Persecution Perpetuated: The Medieval Origins of Anti-Semitic Violence in Nazi Germany

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Abstract: How persistent are cultural traits? This paper uses data on anti-Semitism in Germany and finds continuity at the local level over more than half a millennium. When the Black Death hit Europe in 1348-50, killing between one third and one half of the population, its cause was unknown. Many contemporaries blamed the Jews. Cities all over Germany witnessed mass killings of their Jewish population. At the same time, numerous Jewish communities were spared these horrors. We use plague pogroms as an indicator for medieval anti-Semitism. Pogroms during the Black Death are a strong and robust predictor of violence against Jews in the 1920s, and of votes for the Nazi Party. In addition, cities that saw medieval anti-Semitic violence also had higher deportation rates for Jews after 1933, were more likely to see synagogues damaged or destroyed in the Night of Broken Glass in 1938, and their inhabitants wrote more anti-Jewish letters to the editor of the Nazi newspaper *Der Stürmer*.

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I. Introduction

The Holocaust is a defining moment in world history. More than sixty years after the end of World War II, the systematic, industrialized mass murder of six million Jews, planned and carried out by what had been widely considered a highly civilized country, continues to fascinate and appal. It has also largely defied attempts at historical explanation. While some authors have emphasized the deep historical roots of German anti-Semitism, others have pointed to pan-European causes (Goldhagen 1996; Eley 2000; Kautz 2003). An important strand of the literature argues that the tragedy of Europe's Jews can never be rationalized (Levi 1987).

In this paper, we examine the medieval origins of anti-Semitic sentiment and racial violence. Many countries have a history of pogroms against Jews. Medieval Germany was no different. During both the Crusades and at the time of the Black Death, Jews were murdered in large numbers. In many towns, the entire community vanished in 1348-50. We compile a new dataset on the geography of pogroms in medieval Germany, before and during the Black Death. We then compare the location of these outbreaks with persecutions of the Jewish population in Germany during the 1920s and 1930s.

Long before the Nazis came to power in 1933, anti-Semitic sentiment was growing in Weimar Germany. Right-wing parties and associations blamed Jews for the lost World War I. In many cities, Jewish graves were desecrated, and shop-windows smashed (Walter 1999). The Nazi Party and similar groups received a high share of votes in many parts of the country throughout the 1920s. After 1933, attacks on Jews intensified. We show that places which engaged in pogroms during the Black Death were also more likely to see anti-Semitic violence, and to express anti-Semitic sentiments in the Weimar Republic and during the Nazi dictatorship.

Several indicators demonstrate the strength of this continuity. We compile data on anti-Jewish pogroms during the 1920s, votes for the NSDAP (especially during its early years, when it was not yet a popular mass movement), readers' letters to a virulently anti-Semitic Nazi newspaper (*Der Stürmer*), attacks on synagogues during the "Night of Broken Glass" (*Reichskristallnacht*) in 1938, as well as data on the timing and number of deportations of Jews to concentration camps. All these indicators suggest that localities with a history of pogroms in the Middle Ages also showed much higher proportions of anti-Semitic sentiment and violence in the years after 1920. We demonstrate this using both standard regression analysis and matching based on geographical distance.

We subject these results to several robustness checks. The areas showing anti-Semitic violence in the Middle Ages are not heavily concentrated geographically – results are not driven by spatial correlation. We also conduct a placebo test for voting results from the Weimar Republic, showing that local areas with a medieval history of violence against Jews were not more likely to vote for other right-wing parties without a radical anti-Semitic program. Hence, the association we find is not simply a reflection of radical right-wing attitudes overall. In addition, we test if 20th century outcome variables are different according to the history of medieval violence. We look at the composition of the workforce, the percentage of Protestants and of Jews, and the growth of towns since medieval times, and find no systematic differences between towns with and without pogroms in 1349.

Pogroms occurred for a variety of reasons, such as economic incentives, the political constellation in each town, and the underlying anti-Semitic sentiment of the population (Cohn 2007). The first two factors are unlikely to have persisted over a period of 600 years. We think of the Black Death as an exogenous shock that lowered the threshold for violence. Where anti-Semitic feelings ran high and the authorities cooperated or failed to stop the violence, pogroms erupted. Similarly, the general rise of anti-Semitism in Germany after 1918 lowered the threshold for violence. Where underlying sentiment was already against the Jews, more attacks occurred. If local culture is highly persistent, we should see that the same places that burned their Jews in the Middle Ages also witnessed more attacks in the 20th century. Thus, while population growth in Germany between the Middle Ages and the early 20th century was substantial, it does not appear to have transformed locals' preferences. Our findings also suggest that research attributing the persistence of inter-group hatred to the continued visibility of the "enemy" are not a good explanation of the persistence of anti-Semitic attitudes – many locations were without a Jewish population for centuries after the Black Death (Fiske 2000).

This paper contributes to the literature on the long-run effects of local culture. Alesina and La Ferrara (2005) have argued that cultural and religious fragmentation is robustly associated with important outcome variables, such as civil wars, corruption, and public good provision. Bisin and Verdier (2000) build a model of the dynamics of cultural transmission, and show under what conditions heterogeneity of ethnic and cultural traits can survive over the long run.[1] Tabellini (2008) examines interactions of individuals with different degrees of 'morality,' and shows how their proportion varies as a result of parental investment. Recently, attention has been devoted to

[1] A more general model is Bisin and Verdier (2001). Cf. also the overview in Bisin (2010).

the historical roots of present-day conditions. Guiso, Sapienza, and Zingales (2008) show that free medieval cities in Italy still have higher levels of interpersonal trust today. There is also evidence that a history of Ottoman domination is associated with higher corruption in the present (Grosjean 2009), that having been a member of the Habsburg Empire is associated with lower corruption in today's successor states (Becker et al. 2011), that the historic use of the plough in agriculture affects contemporaneous gender roles (Alesina, Giuliano, and Nunn 2010), the effect of changing religious norms on literacy (Botticini and Eckstein 2007), and that the slave trade in Africa led to permanently lower levels of trust (Nunn and Wantchekon 2009).[2] In a similar spirit to our paper, Jha (2008) argues that Indian trading ports with a history of peaceful cooperation between Hindus and Muslims going back to the Middle Ages saw less violent conflict during the period 1850-1950 and in 2002. We also connect with recent work looking at the long-run effects of 'deep' parameters such as technological starting conditions, genetic origin, and population composition (Spolaore and Wacziarg 2009; Comin, Easterly, and Gong 2010; Putterman and Weil 2008).

