Louis, St. Louis, Missouri.* •

BUTZ (CASPAR) *1850-1854: Detroit, Wayne, Michigan; 1855-1885: Chicago, Cook, Illinois.* •

CALBE (WILHELM LOEWE) *1850-1902: New York, New York, New York.* •

CANISIUS (THEODORE) *1859-1859: Marine, Madison, Illinois; 1860-1885: Springfield, Sangamon, Illinois.* •

CLAUSSEN (HANS REIMER) *1851-1894: Davenport, Scott, Iowa.* •

CONHEIM (MAX) *1850-1902: New York, New York, New York.* •

CONRAD (CONSTANTIN) *1850-1850: New Orleans, Orleans, Louisiana; 1851-1858: Cincinnati, Hamilton, Ohio; 1859-1905: Pittsburg, Allegheny, Pennsylvania.* •

D'UTASSY (FREDERICK GEORGE) *1849-1892: New York, New York, New York.* •

DAENZER (CARL) *1855-1872: Saint Louis, St. Louis, Missouri.* •

DECKELMAN (HENRY) *1850-1902: Leavenworth, Leavenworth, Kansas.* •

DEGENER (EDUARD) *1851-1877: New Braunfels, Comal, Texas; 1878-1890: San Antonio, Bexar, Texas.* •

DEMBITZ (LOUIS) *1850-1902: Louisville, Jefferson, Kentucky.* •

DENGLER (ADOLF) *1849-1884: Bellville, St. Clair, Illinois.* •

DENZLER (FRIEDRICH) *1849-1902: Leavenworth, Leavenworth, Kansas.* •

DERLETH (ALOIS) *1850-1860: Saint Louis, Ind. City: St. Louis, Missouri.* •

DESHAUER (JOSEPH) *1850-1902: Chicago, Cook, Illinois.* •

DETTWEILER (HERMANN) *1850-1878: Louisville, Jefferson, Kentucky.* •

DIEPENBECK (RUDOLF) *1851-1875: Detroit, Wayne, Michigan.* •

DIETRICH (HEINRICH) *1849-1902: New York, New York, New York.* •

DIETSCH (THEODOR) *1850-1857: Louisville, Jefferson, Kentucky.* •

DIETZ (JOHANN W.) *1855-1855: New York, New York, New York; 1856-1870: Burlington, Des Moines, Iowa; 1871-1902: Chicago, Cook, Illinois.* ●

DIETZSCH (EMIL) *1854-1890: Chicago, Cook, Illinois.* ●

DOEHN (RUDOLF) *1849-1895: Saint Louis, St. Louis, Missouri.* ●

DOLLMATSCH (R.) *1850-1902: Saint Louis, St. Louis, Missouri.* ●

DOMSCHKE (BERNARD) *1851-1854: Boston, Suffolk, Massachussetts; 1855-1869: Milwaukee, Milwaukee, Wisconsin.* ●

DORSCH (EDUARD) *1850-1870: New York, New York, New York; 1871-1887: Monroe, Monroe, Michigan.* ●

DOUAI (CARL DANIEL ADOLF) *1853-1853: New Braunfels, Comal, Texas; 1854-1856: San Antonio, Bexar, Texas; 1857-1860: Boston, Suffolk, Massachussetts; 1861-1888: New York, New York, New York.* ●

DREIHAUS (GEORG) *1849-1870: Philadelphia, Philadelphia, Pennsylvania.* ●

DRESEL (JULIUS) *1849-1861: New Braunfels, Comal, Texas; 1862-1869: San Antonio, Bexar, Texas; 1870-1891: Sonoma, Sonoma, California.* ●

DRESEL ([FRIEDRICH] OTTO) *1850-1853: Massillon, Stark, Ohio; 1854-1881: Columbus, Franklin, Ohio.* ●

DULON (RUDOLF) *1854-1877: New York, New York, New York.* ●

ECKSTEIN (FRIEDRICH) *1852-1902: Cincinnati, Hamilton, Ohio.* ●

EHRHART (LORENZ) *1850-1908: Allegheny, Allegheny, Pennsylvania.* ●

EICKEMEYER (RUDOLF) *1851-1854: New York, New York, New York; 1855-1895: Yonkers, Westchester, New York.* ●

EICKHOFF (ANTON) *1849-1850: New Orleans, Orleans, Louisiana; 1851-1861: Saint Louis, St. Louis, Missouri; 1862-1901: New York, New York, New York.* ●

EIFLER (KARL) *1850-1888: New York, New York, New York.* ●

EISENLOHR (GUSTAV WILHELM) *1851-1860: New Braunfels, Comal, Texas; 1861-1880: Cincinnati, Hamilton, Ohio; 1881-1881: Dallas, Dallas, Texas.* ●

ELSNER (HUGO VON) *1849-1896: Bloomington, Mclean, Illinois.* ●

ENGELHARDT (LUDWIG) *1850-1902: New York, New York, New York.* ●

ENGELMANN (ADOLF) *1849-1890: Bellville, St. Clair, Illinois.* ●

ENGELMANN (PETER) *1851-1902: Milwaukee, Milwaukee, Wisconsin.* ●

ESSELEN (CHRISTIAN) *1853-1853: New York, New York, New York; 1854-1859: Detroit, Wayne, Michigan.* ●

FABER (PAUL) *1849-1891: St. Paul'S, Ramsey, Minnesota.* ●

FAEHTZ (ERNST F.) *1851-1865: Elkton, Cecil, Maryland; 1866-1882: Baltimore, Ind. City: Baltimore, Maryland.* ●

FALLER (ALOYS) *1849-1870: Warsaw, Hancock, Illinois; 1871-1882: New York, New York, New York.* ●

FEIGEL () *1850-1902: Newark, Essex, New Jersey.* ●

FEIN (GEORG) *1846-1860: Baltimore, Ind. City: Baltimore, Maryland; 1861-1869: Bellville, St. Clair, Illinois.* ●

FEJERVARY (NICHOLAS) *1850-1895: Davenport, Scott, Iowa.* ●

FIALA (JOHANN T.) *1853-1873: Saint Louis, St. Louis, Missouri; 1874-1911: San Francisco, San Francisco, California.* ●

FIEDLER (ANTON B.) *1853-1897: Chicago, Cook, Illinois.* ●

FINK (ALBERT) *1850-1857: Baltimore, Ind. City: Baltimore, Maryland; 1858-1897: Louisville, Jefferson, Kentucky.* ●

FISHER (ADAM) *1850-1902: Leavenworth, Leavenworth, Kansas.* ●

FLAD (HENRY) *1850-1865: New York, New York, New York; 1866-1898: Saint Louis, St. Louis, Missouri.* ●

FOERSCH (J. A.) *1850-1902: New York, New York, New York.* ●

FORSCH (LOUIS) *1850-1902: New York, New York, New York.* ●

FRAHM (MATHIAS) *1850-1899: Davenport, Scott, Iowa.* ●

FRANK (Aaron) *1850-1902: New York, New York, New York.* ●

FRANKFURTH (WILHELM) *1849-1885: Milwaukee, Milwaukee, Wisconsin.* •

FRATNY (FRIEDRICH) *1850-1902: Milwaukee, Milwaukee, Wisconsin.* •

FREUDENBERG (CARL GOTTFRIED) *1849-1885: New York, New York, New York.* •

FRICKE (HEINRICH C.) *1854-1880: Chicago, Cook, Illinois.* •

FUESTER (ANTON) *1850-1881: New York, New York, New York.* •

GAMBS (JOHANNES) *1858-1879: New York, New York, New York.* •

GAYLORD (L. F.) *1850-1902: Leavenworth, Leavenworth, Kansas.* •

GEBRAETZ (GEORG) *1876-1881: Newark, Essex, New Jersey.* •

GEHM (CARL) *1850-1902: Bellville, St. Clair, Illinois.* •

GEIWITZ (GEORG) *1849-1890: Baltimore, Ind. City: Baltimore, Maryland.* •

GERHARD (FRIEDRICH) *1850-1902: New York, New York, New York.* •

GERHARDT (JOSEPH) *1852-1881: Washington, DC, District Of Columbia.* •

GERNSBACH (WEIL VON) *1850-1902: San Francisco, San Francisco, California.* •

GERWIG (ADOLF) *1850-1862: Cincinnati, Hamilton, Ohio.* •

GIESLER (E.) *1850-1902: New York, New York, New York.* •

GILLIG (KARL EMIL) *1851-1861: Milwaukee, Milwaukee, Wisconsin; 1862-1883: Peoria, Peoria, Illinois.* •