Relative to this literature, our main contribution is to show the persistence of a 'pure' cultural trait (i.e., without economic benefits) over the very long run. Other studies conclude that economically beneficial features of culture – for example trust in the case of cities, or corruption for individuals – can persist once they become established. Economic gain and its cultural determinants, such as trust, are probably mutually reinforcing. This is true, for example, of the Italian city states analysed by Guiso, Sapienza, and Zingales (2008), as well as the work of Jha (2008). In contrast, the perpetuation of racial hatred in Germany over centuries shows that cultural traits that are prima facie not economically beneficial can show similar persistence. This finding is particularly striking given that Jews largely disappeared from Germany after the wave of pogroms in the late Middle Ages.[3]

We also add to research on the origins of anti-Semitism and the causes of racial hatred in interwar Germany. The literature is far too vast to be surveyed comprehensively here. Two strands are of particular importance. One asks if the Holocaust was ultimately a reflection of certain, deep-rooted aspects of German culture. Goldhagen's (1996) controversial book made

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[2] Other important work includes the argument by Grosjean (2010) that attitudes towards violence in the US today reflect the importance of cattle-herding in countries from which present-day citizens' ancestors migrated, and work by Durante (2010) who concludes that higher climatic variability since 1500 is associated with more trust.

[3] From the 19th century onwards, Jews resettled in Germany in large numbers. By 1920, almost all towns in our sample have Jewish inhabitants.

this claim in stark form, arguing that the Holocaust was simply the logical consequence of systemic Jew-hatred in Germany. Browning (1992) had earlier shown that a battalion of middle-aged Hamburg policemen ('ordinary men'), with coercion, participated in the mass-shootings of men, women and children in Poland during World War II. Critics were quick to point out that even the policemen in Browning's study did not necessarily show anti-Semitic attitudes in other walks of life. Participation in mass murder may have been more a reflection of peer pressure than a consequence of individual preferences. In contrast to the literature begun by Browning and Goldhagen, which ties the genocide to deeper cultural and sociological parameters of the perpetrators, other scholars have argued that the Holocaust was ultimately the consequence of economic and demographic considerations (Aly and Heim 2003), or that events on the Eastern front determined the fate of Europe's Jews (Mayer 1988; Nolte 1986).

Another strand in the literature focuses on the roots of anti-Semitism more broadly. Scholars such as Cohn (2007) emphasize the role of economic and social conditions in creating systematic anti-Jewish violence in 1348-50. Similar arguments have been made for other times and places. For modern anti-Semitism, some authors have emphasized the role of modernization. Increasing social mobility and civic rights are said to have heightened the fears of non-Jews about their social status (Arendt 1994; Almog 1990; Lindemann 2000). The modernization hypothesis has difficulty explaining the waxing and waning of anti-Semitism over time, as well as the differences in levels across countries (Brustein and King 2004). Glaeser (2005) has argued that in relatively undemocratic states like Russia and Germany, 19th century politics favoured attacks on Jews as a potent tool for right-wing 'hatred mongers.'

One alternative is the so-called scapegoat theory, which argues that Jews are typically blamed for misfortune in times of crisis (Ettinger 1980; Katz 1980; Fein 1987). The problem with this theory is that in many instances – Italy after World War I, for example – there was no appreciable rise in anti-Semitism (Brustein and King 2004). Finally, some authors have attributed the origins of modern-day anti-Semitism to the role of the state in granting emancipation. Where strong states imposed equality, anti-Semitism flourished; weak states saw no such reaction (Birnbaum and Kochan 1992). Our findings suggest that important variations at the regional and local level are as much in need of explanation as national differences.[4]

[4] This ties in with a trend in the historiography emphasizing 'history from below' and micro studies (Möller, Wirsching, and Ziegler 1996; Heilbronner 1990).

The plan of the paper is as follows. We first describe our data and the historical context and background of anti-Semitism in the Middle Ages. Next, we present our main empirical results. The robustness and implications of our findings are discussed in section IV. Section V concludes.

II. Data and Historical Context

We use data on anti-Semitic violence at two points in time – for the medieval period, and the years 1920-1945. In this section, we describe the historical context and background of anti-Jewish sentiment and violence. We also explain how our dataset was constructed (additional detail is provided in the appendix). Our principal indicator for medieval violence against Jews is pogroms during the Black Death. A wave of Jew burning swept through much of Western Europe when the Black Death erupted in 1348-50 (Cohn 2007). Germany is a particularly useful setting for our purposes due to its political fragmentation. Elsewhere, Jews had often been expelled by central authorities before the Black Death.[5] There is rich variation in pogroms at the local and regional level in Germany. We can therefore compare medieval outbreaks of anti-Semitic violence with similar acts committed in the same areas more than half a millennium later, between 1920 and 1945.

Pogroms and Jewish Settlements in the Middle Ages

Jews probably first settled in Germany during the Roman period.[6] The documentary record begins around the year 1000, when there are confirmed settlements in major cities like Worms, Speyer, Cologne, and Mainz (Haverkamp 2002). By the 14th century, there were nearly 300 confirmed localities with Jewish communities.[7]

Pogroms against Jews began not long after the earliest confirmed settlements were established. The crusades in 1096, 1146, and 1309 witnessed mass killings of Jews in towns along the river Rhine. In addition, there was a long history of sporadic but often deadly attacks. The so-called

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[5] Jews had been expelled from England in 1290 and from France in 1306/22. They were then partly recalled to France, and finally expelled in 1359. Outbreaks of anti-Semitic violence also occurred during the Spanish expulsion of 1492.

[6] Throughout, we refer to Germany as the area under German control in 1938.

[7] There are good reasons to believe that better documentation, and not only a spreading of Jewish settlements, was responsible for this rise in numbers (Toch 2010).

Rintfleisch pogroms in Bavaria and Franconia in the late 13th century saw the destruction of over 140 communities (Toch 2003). In the same category are the *Guter Werner* attacks (1287) in the mid-Rhine area, and the *Armleder* pogroms (1336) in Franconia and Saxony (Toch 2010). Many of the pogroms unconnected with the plague or the crusades began with accusations against Jews for ritual murder, poisoning of wells, or host desecration.[8]

By far the most wide-spread and violent pogroms occurred at the time of the Black Death. One of the deadliest epidemics in history, it spread from the Crimea to Southern Italy, France, Switzerland, and into Central Europe. The plague killed between a third and half of Europe's population between 1348 and 1350 (McNeil 1975). Faced with a disease of unprecedented deadliness in living memory, Christians were quick to blame Jews for poisoning wells and foodstuffs. After the first confessions were extracted under torture, the allegations spread from town to town.[9] Wandering groups of flagellants moved from city to city, engaging in ritual self-punishment to atone for mankind's sins – which they thought was the ultimate cause of the plague. Their arrival often helped to usher in the destruction of the Jewish community (Gottfried 1985).

The Jews of Zurich were relatively fortunate – they were merely expelled.[10] Despite declarations by the medical faculties in Montpellier and Paris that the allegations of well-poisoning were false, many towns murdered their Jewish populations. In Basle, approximately 600 Jews were gathered in a wooden house, constructed for the purpose, on an island in the river Rhine. There they were burned (Gottfried 1985). Elsewhere, some city authorities and local princes tried to shield 'their' Jews; few were successful. The city council of Strasbourg intended to save its Jewish inhabitants. As a result, it was deposed. The next council then arrested the Jews, who were burned on St. Valentine's Day (Foa 2000).[11] Elsewhere, peasants and unruly mobs set upon the Jews who had been expelled or tried to flee (Gottfried 1985).

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[8] We also collect this information from the Germania Judaica (Avneri 1968). The information is dated in parts. Hence, we supplement it with data from newer sources (Alicke 2008; Haverkamp 2002).

[9] Earlier, Jews had already been accused and attacked for spreading the plague in Spain (Benedictow 2004).

[10] Zurich is not in our sample since Switzerland is not part of Germany in the borders of 1938.

[11] The case is disputed (Cohn 2007). Another famous example of elites shielding Jews involves the Duke Albrecht of Austria. He initially intervened to stop the killing of Jews. Eventually, faced with direct challenges by local rulers to his authority, and under orders of his own judges, he had all the Jews living in his territories burned (Cohn 2007). There is substantial uncertainty about the extent of elite involvement in the mass killings of Jews in general (Haverkamp 2002).

The chronicles of towns that burned their Jews rarely give any explanation. The same dearth of sources restricts the analysis of locations where no assaults are recorded. In some cases, it is not certain that Jews dwelled in the town at the time of the Black Death. But in many cases, we can be certain that Jews lived in towns which did not carry out attacks. In Halberstadt in central Germany, for example, transactions with Jewish money lenders are recorded right before and during the Black Death; there is no record of any violence. The most likely interpretation, and the one we subscribe to, is that in locations where Jews lived, but where no pogrom occurred, anti-Semitic sentiment was weaker. This resulted in less pressure by artisans and peasants on the authorities to burn or expel the local Jewish community.

As our main source for the medieval period, we use the Germania Judaica [GJ].[12] Initiated as a research project by the German Society for the Advancement of Jewish Studies in 1903, GJ was conceived as a comprehensive description of Jewish settlement history in the German Empire from the origins to the Congress of Vienna in 1814. Its three completed volumes begin with the earliest known Jewish settlements in Germany, and end in 1519. We code all localities listed in volume 2 (which covers the period 1238 to 1350) as having Jewish communities for the purposes of our study. In addition, we supplement this list with information from the recent work by Alicke (2008). Whenever the evidence for a medieval Jewish settlement is ambiguous, we drop the observation.

The scholars compiling GJ drew on a number of original documents and secondary works. An important source are the so-called *Memorbücher*. These collections, compiled in the Middle Ages, contain remembrances of dead community members and prayers. From the 13th century onwards, they developed into a particular literary form. Some of them contain more detailed information, such as lists of victims during particular outbursts of violence (e.g., during the 1348-50 pogroms, or during the first crusade). The plague pogroms are mainly recorded in the Martyrologium of the Nürnberg Memorbuch (Salfeld 1898). Several other communities, such as Deutz, also compiled their own versions.

As the principal indicator for violence against Jews in the Middle Ages, we code whether there was a pogrom in 1348-50. A typical entry in GJ reads as follows:

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[12] Avneri (1968).

> Heiligenstadt – […] fortified by 1278, later capital of the principality of Eichsfeld, today Kreisstadt in Thuringia.
>
> At the time of the Black Death, the Jews of Heiligenstadt were systematically killed. Survivors were recorded in Erfurt in 1365, and in Frankfurt in 1389. Heiligenstadt only admitted Jews again in 1469.

The overwhelming majority of towns with Jewish populations witnessed mass killings in 1348-50. Of 293 observations, 214 (73%) recorded pogroms.

Figure 1 depicts pogrom intensity during the Black Death on a map of Germany in its 1938 borders. Areas where every single town showed violent attacks on Jews are coded black; the others show varying shades of blue, depending on the frequency of pogroms. Areas without data reflect those parts of Germany where there are no records of medieval Jewish settlements. While there are white spots on the map, the information derived from GJ covers all the major parts of Germany. The Rhineland, Franconia, and Hesse stand out as areas with a high frequency of attacks. At the same time, even at the very local level, the intensity of attacks varied substantially.