GILSA (LEOPOLD VON) *1853-1870: New York, New York, New York.* •

GINDELE (JOHN G.) *1853-1872: Chicago, Cook, Illinois.* •

GIRSCH (FREDERICK) *1850-1870: New York, New York, New York; 1871-1891: East Chester, Westchester, New York; 1892-1895: Pelham, Westchester, New York.* •

GOEHLMANN (MARTIN G.) *1858-1885: Waterford, Clinton, Iowa.* •

GOEPPER (WILHELM) *1849-1879: Louisville, Jefferson, Kentucky.* •

GOHRINGER (KARL) *1867-1902: Pittsburg, Allegheny, Pennsylvania.* •

GOLDMARK (JOSEPH) *1851-1881: New York, New York, New York.* •

GRAF (KARL) *1850-1885: Cincinnati, Hamilton, Ohio.* •

GREINER (THEODOR LUDWIG) *1850-1902: Newark, Essex, New Jersey.* •

GROSCHEL () *1850-1902: New York, New York, New York.* •

GRUBER (HEINRICH) *1850-1902: Brooklyn, Kings, New York.* •

GUELICH (THEODOR) *1852-1861: Davenport, Scott, Iowa; 1862-1893: Burlington, Des Moines, Iowa.* •

GUENTHER (JOHANN GEORG) *1849-1872: Milwaukee, Milwaukee, Wisconsin.* •

HAAS (HEINRICH C.) *1850-1902: Leavenworth, Leavenworth, Kansas.* •

HACKELMANN (P. A.) *1850-1902: Rushville, Rush, Indiana.* •

HAGEN (THEODOR) *1855-1871: New York, New York, New York.* •

HAIMBACH (PHILIPP) *1852-1904: Philadelphia, Philadelphia, Pennsylvania.* •

HAMM (THEODOR) *1855-1903: St. Paul'S, Ramsey, Minnesota.* •

HAMMER (ADAM VON) *1849-1878: Saint Louis, St. Louis, Missouri.* •

HAMMERMEISTER (HEINRICH) *1850-1860: New York, New York, New York.* •

HARTMANN (KARL) *1849-1863: Cleveland, Cuyahoga, Ohio.* •

HARTMANN (MORITZ) *1856-1902: Lawrence, Douglas, Kansas.* •

HARTUNG (ADOLPH VON) *1876-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

HASSAUREK (FRIEDRICH) *1850-1885: Cincinnati, Hamilton, Ohio.* •

HATTERSCHEIDT (JOHN P.) *1850-1902: Cincinnati, Hamilton, Ohio; 1858-1859: Leavenworth, Leavenworth, Kansas.* •

HAUSSNER (CHARLES FREDERICK) *1856-1866: Chicago, Cook, Illinois; 1867-1911: Chicago, Hamilton, Illinois.* •

HECKER (FRIEDRICH) *1850-1881: Bellville, St. Clair, Illinois.* •

HEDDE (FRITZ) *1855-1857: Davenport, Scott, Iowa; 1858-1908: Grand Island, Hall, Nebraska.* •

HEILPRIN (MICHAEL) *1857-1902: New York, New York, New York.* •

HEINZEN (KARL PETER) *1851-1853: New York, New York, New York; 1854-1859: Louisville, Jefferson, Kentucky; 1860-1880: Boston, Suffolk, Massachussetts.* •

HELFENSTEIN (J.) *1850-1902: New York, New York, New York.* •

HENNE (ROBERT) *1852-1885: Davenport, Scott, Iowa.* •

HEXAMER (ADOLF) *1849-1859: New York, New York, New York.* •

HEXAMER (ALEXANDER) *1850-1902: New York, New York, New York.* •

HEXAMER (ERNST) *1849-1856: New York, New York, New York; 1857-1912: Philadelphia, Philadelphia, Pennsylvania.* •

HEXAMER (FRITZ M.) *1849-1895: New York, New York, New York; 1896-1910: Stamford, Fairfield, Connecticut.* •

HEXAMER (WILHELM) *1849-1859: New York, New York, New York; 1860-1870: Hoboken, Hudson, New Jersey.* •

HIELSCHER (THEODOR) *1852-1864: Indianapolis, Marion, Indiana; 1865-1870: Chicago, Cook, Illinois; 1871-1873: New Ulm, Brown, Minnesota; 1874-1900: Minneapolis, Hennepin, Minnesota; 1901-1907: Eagle Pass, Maverick, Texas.* •

HILLGAERTNER (GEORG) *1854-1862: Chicago, Cook, Illinois; 1863-1865: Saint Louis, St. Louis, Missouri.* •

HIRSCHFIELD (JOSEPH) *1850-1902: New York, New York, New York.* •

HOBELMANN (FRIEDRICH AUGUST) *1850-1902: Cincinnati, Hamilton, Ohio.* •

HOCHHEINER (HENRY) *1850-1912: Baltimore, Ind. City: Baltimore, Maryland.* •

HOFF (HEINRICH) *1850-1852: New York, New York, New York.* •

HOFFBAUER (WILHELM) *1851-1860: Saint Louis, St. Louis, Missouri; 1861-1875: Guttemburg, Clayton, Iowa; 1876-1892: Dubuque, Dubuque, Iowa.* •

HOFFMANN (ERNST F.) *1849-1876: New York, New York, New York; 1877-1902: Davenport, Scott, Iowa.* •

HOFFMANN (FRANCIS) *1850-1902: Chicago, Cook, Illinois.* •

HOFFMANN (GEORG RICHARD) *1850-1902: Louisville, Jefferson, Kentucky.* •

HOHLFELD (JOHANN F.) *1849-1861: Saint Louis, St. Louis, Missouri.* •

HOMBURG (CONRADIN) *1850-1902: Indianapolis, Marion, Indiana.* •

HOTTINGER (ANTON) *1852-1852: Pittsburg, Allegheny, Pennsylvania; 1853-1856: Cincinnati, Hamilton, Ohio; 1857-1862: Guttemburg, Clayton, Iowa; 1863-1911: Chicago, Cook, Illinois.* •

HUHN (HEINRICH) *1863-1865: Saint Louis, St. Louis, Missouri; 1866-1902: Washington, Franklin, Missouri.* •

HUTH () *1850-1902: Boston, Suffolk, Massachussetts.* •

JACOBI (ABRAHAM) *1854-1919: New York, New York, New York.* •

JACOBI (FRITZ) *1850-1902: New York, New York, New York.* •

JACOBS (WILHELM HEINRICH) *1851-1882: Milwaukee, Milwaukee, Wisconsin.* •

JAZELLA (APPOLONIA) *1850-1902: New York, New York, New York.* •

JERZMANOWSKI (JOSEPH) *1850-1902: New York, New York, New York.* •

KAEMMERLING (GUSTAV) *1849-1902: Troy, Perry, Indiana.* •

KAHN () *1850-1902: New York, New York, New York.* •

KAHRMANN (J. S.) *1850-1902: Davenport, Scott, Iowa.* •

KALISCH (ISIDOR) *1850-1880: New York, New York, New York; 1881-1886: Newark, Essex, New Jersey.* •

KAMM (FRIEDRICH) *1850-1902: New York, New York, New York.* •

KAPFF (EDUARD) *1849-1902: New York, New York, New York.* •

KAPFF (SIXTUS) *1849-1877: New York, New York, New York.* •

KAPP (FRIEDRICH) *1851-1884: New York, New York, New York.* •

KAUFMANN (SIGISMUND) *1849-1889: New York, New York, New York.* •

KAUFMANN (THEODOR) *1851-1864: New York, New York, New York; 1865-1866: Saint Louis,*