[insert Figure 1 here]

Germany after World War I

Imperial Germany was home to several anti-Semitic parties and associations, especially in Hesse and Saxony. They initiated a plebiscite in 1880/81 that would have restricted the civic rights of Jews and limited their immigration to Germany. The list of signatories, over 200,000 strong, was given to Chancellor Bismarck. Nothing came of the initiative (Wawrzinek 1927). Anti-Semitic parties received some 350,000 votes in 1890. Thereafter, their share of the vote dwindled until they disappeared as independent organizations (Levy 1974).

Anti-Semitism in Germany grew rapidly after 1914. During the war, right-wing organizations spread rumours that Jews were not serving at the front, and were instead profiting from the war. The German Army High Command ordered a count of all Jews in uniform, allegedly to counter such claims, but never published the results. After the collapse of 1918, Jews were wrongly blamed for defeat in World War I. This led to another increase in the level of anti-Semitic agitation. Jews had served in high office, including Walther Rathenau, who coordinated the supply of raw materials for the war. Matthias Erzberger, another prominent politician and a Jew, opposed the war openly from 1917 onwards. He signed the humiliating armistice with the

Entente in 1918. As chairman of the armistice commission and later, as Finance Minister, he implemented many of the provisions of the Versailles treaty, including a large hike in taxes to pay for reparations.

In addition, Jews provided some of the leadership for the German revolution of 1918 and attempts to establish socialist regimes thereafter. In Munich, Kurt Eisner proclaimed a Soviet Republic; Gustav Landauer and Eugen Levine held positions of great influence. Rosa Luxemburg attempted to organize a revolution along Bolshevist lines.[13] The ultra-left bid for power was eventually thwarted by demobilized army units. Radical right-wing groups quickly seized on the involvement of leading Jewish politicians in the revolution, the armistice, and the peace treaty of Versailles. The (incorrect) claim that Germany's army had been 'stabbed in the back' and never been defeated in the field directly pointed the finger at the revolution of 1918 as the key factor that lost the war.

During Weimar Germany's period of economic decline and social unrest after 1918, numerous right-wing parties with anti-Semitic programmes sprang up. Hitler's National Socialist German Workers Party (NSDAP, commonly referred to as the Nazi Party) was only one of many, but amongst the most radical. The German National People's Party (DNVP) continued the anti-Semitic rhetoric of the Imperial era (Hertzman 1963). The DSP (German Socialist Party) developed out of an association of anti-Semites founded under the Empire, called the German Protection League (*Deutscher Schutz- und Trutzbund*). Closest to the NSDAP was the German People's Freedom Party (DVFP), which split from the DNVP because of the latter's lack of radical anti-Semitism. Several members participated in the unsuccessful Hitler putsch of 1923. During the Nazi Party's ban after the putsch, the DVFP joined forces with the NSDAP in some areas.[14] As a result, it picked up a significant share of the NSDAP's voters (Striesow 1981).

Anti-Semitism before 1933 was not limited to support for political parties. Student associations would often exclude Jews. The desecration of Jewish cemeteries occurred with some frequency. Synagogues would be besmirched with graffiti; politicians would hold anti-Semitic speeches (Walter 1999). A growing number of coastal resorts and spas let it be known that Jewish guests were unwelcome. In some places, only some hotels and restaurants would declare themselves

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[13] Luxemburg and Liebknecht led the USPD, the ultra-left wing of the socialist party (SPD). Liebknecht was widely (and incorrectly) believed to be Jewish.

[14] Members of the banned NSDAP reconstituted themselves as a party under the label NSFP, which put forward joint lists with the DVFP. The NSFP later merged with the NSDAP when the ban on the latter expired (Levy 2005).

"uninterested in Jewish guests;" elsewhere, entire towns declared themselves to be open for Christian guests only (Borut 2000).

According to the census of 1925, there were over 560,000 Jews living in Germany. The vast majority (66%) resided in the six biggest cities; the rest was evenly divided between smaller cities and over 1,000 towns and villages with a population size of less than 10,000. For the regional patterns of 20th century violence, our main source is Alicke (2008). From the wealth of information in his Encyclopaedia of Jewish Communities in German-speaking Areas, we focus on evidence about anti-Semitic violence in the 1920s and 1930s. Pogroms before 1933 were rare, but not unknown. We find 37 communities that engaged in major attacks on Jews before the Nazi rise to power. To qualify as such, there has to be physical violence.[15]

In addition, we collect data on the events during the 'Night of Broken Glass' (*Reichskristallnacht*). While much of the violence was centrally directed, it required local co-operation. In a handful of cases, local mayors refused to participate, or stopped SA troopers from burning down the synagogue, etc. We collect information whether synagogues were damaged or destroyed in 1938. We also assemble information on whether synagogues or prayer rooms were in use in 1933.

We derive another indicator of anti-Semitic sentiment from the Nazi newspaper *Der Stürmer*. Edited by Julius Streicher, it was by far the most virulently anti-Jewish of all the Nazi newspapers. *Der Stürmer* was published under the motto 'the Jews are our misfortune,' and it mixed tales of Jewish ritual murders with dark conspiracy theories. It also contained a section with letters to the editor (chosen by the editorial staff for the interest and attitude of the letter received). A typical case involves a mixture of denunciation and pedagogical questions about how bad it is to mingle with Jews. For example, a Hamburg schoolgirl wrote to the newspaper in 1935 (Hahn 1978):

> "Dear Stürmer!
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> I attend a well-known higher secondary school in Hamburg. Regrettably, we still have many Jewish fellow students. Equally regrettably, many German girls are still close friends with these Jewish girls. On special occasions, when we wear [BDM][16] uniforms

[15] Based on Alicke (2008). Political agitation and the desecration of Jewish property alone is not counted under this heading.

[16] BDM- Bund Deutscher Mädchen [Association of German Girls]. This was the equivalent of the Hitler Youth for girls.

> in school, these girls walk arm-in-arm with their Jewish friends. You can imagine what an impression this gives! When confronting the girls in question, they say "stop instigating hatred all the time! Jews are human beings, too, and 'Eva' is a 'modest', 'decent', 'nice' girl!" […] I consider these friendships very dangerous, since the Jews and their corrupting ideas destroy the souls of the girls slowly but surely. Girls at 14 are too innocent to realize the true intentions of their Jewish "girlfriends". I am myself barely 15 years old…"

We use three years of letters to the editor of *Stürmer*, from 1935 to 1938, and code the location of the letter-writer. We then calculate the sum of letters in three categories – those published as article-equivalents (an obvious sign of approbation by the editors), those denouncing named individuals still talking to or having business dealings with Jews, and those asking questions about Jews (e.g., the number of Jews remaining in a city, etc.). Of the 1,260 towns in our dataset, 891 (71%) recorded not a single letter sent to the *Stürmer*. At the other end of the distribution, we find cities like Nürnberg (where the *Stürmer* was edited, and NSDAP party congresses were held) with 73 letters, Munich (77, where the party was founded and the Beerhall putsch took place), Cologne (110), and Berlin (354).

We also use polling data from a number of elections. During its early years, the Nazi Party emphasized its socialist world view and anti-Semitic plans. This changed later, when the party tried to win over more middle class voters. To this end, party officials tried to appear more 'respectable' in the eyes of conservative elites and the army; they underlined its determination to win power by legal means only.[17] While there is debate amongst historians about the exact timing of the change, it is generally dated after 1928. During the Great Depression, the party increasingly underlined economic and social issues. Anti-Semitism never disappeared from the party's manifestos and propaganda, but it was toned down. Oded Heilbronner (2004), summarizing the main research trend over the last few decades, concluded:

> "Until the 1960s most studies of the Nazi Party and National Socialism argued that anti-Semitism was an essential factor in explaining Nazi success before 1933. But in recent decades, numerous studies have shown that anti-Semitism was probably somewhat

[17] Stachura (1978) emphasizes decisions after the election of 1928 as a turning point; Broszat (1960), Bullock (1991), and Bracher (1970) suggest that the decisive changes occurred in 1929.

> underrepresented in Nazi Party activity and propaganda in the period before 1933, particularly in the last years before Hitler became Chancellor."

According to the scholarship on the Nazi Party's electoral strategy, it emphasized anti-Semitism less and less after the early 1920s (Hamilton 1982; Childers 1983). In line with this, we view the early voting results – before the party's surge in general popularity during the Great Depression – as signs of approval for the Nazi Party's ideological program more directly. After the 'turning point' in 1928 (Stachura 1978), the NSDAP became largely a party for disaffected protest voters, who may or may not have shared its more radical ideas. For these reasons, we regard results from May 1928 as a particularly useful indicator for a local population's ideological orientation. The Nazi Party overall only won 3.2 percent of eligible votes in our sample. And yet, in some localities, as many as 34 percent of voters supported the party's program, while in others, not a single vote was cast in favour of the NSDAP.[18] We also use information on the German Völkisch Freedom Party (DVFP). After the Hitler Beerhall putsch, the Nazi Party was banned. The DFVP shared a similar agenda, agitating against the Versailles Treaty and the Dawes Plan.[19] In the May 1924 election, the DFVP absorbed much of the Nazi vote. We find a correlation of .67 between the voting results of the DFVP in 1924 and the Nazi Party in 1928, significant at the 1% level.

To check for robustness, we also use NSDAP voting data from later elections. As the party gained electoral appeal, the distribution of votes by district approximates the normal distribution more and more – locations with radical views are less easily identified as the party's mass support swamped the factors that drove its early appeal. Figure 2 gives an overview of how voting results changed over time. We plot results for the DVFP in 1924, and for the NSDAP in 1928-1933.[20] After 1928, a continuous shift of the distribution to the right is apparent. At the same time, relative differences between the average and the most fervently pro-Nazi district become harder to identify.

[insert Figure 2 here]

In Figure 3, we show the geographical distribution of votes for the Nazi Party in 1928. Bavaria, the upper Rhine region, as well as Schleswig-Holstein are areas of great strength. As in Figure 1,

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[18] The latter occurred in 7 cities in our sample – all with less than 2,000 eligible voters.

[19] This is reflected in an (abortive) attempt to merge the two parties in 1924/25.

[20] More specifically, we examine the elections in May 1928, September 1930, and March 1933.

we see huge variation at the regional level, with areas of very low vote shares immediately adjacent to those with the highest proportions of votes for the Nazi Party.

[insert Figure 3 here]

Finally, we use data on deportations of German Jews to assess the strength of anti-Semitic sentiment in each town. The German Federal Archive (*Bundesarchiv*) has compiled detailed data from available records, at the level of each municipality, for deportations, including the name, date of birth, date of deportation, destination, and (where known) ultimate fate of each individual.[21] Mass deportations to the East began only in 1941. As early as 1938, Polish Jews living in Germany were rounded up and transported to the German-Polish border, and then forced to cross. Before that date, and during the pogroms of the 'Night of Broken Glass,' Jews from some towns were deported to concentration camps in the Reich.

In our empirical analysis, we examine how many deportations took place, conditioning on the number of Jews living in a town. Remaining differences reflect, in our view, local sentiment. This is because many rules for the treatment of Jews were anything but clear-cut. Deportations could occur at the instigation of local town and party officials; exemptions (for 'quarter Jews,' i.e., those with only one Jewish grandparent; for veterans of World War I; or for those married to gentiles) could be applied for and needed to be approved. Under these conditions, local administrators could find themselves in a position of great power. Lobbying could postpone the day of reckoning for some Jews; for others, denunciations spelled an early transfer to the camps.