St. Louis, Missouri; 1867-1896: Boston, Suffolk, Massachussetts. •

KELLNER (GOTTLIEB THEODOR) *1852-1856: New Ulm, Brown, Minnesota; 1857-1898: Philadelphia, Philadelphia, Pennsylvania.* •

KIEFER (CHRISTIAN FRIEDRICH) *1850-1878: Philadelphia, Philadelphia, Pennsylvania.* •

KIEFER (HERMANN) *1850-1889: Detroit, Wayne, Michigan; 1890-1911: Ann Arbor, Washtenaw, Michigan.* •

KILLIAN (JOSEPH) *1850-1902: Allentown, Lehigh, Pennsylvania.* •

KLEINER (MEINRAD) *1850-1873: Cincinnati, Hamilton, Ohio.* •

KLIPPART (J. H.) *1850-1878: Cleveland, Cuyahoga, Ohio.* •

KNODERER (Carl August) *1850-1863: Reading, Berks, Pennsylvania.* •

KOB (CHARLES FRIEDRICH) *1850-1855: Hartford, Hartford, Connecticut; 1856-1857: Boston, Suffolk, Massachussetts; 1858-1858: Atchison, Atchison, Kansas; 1859-1861: Leavenworth, Leavenworth, Kansas.* •

KOCH (EDMUND IGNATZ) *1851-1902: New York, New York, New York.* •

KOCH (RUDOLF) *1850-1902: New York, New York, New York.* •

KOENIG (F. C.) *1856-1877: Peoria, Peoria, Illinois.* •

KOERNER (GUSTAV) *1834-1834: Saint Louis, St. Louis, Missouri; 1835-1896: Bellville, St. Clair, Illinois.* •

KOERNER (JOSEPH ALOYS) *1851-1882: New York, New York, New York.* •

KORNER (HERMANN JOSEPH ALOYS) *1852-1902: New York, New York, New York.* •

KOVEN (WILHELM) *1850-1902: New York, New York, New York.* •

KOZLEY (EUGEN ARTHUR) *1849-1883: New York, New York, New York.* •

KRACKOWITZER (ERNST) *1850-1857: Brooklyn, Kings, New York; 1858-1875: New York, New York, New York.* •

KRAUS (ALBERT) *1850-1902: Benton, Dallas, Missouri.* •

KREISMAN (HERMANN) *1850-1902: Chicago, Cook, Illinois.* •

KREZ (KONRAD) *1852-1854: New York, New York, New York; 1855-1885: Sheboygan, Sheboygan, Wisconsin; 1886-1897: Milwaukee, Milwaukee, Wisconsin.* •

KRIEGE (HERMANN) *1850-1850: New York, New York, New York.* •

KROEGER (JACOB) *1849-1885: Davenport, Scott, Iowa.* •

KRUER (A.) *1850-1902: New York, New York, New York.* •

KRYZANOWSKI (WLADIMIR) *1849-1878: Washington, DC, District Of Columbia; 1879-1887: New York, New York, New York.* •

KUDLICH (HANS) *1854-1917: Hoboken, Hudson, New Jersey.* •

LAMBACH (HEINRICH) *1849-1899: Davenport, Scott, Iowa.* •

LANGE (ALBERT) *1850-1869: Terre Haute, Vigo, Indiana.* •

LANGE (JOHANN FRIEDRICH GOTTLOB LANGE) *1850-1879: New York, New York, New York.* •

LAUENSTEIN (KARL) *1850-1902: Cincinnati, Hamilton, Ohio.* •

LEHLBACH (FRIEDRICH AUGUST) *1850-1875: Newark, Essex, New Jersey.* •

LEIST (FRIEDRICH) *1849-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

LESER (FRITZ) *1854-1880: Saint Louis, St. Louis, Missouri; 1881-1902: Philadelphia, Philadelphia, Pennsylvania.* •

LEUCHTWEISS (AUGUST) *1849-1902: Cincinnati, Hamilton, Ohio.* •

LEUSSLER (ROBERT) *1849-1873: Saint Louis, St. Louis, Missouri.* •

LEXOW (FRIEDRICH) *1853-1861: New York, New York, New York; 1862-1870: Jersey, Hudson, New Jersey; 1871-1872: North Bergen, Hudson, New Jersey.* •

LEXOW (RUDOLF) *1852-1902: New York, New York, New York.* •

LIEBER (OSCAR MONTGOMERY) *1851-1862: Columbia, Richland, South Carolina.* •

LIEVRE (EUGENE) *1850-1902: New York, New York, New York.* •

LINDEMAN (GEORGE) *1850-1902: Cincinnati, Hamilton, Ohio.* •

LINDEMANN (HERMANN VON) *1850-1893: Saint Louis, Ind. City: St. Louis, Missouri.* •

LOEHR (FERDINAND VON) *1853-1877: San Francisco, San Francisco, California.* •

LOES (FRANZ E.) *1853-1883: Philadelphia, Philadelphia, Pennsylvania.* •

LOEWE AUS CALBE (WILHELM) *1854-1886: New York, New York, New York.* •

LOHMANN (HEINRICH) *1850-1889: Baltimore, Ind. City: Baltimore, Maryland.* •

LOOS (ALEXANDER) *1853-1870: Hudson, Columbia, New York; 1871-1877: Philadelphia, Philadelphia, Pennsylvania.* •

LOOSE (HEINRICH) *1849-1882: New York, New York, New York.* •

LOWENBERG (FRANZ SCHMIDT VON) *1850-1853: Saint Louis, St. Louis, Missouri.* •

LUCAS (JACOB) *1852-1861: Saint Louis, St. Louis, Missouri; 1862-1870: Peoria, Peoria, Illinois; 1871-1902: Pekin, Tazewell, Illinois.* •

LUDVIGH (SAMUEL) *1850-1869: Baltimore, Ind. City: Baltimore, Maryland.* •

LUEDEKING (CARL) *1852-1885: Saint Louis, St. Louis, Missouri.* •

LUNGKWITZ (HERMANN) *1851-1891: Fredericksburg, Gillespie, Texas.* •

MAAS (BENJAMIN) *1850-1850: New York, New York, New York; 1851-1891: New Orleans, Orleans, Louisiana.* •

MAERKLIN (EDUARD) *1849-1892: Milwaukee, Milwaukee, Wisconsin.* •

MAISCH (JOHN MICHAEL) *1851-1893: Philadelphia, Philadelphia, Pennsylvania.* •

MARX (JOSEPH E.) *1850-1902: Toledo, Lucas, Ohio.* •

MATZKA (GEORG) *1854-1883: New York, New York, New York.* •

MAYERHOEFER (WILHELM) *1849-1877: New York, New York, New York; 1878-1880: Louisville, Jefferson, Kentucky.* •

MEHL (JOHN) *1850-1902: New York, New York, New York.* •

MEHL (MARTIN) *1850-1902: New York, New York, New York.* •

MEINIGER (KARL) *1849-1883: Cincinnati, Hamilton, Ohio.* •

MELOSCH () *1850-1902: New York, New York, New York.* •

MENNINGER (JOHN) *1850-1902: New York, New York, New York.* •

MERSEY (AUGUST) *1856-1866: Bellville, St. Clair, Illinois.* •

METTERNICH (GERMAIN) *1852-1862: New York, New York, New York.* •

MEYER (HERMANN) *1853-1902: New York, New York, New York.* •

MIEDING (KARL) *1850-1902: Milwaukee, Milwaukee, Wisconsin.* •

MILLER (HEINRICH) *1850-1896: Louisville, Jefferson, Kentucky.* •

MINDING (JULIUS) *1850-1902: New York, New York, New York.* •

MOHR (CHARLES THEODOR) *1853-1857: Louisville, Jefferson, Kentucky; 1858-1900: Mobile, Mobile, Alabama; 1901-1901: Ashville, Buncombe, North Carolina.* •