Table 1 gives an overview of the main variables in our dataset, which comprises more than 1,200 towns and cities. The average town has a little over 20,000 inhabitants, but the largest city in the dataset (Berlin) has over 4.4 million. Jews are on average a small part of the population (2.4%). In almost 80% of locations, there was a synagogue or a dedicated place for religious worship by Jews in 1933. The average city gave 6.9% of votes to the Völkisch-Nationalist DVFP in 1924, 3.2% to the NSDAP in 1928, and saw a rise in the Nazi vote to 18.7% by 1930. For all the voting shares, there is substantial variation from municipality to municipality. The number of anti-Semitic letters to the *Stürmer* between 1935-38 shows a range from 0 to 354 (which we scale by town/city population in our empirical analysis). The average town reported 113 deportees, ranging from 0 to 55,807. Of the overall sample, 24% have confirmed records of Jewish settlement in the Middle Ages; 17.1% of the sample witnessed pogroms during the Black Death.

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[21] Bundesarchiv (2007). The register of names and places is available online at http://www.bundesarchiv.de/gedenkbuch/

[insert Table 1 here]

In Table 2, we explore some basic correlation patterns in our data. We find that almost all the indicators of anti-Semitism – modern and medieval – are significantly and positively correlated with the DVFP vote in 1924, and with the NSDAP vote in 1928. For the 1930 NSDAP vote, the association is mostly positive, but weak. *Stürmer* letters, on the other hand, are strongly associated with Black Death pogroms.

[insert Table 2 here]

III. Empirical Results

In this section we present our main results. We argue that pogroms during the Black Death in 1348-50 reflect medieval anti-Semitism. As described in Section II, the Black Death was a common shock that lowered the overall threshold for violence against Jews. In some cities, citizens responded with anti-Semitic violence, while the Jewish inhabitants in others were unharmed. We show that the general upsurge in anti-Semitic sentiment in Germany after World War I was more intense in cities that saw Black Death pogroms six centuries earlier.

We use two versions of the same dataset. One contains only the towns that have direct evidence of Jewish settlement in the 14th century (restricted sample). The other uses information on all the municipalities with 20th century data (full sample). The interpretation of results differs by dataset. In the case of the restricted sample, estimated effects capture the increase in 20th century anti-Semitism that is associated with Black Death pogroms. For the full dataset, we implicitly assume that towns without recorded Jewish settlements in the 14th century are similar to those that had Jewish communities, but recorded no pogroms. Results are similar across datasets.

Specification of Regressions

We use two empirical strategies. First, standard regression analysis with a variety of estimators, from OLS to Poisson. Second, we employ geographical matching to compare nearby towns with and without Black Death pogroms. In this way, we control for unobserved local characteristics.

Regressions take the following general form:

$$AS_i = \alpha + \beta \cdot Pog_i^{1349} + \gamma X_i + \varepsilon_i \,,$$

where AS_i represents the various proxies for anti-Semitism in the Weimar Republic and Nazi Germany at the city level i, Pog_i^{1349} is an indicator variable for Black Death pogroms, and X_i is a

vector of control variables. Contingent on the dependent variable, we allow for different distributions of the error term ε_i, instead of limiting ourselves to normal ones only (OLS). Our full sample contains more than 1,200 cities within the 1938 borders of Germany; for 293 of these, Jewish settlements before the Black Death are documented (restricted sample).

The interpretation of β depends on the sample used in the respective regression. For the full sample, β describes the average increase in 20th century anti-Semitism (AS_i) in cities with Black Death pogroms, as compared to *all* cities without pogroms in 1349.[22] The comparison thus includes cities without documented medieval Jewish communities. In other words, the control group contains cities for which 'treatment' (i.e., Black Death pogroms) was probably impossible because of a lack of Jewish settlement. The restricted sample addresses this issue, and β compares cities with Black Death pogroms to those without violent attacks on their documented Jewish population in 1349.

We begin by demonstrating a strong relationship between Black Death attacks and pogroms in the 1920s Weimar Republic. Next, we investigate the relationship between Black Death pogroms and election outcomes for the Nazi Party (NSDAP) in May 1928. As discussed in Section II, the Nazi Party had a strong focus on anti-Semitism until about 1928, and then shifted to less extreme positions for reasons of broad electability until its takeover in 1933. Correspondingly, we find a strong association between pogroms in 1349 and NSDAP vote shares in 1928. The same is true for the election in May 1924, when the NSDAP was banned and its politicians instead co-operated closely with the anti-Semitic German Völkisch Freedom Party (DVFP). We also show that the correlation between Black Death pogroms and NSDAP election outcomes disappears in the 1930s, in line with the party temporarily shifting its focus away from anti-Semitism. Similar results also hold for additional indicators of anti-Semitism such as the deportations of Jews after 1933, as well as letters to the editor of the particularly anti-Semitic Nazi newspaper *Der Stürmer*. Finally, we turn to assaults on synagogues during the Night of Broken Glass in 1938. While relatively few synagogues were spared damage or destruction, the local variation reveals again a strong relationship with pogroms in 1349.

A Comparison of Two Cities

To fix ideas, let us compare two cities. We will focus on Würzburg, population 101,000 in 1933, with Aachen, population 162,000. Würzburg had a Jewish community since 1100 (Alicke 2008),

[22] More precisely, Black Death pogroms occurred between 1348 and 1350. For ease of exposition, we refer to them as pogroms in 1349 in the following.

and Aachen since 1242 (Avneri 1968). The former saw a pogrom during the Black Death; the latter did not.

Würzburg's Jews suffered persecution early. A pogrom in 1147 destroyed the community. During the *Rintfleisch* pogroms in 1298, some 800 Jews died. During the Black Death, the bishop's pro-notary, Michael de Leone, recorded his feelings in 1349 in two poems. He concluded that 'the Jews deserved to be swallowed up in the flames' (Cohn 2007). In both cities, synagogues were destroyed in 1938. In Würzburg there were also pogroms in the 1920s; the *Stürmer* published 23 letters from readers (a frequency 10 times higher than average). Würzburg had a Nazi share of the vote in May 1928 of 6.3%, when the mean district recorded 3.4%. We know that 943 Jews were deported after 1933 (out of a community of 2,145 in 1933, equivalent to 44%).[23] Of these, 3 were early deportations (before 1938), which were almost always the result of denunciations by Nazi Party extremists.

The city of Aachen provides a stark contrast with Würzburg. Jews were first recorded in 1242, paying taxes. For the 13th century, several Jews born in Aachen are recorded in the lists of the dead of other towns. The town had a 'Judengasse' [street for Jews] in 1330. For Aachen, the *Germania Judaica* explicitly states that there is no record of anti-Semitic violence, neither before the Black Death nor during it. This is despite the fact that, in 1349, citizens of Brussels wrote to the Aachen authorities urging them "to take care that the Jews don't poison the wells" (Avneri 1968). Aachen also saw no pogroms in the 1920s or in 1933. The *Stürmer* published only 10 letters (or less than half the number for Würzburg, despite a population that was 60% larger). Only 1% of voters in Aachen backed the NSDAP in 1928. 502 out of 1,345 Jews are known to have been deported, or 37% of the total. There were no early deportations.

Pogroms in the 1920s

Pogroms in the 1920s were infrequent and highly localized affairs. While embedded in a broader context of anti-Semitic agitation and acts, such as attacks on shops, we only count recorded acts of physical violence. In the following we show that cities with Black Death pogroms had, on average, significantly more pogroms in the 1920s than cities without pogroms in 1349. As Table 3 shows, our full sample comprises 1,244 cities (panel A). In 293 of these, there were Jewish

[23] This does not imply that 56% were not deported. The files of the Bundesarchiv are not perfect, and especially in the later stages of the war, record-keeping degenerated. Also, the survival of evidence was less than assured at a time of numerous bombing-raids, etc. In addition, emigration of Jews before 1939 likely accounts for much of the gap.

communities prior to the Black Death (panel B). In 73% of these localities (214 out 293), the Black Death coincided with pogroms. The 1920s saw 33 pogroms in Weimar Germany overall. Of these, 18 occurred in the 214 cities with pogroms in 1349. The remaining 1,030 cities without medieval Jewish settlements and/or Black Death pogroms experienced 15 pogroms altogether. The contrast is even more striking if we restrict attention to those localities with confirmed medieval communities of Jews (panel B of Table 3): 19 pogroms were reported for the 293 cities, and out of these, 18 occurred in cities that also saw Black Death pogroms.

[insert Table 3 here]

Table 4 reports regressions of pogroms in the 1920s on Black Death pogroms. The table shows that there is a positive and significant association both for the full sample (columns 1 and 2) as well as for the sample that is restricted to cities with medieval Jewish communities (columns 3-6). The effect is quantitatively important, with Black Death pogroms increasing the probability of pogroms in the 1920s by approximately 7 percent, from roughly 1% to more than 8%. Both magnitude and significance are robust to controlling for population, the share of Jewish population, as well as the share of Protestants. We add the latter to the list of exogenous variables because Protestant regions on average were much more prone to favour the Nazi cause in the Weimar period (Falter 1991). Finally, as columns 5 and 6 show, both Probit and propensity score matching estimation confirm the OLS results.[24]

[insert Table 4 here]

Election Results

We now turn to parliamentary federal elections in the Weimar Republic. Following our discussion in Section II, the May 1928 election is arguably the most reliable indicator for anti-Semitism. This is because the NSDAP emphasized the anti-Semitic and 'socialist' side of its program strongly in the early- and mid-1920s. As it aspired to greater respectability in the eyes of middle class voters, the NSDAP toned down this part of its ideology. Table 5 shows the outcomes of four elections between 1924 and 1933, divided into cities with and without Black Death pogroms. Panel A presents the results for the full sample, while panel B is restricted to cities with medieval Jewish population. In the two earlier elections, vote shares for the anti-Semitic DVFP and NSDAP are more than one percentage point higher in cities with pogroms in

[24] We use the 5 closest matches for propensity score estimation throughout most of the paper. Results are very similar when changing this number.

1349.[25] In the 1928 election, this means that the NSDAP added more than a third to its typical vote share in cities with pogroms in 1349. Those numbers hold for both the full sample and the restricted sample.

[insert Table 5 here]

Table 6 shows the corresponding regressions. Column 1 reports the coefficient for the effect of a history of Black Death pogroms on NSDAP votes across all cities in our sample, and column 2 adds a variety of controls. Columns 3 and 4 repeat this exercise for the restricted sample. In all cases, we find a significantly positive correlation, and its magnitude indicates that NSDAP votes were more than 1% higher in cities with anti-Semitic violence in 1349. That is, in these cities the NSDAP added about one third to its average share of the vote of approximately 3.5%. The control variables show that Protestants voted in relatively larger proportion for the NSDAP than the average population, which confirms the findings by Falter (1991).[26] In addition, cities with many blue-collar workers saw less support for the Nazi Party. Workers typically voted for the Social Democrats or the Communists (Childers 1983). In line with this argument, we find a coefficient on city population that is negative but not always significant. Finally, the percentage of Jews in the population and election turnout are not significantly correlated with NSDAP votes in 1928.

[insert Table 6 here]

Column 5 runs a Poisson maximum likelihood regression. We report these results because the distribution of NSDAP votes in 1928 is heavily right-skewed (see Figure 2). Following Wooldridge (2002), linear models may not be appropriate for 'corner-solution' specifications, where a significant mass of the non-negative observations is close to zero. The ML results confirm our earlier findings. The estimated coefficient implies that the average effect of a pogrom in 1349 on NSDAP votes in 1928 is .463×.039=.0181, where .039 is the average vote (panel B of Table 5). Finally, in column 6, we use Propensity Score Matching to estimate the average treatment effects of Black Death pogroms. This addresses the concern that covariates influence both treatment (pogroms in 1349) and response (anti-Semitism in Weimar Germany). This methodology confirms our results in terms of magnitude and significance.

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[25] In 1924, the NSDAP was officially banned and ran on a joint list with the DVFP.

[26] Other authors attribute the relative strength of the NSDAP in Protestant areas to its weakness in proposing policies that could have appealed to farmers in Southern (Catholic) areas (King et al. 2008).