MOLITOR (STEPHAN) *1850-1873: Cincinnati, Hamilton, Ohio.* •

MORDES (FLORIAN) *1850-1850: New Braunfels, Comal, Texas.* •

MORWITZ (EDWARD) *1851-1893: Philadelphia, Philadelphia, Pennsylvania.* •

MOSCHZISKER (FRANZ A. VON) *1853-1863: Baltimore, Ind. City: Baltimore, Maryland; 1864-1867: Washington, DC, District Of Columbia; 1868-1871: Philadelphia, Philadelphia, Pennsylvania; 1872-1876: Rochester, Monroe, New York; 1877-1880: Utica, Oneida, New York.* •

MUELLER (CHRISTIAN L. H.) *1850-1902: Davenport, Scott, Iowa.* •

MUELLER (EDUARD) *1850-1871: New York, New York, New York; 1872-1886: Rochester, Monroe, New York.* •

MUELLER (JACOB) *1850-1905: Cleveland, Cuyahoga, Ohio.* •

MUELLER (NIKOLAUS) *1849-1875: New York, New York, New York.* •

MUELLER (WILHELM) *1849-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

MUHLCBACH (JOSEPH) *1850-1858: New York, New York, New York.* •

MULD (L.) *1850-1902: New York, New York, New York.* •

MURER (JOHN) *1855-1856: New York, New York, New York; 1857-1902: Buffalo, Scott, Iowa.* •

NAST (THOMAS) *1851-1857: New York, New York, New York.* •

NEUBERT (KARL) *1850-1902: Bellville, St. Clair, Illinois.* •

NEUSTAEDTER (JOHANN ALBERT) *1852-1885: Saint Louis, St. Louis, Missouri.* •

NIX (JACOB) *1849-1897: New Ulm, Brown, Minnesota.* •

OBERMANN (KARL) *1852-1901: Cincinnati, Hamilton, Ohio.* •

OELS (ADOLPH ROSIER VON) *1851-1852: New York, New York, New York.* •

OLSHAUSEN (THEODOR) *1852-1856: Davenport, Scott, Iowa; 1857-1869: Saint Louis, St. Louis, Missouri.* •

OSTERHAUS (PETER JOSEPH) *1850-1861: Bellville, St. Clair, Illinois; 1862-1917: Saint Louis, St. Louis, Missouri.* •

OSWALD (MICHAEL) *1850-1902: Lawrence, Douglas, Kansas.* •

OTTENDORFER (OSWALD) *1851-1900: New York, New York, New York.* •

PABISCH (FRANZ JOSEPH) *1863-1879: Cincinnati, Hamilton, Ohio.* •

PEISSNER (ELIAS) *1850-1863: Schenectady, Schenectady, New York.* •

PELZ (EDUARD) *1851-1876: New York, New York, New York.* •

PETERS (CHRISTIAN H. F.) *1868-1890: Kirkland, Oneida, New York.* •

PETERSEN (LORENZ) *1855-1880: Springfield, Cedar, Iowa.* •

PETRI (RICHARD) *1851-1857: Fredericksburg, Gillespie, Texas.* •

PETZ () *1850-1902: Leavenworth, Leavenworth, Kansas.* •

PEYER (JOHANNES) *1850-1902: Cincinnati, Hamilton, Ohio.* •

PFAENDER (WILHELM) *1849-1850: Cincinnati, Hamilton, Ohio; 1851-1905: New Ulm, Brown, Minnesota.* •

PFEIFFER (P.) *1850-1902: Boston, Suffolk, Massachussetts.* •

PFEIFLFER (ALEXANDER) *1852-1902: Cincinnati, Hamilton, Ohio.* •

PILAT (IGNAZ ANTON) *1852-1870: New York, New York, New York.* •

PLESSNER (MICHAEL CARL THEODOR) *1850-1894: Saginaw, Saginaw, Michigan.* •

POESCHE (THEODOR) *1854-1858: Philadelphia, Philadelphia, Pennsylvania; 1859-1863: Saint Louis, Ind. City: St. Louis, Missouri; 1864-1899: Washington, DC, District Of Columbia.* •

POHLE (CARL ADOLF JULIUS) *1849-1859: New York, New York, New York.* •

POMUTZ (GEORGE) *1850-1882: New Buda, Decatur, Iowa.* •

POSCHNER (FRIEDRICH) *1849-1873: Cincinnati, Hamilton, Ohio.* •

PRAGER (DAVID) *1850-1902: Lawrence, Douglas, Kansas.* •

PRAHL (CHARLES) *1854-1900: New York, New York, New York; 1901-1904: Clinton, Hunterdon, New Jersey.* •

PRANG (LOUIS) *1851-1909: Boston, Suffolk, Massachussetts.* •

PREETORIUS (EMIL) *1855-1905: Saint Louis, St. Louis, Missouri.* •

PREISER () *1850-1902: Cincinnati, Hamilton, Ohio.* •

PREUSSNER (CARL) *1850-1902: Milwaukee, Milwaukee, Wisconsin.* •

PUCHNER (RUDOLF) *1851-1913: New Holstein, Calumet, Wisconsin.* •

QUERNER (EMIL) *1853-1886: Philadelphia, Philadelphia, Pennsylvania.* •

RAMMING (HEINRICH) *1852-1856: New York, New York, New York; 1857-1902: Davenport, Scott, Iowa.* •

RANST () *1850-1902: Leavenworth, Leavenworth, Kansas.* •

RAPP (WILHELM) *1853-1891: Baltimore, Ind. City: Baltimore, Maryland; 1892-1907: Chicago, Cook, Illinois.* •

RASTER (HERMANN) *1852-1867: New York, New York, New York; 1853-1853: Buffalo, Erie, New York; 1868-1891: Chicago, Cook, Illinois.* •

RAU (GOTTLIEB) *1850-1902: New York, New York, New York.* •

RAUCH (CHARLES) *1853-1902: St. Paul'S, Ramsey, Minnesota.* •

REIBETANTZ (CARL JULIUS) *1849-1894: Baltimore, Ind. City: Baltimore, Maryland.* •

REICHARD (JOSEPH MARTIN) *1850-1872: Philadelphia, Philadelphia, Pennsylvania.* •

REICHARDT (FRIEDRICH) *1850-1876: Cincinnati, Hamilton, Ohio.* •

REICHMANN (RUDOLPH) *1881-1908: Toledo, Tama, Iowa.* •

REIFSCHNEIDER (FELIX) *1850-1902: New York, New York, New York.* •

REITER (PHILIPP) *1850-1902: Philadelphia, Philadelphia, Pennsylvania.* •

RESCH (KARL) *1850-1902: Louisville, Jefferson, Kentucky.* •

RICHTER (ERHARD) *1850-1902: New York, New York, New York.* •

RIEPE (WILHELM) *1850-1902: Davenport, Scott, Iowa.* •

RIETZ (CARL) *1850-1877: Saginaw, Saginaw, Michigan; 1878-1902: Chicago, Cook, Illinois.* •

RITTER (LOUIS) *1855-1902: Cleveland, Cuyahoga, Ohio.* •

RITTIG (JOHANN) *1853-1857: Cincinnati, Hamilton, Ohio; 1858-1885: New York, New York, New York.* •

RITTLER (A. W.) *1850-1872: New York, New York, New York.* •

ROCHOTTE (HEINRICH) *1850-1902: Cleveland, Cuyahoga, Ohio.* •

ROESER (CARL) *1854-1873: Manitowoc, Manitowoc, Wisconsin; 1874-1897: Washington, DC, District Of Columbia.* •

ROESER (OTTO) *1851-1885: Saginaw, Saginaw, Michigan.* •

ROESLER (GUSTAV ADOLF) *1851-1855: New York, New York, New York.* •

ROESSLER (FRIEDRICH) *1854-1870: New York, New York, New York.* •

ROGGENBUCKE (OSKAR VON) *1855-1860: New Braunfels, Comal, Texas; 1861-1883: Comfort, Kendall, Texas.* •

ROMBAUER (ROBERT J.) *1849-1902: Saint Louis, St. Louis, Missouri.* •

ROMBAUER (THEODORE) *1850-1855: Davenport, Scott, Iowa.* •

ROSA (RUDOLF VON) *1851-1865: Washington, DC, District Of Columbia; 1866-1902: New York, New York, New York.* •

ROSER (KARL) *1854-1902: Milwaukee, Milwaukee, Wisconsin.* •

ROSKOTEN (ROBERT) *1850-1897: Peoria, Peoria, Illinois.* •

ROSSWOG (CONSTANTIN) *1849-1902: New York, New York, New York.* •

ROTHACKER (WILHELM) *1851-1859: Wheeling, Ohio, West Virginia.* •

ROTHE (EMIL) *1850-1852: New York, New York, New York; 1853-1869: Watertown, Jefferson, Wisconsin; 1870-1895: Cincinnati, Hamilton, Ohio.* •

ROTTECK (CARL) *1858-1859: Muscatine, Muscatine, Iowa; 1860-1860: Burlington, Des Moines, Iowa; 1861-1902: Keokuk, Lee, Iowa.* •

RUDOLPH (JOSEPH) *1850-1853: Cincinnati, Hamilton, Ohio; 1854-1854: Saint Louis, St. Louis, Missouri; 1855-1855: Dubuque, Dubuque, Iowa; 1856-1902: Chicago, Cook, Illinois.* •

RUHL (KARL) *1850-1852: New York, New York, New York; 1853-1902: Philadelphia, Philadelphia, Pennsylvania.* •

RUPPIUS (OTTO) *1853-1864: Milwaukee, Milwaukee, Wisconsin.* •

RUSCH (NICHOLAS) *1848-1863: Davenport, Scott, Iowa; 1864-1864: New York, New York, New York.* •

RUTHS (PHILIPP) *1850-1874: Cincinnati, Hamilton, Ohio.* •

SAHM (KARL) *1854-1883: New York, New York, New York.* •

SALOMON (CARL EBERHARD) *1850-1881: Saint Louis, St. Louis, Missouri.* •

SALOMON (EDWARD) *1856-1869: Milwaukee, Milwaukee, Wisconsin; 1870-1908: New York, New York, New York.* •

SALOMON (FRIEDRICH S.) *1851-1860: Manitowoc, Manitowoc, Wisconsin; 1861-1880: Saint Louis, St. Louis, Missouri; 1881-1897: Salt Lake City, Salt Lake, Utah.* •

SANDER (ENNO) *1854-1912: Saint Louis, St. Louis, Missouri.* •

SCHADE (LOUIS) *1852-1903: Washington, DC, District Of Columbia; 1857-1858: Chicago, Cook, Illinois; 1859-1859: Burlington, Des Moines, Iowa.* •

SCHADT (OTTO) *1849-1902: Saint Louis, Ind. City: St. Louis, Missouri.* •

SCHEFFELT (MICHAEL) *1850-1853: Buffalo, Erie, New York.* •

SCHEIBEL (G.) *1850-1902: New York, New York, New York.* •

SCHEM (ALEXANDER JAKOB) *1850-1881: Carlisle, Cumberland, Pennsylvania.* •

SCHIEFERDECKER (JULIUS) *1872-1881: Milwaukee, Milwaukee, Wisconsin.* •

SCHIEREN (JOHN NIKOLAUS) *1857-1863: New York, New York, New York.* •

SCHIMMELPFENNIG (ALEXANDER) *1854-1865: Philadelphia, Philadelphia, Pennsylvania.* •

SCHLAEGER (EDUARD) *1853-1854: Wheeling, Ohio, West Virginia; 1855-1902: Chicago, Cook, Illinois.* •

SCHLEICHER (KARL) *1849-1882: Westfield, Sauk, Wisconsin.* •

SCHLUND (FIDEL) *1849-1867: Chicago, Cook, Illinois; 1868-1882: Newark, Essex, New Jersey.* •

SCHMIDT (CARL WILHELM) *1852-1887: Cleveland, Cuyahoga, Ohio.* •

SCHMIDT (ERNST) *1858-1900: Chicago, Cook, Illinois; 1864-1870: Saint Louis, St. Louis, Missouri.* •

SCHMITT (FRANZ) *1850-1902: New York, New York, New York.* •

SCHMITT (NIKOLAUS) *1849-1869: Philadelphia, Philadelphia, Pennsylvania.* •

SCHMOLZE (KARL HEINRICH) *1849-1859: Philadelphia, Philadelphia, Pennsylvania.* •

SCHNAUFFER (CARL HEINRICH) *1852-1854: Baltimore, Ind. City: Baltimore, Maryland.* •

SCHNEIDER (GEORG) *1850-1851: Saint Louis, St. Louis, Missouri; 1852-1905: Chicago, Cook, Illinois.* •

SCHNEIDER (JOHANN) *1850-1858: New Braunfels, Comal, Texas; 1859-1862: Austin, Travis, Texas.* •

SCHNEIDER () *1850-1902: New York, New York, New York.* •

SCHOEPF (ALBIN FRANCIS) *1859-1902: Washington, DC, District Of Columbia.* •

SCHOLER (JACOB) *1855-1860: New York, New York, New York; 1861-1885: Littlestown, Adams, Pennsylvania.* •

SCHOTT (CHARLES ANTHONY) *1849-1901: Washington, DC, District Of Columbia.* •

SCHRAIDT (KASPAR) *1853-1886: Danbury, Ottawa, Ohio.* •

SCHRAMM (KARL) *1850-1902: New York, New York, New York.* •

SCHROEDER (FREDERICK A.) *1850-1899: Brooklyn, Kings, New York.* •

SCHROETER (EDUARD) *1851-1853: Milwaukee, Milwaukee, Wisconsin; 1854-1902: Westfield, Sauk, Wisconsin.* •

SCHUENEMANN-POTT (FRIEDRICH) *1855-1881: Philadelphia, Philadelphia, Pennsylvania.* •

SCHUETTNER (NIKOLAUS) *1849-1870: Saint Louis, St. Louis, Missouri.* •

SCHULTZ (EDUARD) *1849-1902: Milwaukee, Milwaukee, Wisconsin.* •

SCHULTZ (HERMANN THEODORE) *1851-1902: Austin, Travis, Texas.* •

SCHURZ (CARL) *1853-1855: Philadelphia, Philadelphia, Pennsylvania; 1856-1866: Watertown, Jefferson, Wisconsin; 1867-1867: Detroit, Wayne, Michigan; 1868-1877: Saint Louis, St. Louis, Missouri; 1878-1881: Washington, DC, District Of Columbia; 1882-1906: New York, New York, New York.* •

SCHUSSELE (CHRISTIAN) *1849-1879: Philadelphia, Philadelphia, Pennsylvania.* •

SCHUSTER (CHRISTIAN F.) *1849-1870: New York, New York, New York; 1871-1904: Brattleborough, Windham, Vermont.* •

SCHWAN (HEINRICH) *1850-1905: Cleveland, Cuyahoga, Ohio.* •

SEEGER () *1850-1902: Cincinnati, Hamilton, Ohio.* •

SEELAND () *1850-1902: Leavenworth, Leavenworth, Kansas.* •

SEIFFERT (KARL) *1851-1881: Newark, Essex, New Jersey.* •

SEILER (SEBASTIAN) *1861-1890: New Orleans, Orleans, Louisiana.* •

SENGES (ADAM) *1854-1902: New York, New York, New York.* •

SERENBETZ (FRANCIS) *1850-1902: Humboldt, Allen, Kansas.* •

SERODINO (HERMANN FRANZ) *1850-1879: Cincinnati, Hamilton, Ohio.* •

SIBER (EDUARD) *1871-1902: Cincinnati, Hamilton, Ohio.* •

SIGEL (FRANZ) *1853-1860: New York, New York, New York; 1861-1865: Saint Louis, St. Louis, Missouri; 1866-1870: Baltimore, Ind. City: Baltimore, Maryland; 1871-1902: Morrisania, Bronx, New York.* •

SOHNER (KARL) *1851-1902: Indianapolis, Marion, Indiana.* •

SOLGER (REINHOLD) *1854-1863: Boston, Suffolk, Massachussetts; 1864-1866: Washington, DC, District Of Columbia.* •

SORGE (FRIEDRICH ADOLPH) *1853-1862: New York, New York, New York; 1863-1906: Jersey, Hudson, New Jersey.* •

STADLER (WILHELM) *1850-1902: New York, New York, New York.* •

STAHEL-SZAMWALD (JULIUS) *1860-1912: New York, New York, New York.* •

STARKLOFE (HUGO) *1850-1902: Saint Louis, St. Louis, Missouri.* •

STEINBERG (T. J.) *1850-1902: Lawrence, Douglas, Kansas.* •

STEINWEDEL (WILHELM) *1849-1902: Quincy, Adams, Illinois.* •

STENGEL (WILHELM) *1851-1879: Louisville, Jefferson, Kentucky.* •

STIFEL (CHARLES G.) *1850-1900: Saint Louis, St. Louis, Missouri.* •

STIGER (JOSEPH LEOPOLD) *1850-1902: Cleveland, Cuyahoga, Ohio.* •

STILL (GEORGE W.) *1850-1902: Leavenworth, Leavenworth, Kansas.* •

STOCKMANN (C. O.) *1856-1873: New Haven, New Haven, Connecticut.* •

STOECKEL (GUSTAVE) *1850-1907: New Haven, New Haven, Connecticut.* •

STRAUBENMUELLER (JOHANN) *1855-1863: Baltimore, Ind. City: Baltimore, Maryland; 1864-1897: New York, New York, New York.* •

STRAUCH (ADOLPH) *1853-1883: Cincinnati, Hamilton, Ohio.* •

STRUVE (AMALIA) *1852-1862: New York, New York, New York.* •

STRUVE (GUSTAV) *1852-1870: New York, New York, New York.* •

SZOLD (BENJAMIN) *1860-1902: Baltimore, Ind. City: Baltimore, Maryland.* •

TAFEL (ALBERT) *1850-1902: Cincinnati, Hamilton, Ohio.* •

TAFEL (GUSTAV) *1849-1908: Cincinnati, Hamilton, Ohio.* •

TAFEL (HUGO) *1850-1902: Cincinnati, Hamilton, Ohio.* •

TAFEL (KARL) *1850-1851: Cincinnati, Hamilton, Ohio; 1852-1902: Sandusky, Erie, Ohio.* •

TAFEL (LEONHARD) *1873-1902: New York, New York, New York.* •

TAFEL (RICHARD) *1850-1902: Cincinnati, Hamilton, Ohio.* •

TAFEL (RUDOLPH) *1850-1902: Cincinnati, Hamilton, Ohio.* •

TAUSSIG (JAMES) *1849-1902: Saint Louis, St. Louis, Missouri.* •

TESOR (AUGUST) *1850-1902: New York, New York, New York.* •

THALMESSINGER (MEYER) *1849-1906: New York, New York, New York.* •

THELEN () *1850-1902: Leavenworth, Leavenworth, Kansas.* •

THIEME (AUGUST) *1850-1879: Cleveland, Cuyahoga, Ohio.* •

TIEDEMANN (HEINRICH) *1849-1902: Philadelphia, Philadelphia, Pennsylvania.* •

TRAU (JOHANN PHILIPP) *1851-1883: Philadelphia, Philadelphia, Pennsylvania.* •

TUERCKE (KARL AUGUST) *1859-1886: Cincinnati, Hamilton, Ohio.* •

TYSSOWSKI (IVAN) *1850-1902: New York, New York, New York.* •

TZSCHIRNER (HERMANN) *1850-1902: New York, New York, New York.* •

UHL (JAKOB) *1850-1902: New York, New York, New York.* •

UJHAZY (LASZLO) *1850-1850: New York, New York, New York; 1851-1870: New Buda, Decatur, Iowa.* •

ULFFERS (HERMANN) *1875-1879: Detroit, Wayne, Michigan.* •

ULKE (HENRY) *1853-1860: New York, New*

York, New York; 1861-1910: Washington, DC, District Of Columbia. ●

UMBSCHEIDEN (FRANZ) *1853-1874: Newark, Essex, New Jersey.* ●

UNGER (PETER) *1849-1902: Baltimore, Ind. City: Baltimore, Maryland.* ●

VALENTINY (KARL HEINRICH) *1851-1882: New York, New York, New York.* ●

VARGA (FRANK) *1850-1902: New Buda, Decatur, Iowa.* ●

VETTE (WILHELM) *1849-1871: Detroit, Wayne, Michigan; 1872-1885: Milwaukee, Milwaukee, Wisconsin.* ●

VILLARD (HENRY) *1854-1900: Cincinnati, Hamilton, Ohio.* ●

VILTER (ERNEST) *1850-1902: Lawrence, Douglas, Kansas.* ●

VIOLAND (ERNST) *1850-1875: Peoria, Peoria, Illinois.* ●

VOGT (WILHELM) *1850-1871: Louisville, Jefferson, Kentucky.* ●

VOLCK (ADELBERT JOHN) *1850-1880: Dayton, Montgomery, Ohio; 1881-1912: Baltimore, Ind. City: Baltimore, Maryland.* ●

VORTRIEDE (HEINRICH KARL JULIUS) *1858-1899: Buffalo, Erie, New York.* ●

WAGNER (HEINRICH WALDEMAR) *1860-1902: New York, New York, New York.* ●

WAGNER (PHILIPP) *1850-1895: Boston, Suffolk, Massachussetts.* ●

WAGNER (WILHELM) *1852-1877: Freeport, Stephenson, Illinois.* ●

WANNER (GOTTLIEB) *1851-1879: Cincinnati, Hamilton, Ohio.* ●

WAPPICH (LEOPOLD) *1849-1902: Buffalo, Erie, New York.* ●

WEBBER (J. B.) *1850-1902: Farmersburg, Clayton, Iowa.* ●

WEBER (GUSTAV CARL ERICH) *1850-1853: Saint Louis, St. Louis, Missouri; 1854-1856: New York, New York, New York; 1857-1912: Cleveland, Cuyahoga, Ohio.* ●

WEBER (JACOB) *1850-1902: New York, New York, New York.* ●

WEBER (MAX) *1851-1901: New York, New York, New York.* ●

WEDEKIND (FRIEDRICH WILHELM) *1850-1865: San Francisco, San Francisco, California; 1866-1888: New York, New York, New York.* ●

WEDISWEILER () *1850-1902: New York, New York, New York.* ●

WEIGEL (PHILIPP F.) *1851-1881: Saint Louis, St. Louis, Missouri; 1882-1902: Denver, Denver, Colorado.* ●

WEIL (L.) *1850-1902: Leavenworth, Leavenworth, Kansas.* ●

WEILER (HENRY) *1850-1902: Lawrence, Douglas, Kansas.* ●

WEITLING (WILHELM) *1847-1871: New York, New York, New York.* ●

WERMERSKIRCH (WM. M.) *1850-1902: New York, New York, New York.* ●

WERNERT (J. B.) *1850-1902: Cincinnati, Hamilton, Ohio.* ●

WESENDONCK (HUGO) *1850-1860: Philadelphia, Philadelphia, Pennsylvania; 1861-1900: New York, New York, New York.* ●

WEYDEMEYER (JOSEPH) *1852-1865: New York, New York, New York; 1856-1858: Milwaukee, Milwaukee, Wisconsin; 1859-1860: Chicago, Cook, Illinois; 1866-1866: Saint Louis, St. Louis, Missouri.* ●

WIEDINGER (BERNHARD MARIA) *1852-1860: Philadelphia, Philadelphia, Pennsylvania; 1861-1861: Saint Joseph, Buchanan, Missouri; 1862-1894: Chicago, Cook, Illinois.* ●

WIEDRICH (MICHAEL) *1851-1899: Buffalo, Erie, New York.* ●

WIESNER (ADOLPH) *1851-1860: Baltimore, Ind. City: Baltimore, Maryland.* ●

WILHELMI (FRANZ) *1850-1868: Saint Louis, St. Louis, Missouri; 1869-1870: Saint John'S, Franklin, Missouri; 1871-1883: Washington, Franklin, Missouri.* ●

WILLICH (AUGUST) *1854-1858: New York, New York, New York; 1859-1878: Cincinnati, Hamilton, Ohio.* ●

WILLLMAN (ANDREAS) *1850-1902: New York, New York, New York.* ●

WILSON (B.) *1850-1902: New York, New York, New York.* ●

WISS (GEORGE EDWARD) *1850-1902: Baltimore, Ind. City: Baltimore, Maryland.* ●

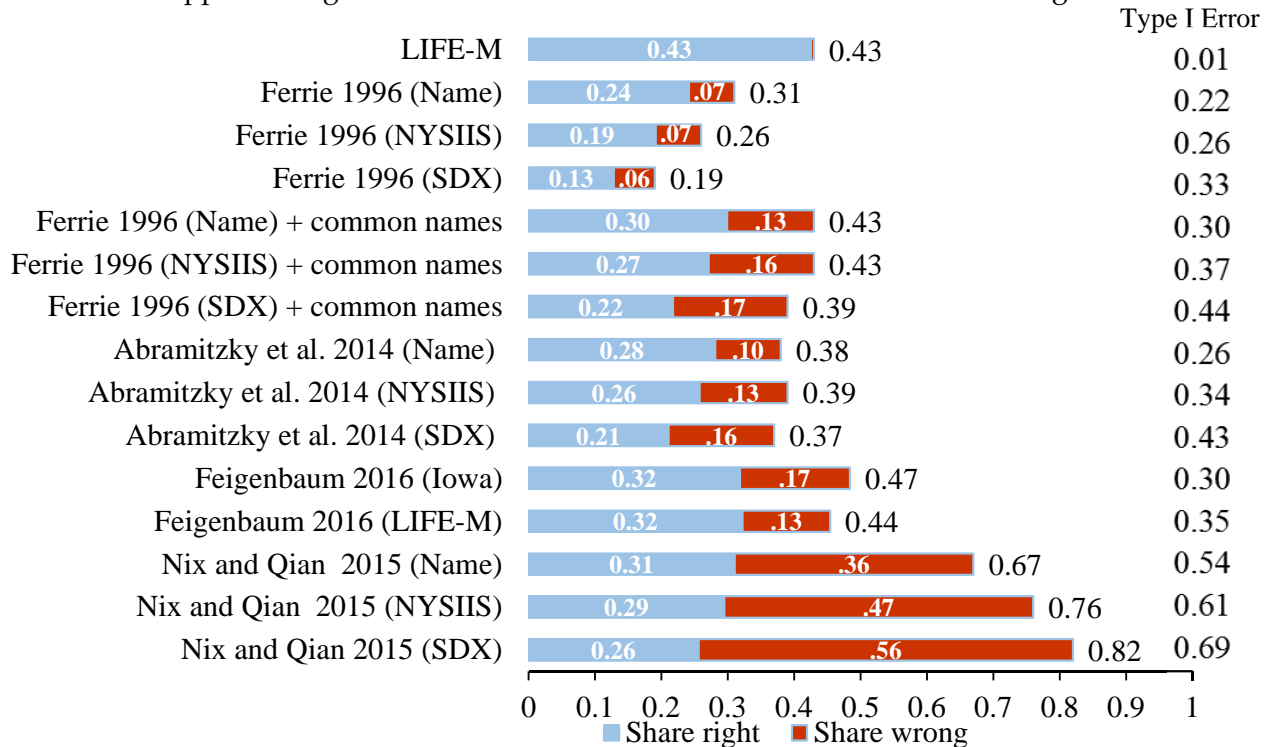**WISSERT** (JOSEPH) *1850-1902: New York, New York, New York.* ●

WITTICH (ALBERT) *1849-1877: Cincinnati, Hamilton, Ohio.* •

WOHLGEMUTH (F.) *1850-1902: New York, New York, New York.* •

WOLFF (ALBERT) *1853-1902: St. Paul'S, Ramsey, Minnesota.* •

WRATISLAW (EDWARD C.) *1849-1867: New York, New York, New York; 1868-1871: Bridgeport, Fairfield, Connecticut; 1872-1902: New Haven, New Haven, Connecticut.* •

WUTSCHEL (FRANZ) *1849-1902: New York, New York, New York.* •

ZENTMAYER (JOSEPH) *1856-1888: Philadelphia, Philadelphia, Pennsylvania.* •

ZERRAHN (CARL) *1855-1909: Boston, Suffolk, Massachussetts.* •

ZIEGLER (KARL T.) *1849-1882: Newark, Essex, New Jersey.* •

ZIMMERMANN (JOHANN) *1849-1884: Cincinnati, Hamilton, Ohio.* •

ZIPPERLEN (ADOLPH) *1850-1905: Franklin, Summit, Ohio.* •

ZITZ (FRANZ H.) *1856-1861: New York, New York, New York; 1862-1877: Jersey, Hudson, New Jersey.* •

ZITZER (JOHANN) *1850-1865: Carlisle, Cumberland, Pennsylvania; 1866-1883: Baltimore, Ind. City: Baltimore, Maryland.* •

ZUNDT (ERNST ANTON) *1858-1858: Green Bay, Brown, Wisconsin; 1859-1864: Milwaukee, Milwaukee, Wisconsin; 1865-1868: Saint Louis, Ind. City: St. Louis, Missouri; 1869-1902: Jefferson, Cole, Missouri.* •

Online Appendix C   Alternative Linkage Methods for Robustness Checks

One problem with record linkage methods is that we do not yet have a commonly agreed method to perform the matching process. This has led to the development of different algorithms which are often tweaked and altered by the following applications. Bailey et al. (2017) review several of these methods and show that no algorithm can consistently produce samples that are representative of the underlying population. This includes linking records by hand. Secondly, most methods produce high rates of false links and these linking errors are not random but related to baseline characteristics of individuals. Figure 2 from Bailey et al. (2017) summarizes the performance of different record linkage algorithms by plotting their share of correct and incorrect matches, and the type I error rate.

The lowest error rate is achieved by Ferrie (1996) who links only individuals with uncommon names. This reduces the dimensionality problem, issues of name ties, and produces fairly accurate matches. A natural robustness check is thus to re-link the passenger lists and Census data using his approach. The downside is the reduction in sample size and an arbitrary choice of what defines an *uncommon* name. The robustness check in this section follows the spirit of Ferrie (1996) by selecting uncommon names from the passenger lists which are the top 10 and 20% of uncommon names in the frequency distribution of surnames. After this selection has been made, the steps from the previous matching algorithm are followed.

Online Appendix Figure 2: Match Rates and False Links across Record Linkage Methods

Method	Share right	Share wrong	Total	Type I Error
LIFE-M	0.43		0.43	0.01
Ferrie 1996 (Name)	0.24	.07	0.31	0.22
Ferrie 1996 (NYSIIS)	0.19	.07	0.26	0.26
Ferrie 1996 (SDX)	0.13	.06	0.19	0.33
Ferrie 1996 (Name) + common names	0.30	.13	0.43	0.30
Ferrie 1996 (NYSIIS) + common names	0.27	.16	0.43	0.37
Ferrie 1996 (SDX) + common names	0.22	.17	0.39	0.44
Abramitzky et al. 2014 (Name)	0.28	.10	0.38	0.26
Abramitzky et al. 2014 (NYSIIS)	0.26	.13	0.39	0.34
Abramitzky et al. 2014 (SDX)	0.21	.16	0.37	0.43
Feigenbaum 2016 (Iowa)	0.32	.17	0.47	0.30
Feigenbaum 2016 (LIFE-M)	0.32	.13	0.44	0.35
Nix and Qian 2015 (Name)	0.31	.36	0.67	0.54
Nix and Qian 2015 (NYSIIS)	0.29	.47	0.76	0.61
Nix and Qian 2015 (SDX)	0.26	.56	0.82	0.69

0   0.1   0.2   0.3   0.4   0.5   0.6   0.7   0.8   0.9   1
■ Share right   ■ Share wrong

Notes: Comparison of different record linkage algorithms using the ground truth data from the LIFE-M survey. Type I errors are the false match rate over the total match rate and measure the chance of false positives, i.e. matches that were made when they should not. Methods are compared using original names, and names that were transformed via phonetic score using NYSIIS or soundex (SDX). The algorithms are described in detail in Bailey et al. (2017).

Online Appendix Table 1: Changing Political Landscape in the 1850s United States

Years:	1840	1844	1848	1852	1856	1860	1864	1868	1872
American					X				
Constitutional Union						X			
Democrat	X	X	X	X	X	X	X	X	X
Freesoil			X	X					
Liberty		X							
Republican					X	X	X	X	X
Whig	X	X	X	X					

Note: The columns represent presidential elections. Listed in the rows are all parties listed in the ICPSR voting data in this timeframe. An 'X' denotes that a party was on the ballot in a presidential election. The Liberty Party merged into the Free-Soil Party. The anti-slavery members of the American Party joined the Republican Party after 1858, the pro-slavery wing supported the Constitutional Union Party.

Online Appendix D   Political Landscape

The political landscape of the U.S. was constantly changing during the 1840s and 1850s: The *Liberty Party* had emerged as an abolitionist party in 1840. In 1848, the majority of the *Liberty Party* formed a grand coalition with other factions to become the the *Free Soil Party*. The *Free Soil Party* was staunchly anti-slavery but supported a broader platform that included supporters of homesteading at the frontier and supporters of the transcontinental railroad with a terminus in Chicago and no St. Louis. Finally, in 1854 the *Free Soil Party* formed a grand coalition with other factions to form the *Republican Party*. The *Republican Party* did not become really influential until the 1856 presidential election. Online Appendix Table 1 reports which parties ran in each of the presidential elections between 1840 and 1872. Historical presidential and congressional election data is readily available at the county level from the *Electoral Data for Counties in the United States: Presidential and Congressional Races, 1840-1972* (Clubb, Flanigan and Zingale, 1987).

We attempted collecting voting outcomes at the *state-level electoral districts* as a different unit of analysis, but this proved futile. One downside is that the data availability and quality varies a lot by state. In some states, we can obtain vote margins, in others the best we can get is a dummy variable for the party affiliation of the winner. A second downside is that state-level electoral districts in larger states are not more disaggregated than counties. Consequently, we cannot always improve on the county-data. Illinois, for example, had detailed historical voting data but the level of 61 electoral districts as opposed to its 96 counties.

We report county-level results of the the *Forty-Eighters*' effect on voting for the Republican Party in Online Appendix Table 2, for the 1,014 counties where Presidential election voting data existed in 1848 and 1860 in Clubb et al. (1987). The Republican party was founded in 1854, between the 1852 and 1856 Presidential elections. To define a change in the Republican vote share from 1848 to 1860, we used the *Free Soil Party* vote share as the baseline. The change in the vote share has a theoretical maximum of 100, and a theoretical minimum of -100. Its mean is 15. In column 1, we include no controls, in columns 2 and 3 we include two (mostly overlapping) sets of controls selected through variable selection models. Overall, the results suggest that one *Forty-Eighters* increased the change in the Republican vote share by one percentage point. The effect on the Democratic party is negative, though insignificantly so. While the Democratic party was the main alternative to the Republican party in 1860, most of the 1848–1860 gain in Republican vote

Online Appendix Table 2: County-Level Voting Results

	Δ Republican VoteShare (1848-1860)			Δ Democratic VoteShare (1848-1860)		
	(1)	(2)	(3)	(4)	(5)	(6)
# FourtyEighters	1.040***	0.819**	0.594**	-0.177	-0.294	-0.229
	(3.312)	(2.174)	(1.987)	(-1.191)	(-1.290)	(-1.029)
Controls	-	#:11 (Akaike's)	#:14 (Adjust R-sq)	-	#:11 (Akaike's)	#:14 (Adjust R-sq)
N:	1,014	1,014	1,014	1,014	1,014	1,014
R^2	0.007	0.421	0.619	0.001	0.241	0.266

Notes: This table reports on the 1,014 counties for which Presidential election voting data existed in 1848 and 1860. In column 1, we include no controls; in columns 2 and 3, we include two (mostly overlapping) sets of controls selected through variable selection models.

shares did not come from the Democrats but instead from the Whig party, which had completely disintegrated by 1860.

Online Appendix E Inferring Soldiers' Nationality Using a Machine Learning Algorithm

This section describes how we trained a Machine Learning Algorithm on the 1860 Full Count U.S. Census discussed in Appendix A.2 (where we observe place of birth) and then applied the trained algorithm to the Union Army Enlistment Data discussed in Appendix A.4 (where we do not observe place of birth).

A vast corpus of computer science and statistical learning literature is devoted to the question if characters of a word can be used to investigate how words are classified. In comparison to proper nouns of other types (such as company names), personal names have many more conventional structures than others. For example, German names tend to end with "berg" or "mann", while Mexican names often end with "guez" or "arro". At the same time, naming conventions become less stable and much more difficult to identify when a model predicts a specific nationality given a specific individual name.

Despite the availability and simplicity of name data, few studies utilize personal names to predict individual nationality or ethnicity. Using decision trees, Ambekar, Ward, Mohammed, Male and Skiena (2009) and Treeratpituk and Giles (2012) classify ethnic groups on a corpus of news data. Chang, Rosenn, Backstrom and Marlow (2010) develop a Bayesian classifier with name data from the U.S. Census. Harris (2015) predicts ethnicity based on proportions of each unique name within ethnic groups.

One of the key challenges with predicting nationality based on name information is that important patterns (i.e., combinations of n specific name characters, n-grams) are not known a priori. The standard way developed in statistics and econometrics to approach this problem includes two-steps. In a first step, all potential combinations of characters of a given length n, n-grams, are extracted from the corpus of names and are used as binary covariates. In the next step, a statistical model (e.g., logistic regression, ridge-regression, random forest, etc) is applied to the processed data to calculate predictions. This approach, however, requires a significant computation capacity and often fails even on industrial supercomputers.

Mikolov, Karafiát, Burget, Cernock and Khudanpur (2010) and Bahdanau, Cho and Bengio (2014) show that recurrent neural networks are cost-effective alternatives to other approaches to language modeling. Recurrent neural networks iteratively introduce additional n-grams as covariates, update the prediction and keep them only if the quality of prediction increased higher than a certain threshold. Thus, they effectively keep and operate over important patterns only. Bahdanau et al. (2014) show that recurrent neural networks outperform most of the standard models of statistical learning on large-size data-sets for tasks such as machine translation while not suffering from over-fitting (see also, Hochreiter and Schmidhuber (1997)). Kim, Jernite, Sontag and Rush (2016) , Chiu and Nichols (2015), and Lee, Kim, Ko, Choi, Choi and Kang (2017) use character level embedding with a recurrent neural network for a set of classification tasks, including personal name classification.

We build on the results from Hochreiter and Schmidhuber (1997), Chiu and Nichols (2015), and Lee et al. (2017) to develop a recurrent neural network based model which predicts nationality using an individual's first and last name. Using character embedding, our model automatically extracts character-level features for the fist and last name to predict the propensity with which a person belongs to a specific nationality (Germany, Scandinavia, Italy, Ireland, or 'Other/USA'). We trained our model with back-propagation through time (Werbos, 1990).

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