Table 7 repeats the same exercise for the German Völkisch Freedom Party (DVFP) in May 1924. Following the unsuccessful Hitler putsch, the Nazi Party was banned in many German states. In several places, DVFP put forward Nazi candidates, and a surrogate party for the NSDAP formed joint electoral lists with the DVFP (NSFP). We find similar results to those for NSDAP votes in 1928. On average, Black Death pogroms increase the DVFP vote by 2-3 percentage points. To put things in context, in the sample as a whole, the DVFP/NSFP polled 6.9% in 1924.[27] The results with control variables show strong and significant increases in the vote share for the DVFP where medieval pogroms occurred. These findings are confirmed when we use Poisson maximum likelihood estimation, and with standard matching estimation.[28]

[insert Table 7 here]

Next, we analyze the correlation of Black Death pogroms with NSDAP election results in 1930 and 1933. Table 8 shows that the estimated coefficient is positive and significant only in the 1930 election for the full sample, and is insignificant once the sample is restricted to cities with medieval Jewish communities.[29] Because of the declining importance of anti-Semitic agitation for the NSDAP, it is easy to rationalize the declining correlation with medieval pogroms. In addition, as the party received an ever larger share of the popular vote (see Figure 2), it becomes more difficult to identify extreme local attitudes.

[insert Table 8 here]

Deportations, Stürmer letters, and assaults on synagogues

We now turn to additional indicators of anti-Semitism in Nazi Germany. We begin with deportations of Jews between 1933 and 1944. While the result of a centrally directed effort, deportations in any one town and village partly reflected the level of hostility shown by local authorities. In Figure 4, we compare deportations from towns with and without 1349 pogroms. To control for the number of Jews present in 1933, we plot the residual of a regression of the log of the number of deportees on the log of Jewish residents in 1933 (which gives a coefficient of

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[27] The coefficient on pogrom 1349 is insignificant in the specification in column 3, where the fit is also very low. Once additional controls are included, improving the R^2, the variable becomes again significant.

[28] Using the average vote corresponding to the restricted sample (panel B in Table 5), the average effect of a pogrom in 1349 on DVFP votes in 1924 is .266×.086=.023, according to the Poisson ML estimate in column 5.

[29] This is also true when we exclude all control variables in columns 2 and 5.

.92 and a t-statistic of 43). The distribution for cities with Black Death pogroms is shifted sharply to the right, indicating that their Jewish population suffered relatively more from deportations.

[insert Figure 4 here]

Table 9 reports regressions of deportations during the Nazi regime on Black Death pogroms. We use data on deportations at the city level for the period from 1933-45, controlling for initial Jewish population – measured in 1933 (panel A) and 1939 (panel B). We begin by describing the results reported in panel A. The OLS estimate for the full sample in column 1 is significantly positive, suggesting an increase in deportations by 13.7%. In the restricted sample (cities with confirmed Jewish communities in 1349 only), we find a coefficient of 14% (column 2). The coefficient is statistically insignificant, which is, however, not surprising. In addition to the reduced sample size in column 2, the deportation variable is strongly right-skewed, with a large share of zero or close-to-zero observations (this holds even for the natural logarithm, as used in columns 1-4). Thus, the OLS estimator is probably inappropriate (Wooldridge 2002). In columns 3 and 4, we use the matching estimator, which does not rely on a particular probability distribution. The results are positive and highly significant. In addition, we use Poisson ML estimation in columns 5 and 6. This avoids log-linearizing the dependent variable and thus preserves the higher moments of the distribution (Silva and Tenreyro 2006; Santos Silva, Tenreyro, and Windmeijer 2008). This specification also shows a strong positive correlation between Black Death pogroms and deportations in Nazi Germany. On average, 175 Jews were deported from cities in the restricted sample. Thus, the coefficient of .23 from the ML estimation implies that the difference in deportee numbers is more than 40 for cities with vs. without pogroms in 1349.

[insert Table 9 here]

After 1933, more than half of Germany's Jews emigrated. This creates a potential issue with the results in panel A. More anti-Semitic tendencies may have triggered more emigration before 1939, and thus fewer deportations thereafter. To address this, we repeat the analysis, controlling for the remaining Jewish population in 1939. Results are very similar overall, as panel B of Table 9 shows.[30] In particular, the OLS results in columns 1 and 2 suggest an even larger effect than in panel A – about 37% more deportations in cities with Black Death pogroms.

[30] The sample size is reduced because some smaller towns had lost (or did not report) their Jewish population in 1939.

Next, we turn to letters to the editor of the Nazi newspaper *Der Stürmer*. In towns with Black Death pogroms, there was one letter sent to the editors for every 36,700 inhabitants; in towns without a pogrom, the frequency falls to one per 51,700.[31] Table 10 shows that the correlation between 1349 pogroms and the number of *Stürmer* letters is significant in the full, but not in the restricted sample under OLS. Again, the dependent variable is heavily right-skewed; OLS may not be appropriate. Columns 3 and 4 therefore report matching estimation results, and columns 5 and 6 use Poisson ML estimation. Both methodologies find a strong positive effect: *Der Stürmer* received significantly more reader letters from cities with Black Death pogroms. Both the population of a city (as expected) and the share of Jewish population increase the number of *Stürmer* letters. In terms of magnitude, the ML estimates imply .386×3.75=1.45 additional letters from a city with Black Death pogrom as compared to an otherwise similar city without medieval pogroms, where 3.75 is the average number of letters in the restricted sample.

[insert Table 10 here]

Our final indicator of anti-Semitic violence are assaults on synagogues during the 'Night of Broken Glass' on 9 November 1938. Much of the violence during that night was centrally directed and organized. At the same time, there were no attacks in a number of towns and cities. The local record is not always clear on why this happened. The historical narratives (Alicke 2008) often stress 'technical' constraints, such as fire hazard, or ownership issues for the building itself. We do not take a view if these were always a pretext, or constituted a true technical constraint on synagogue attacks. However, we see no good reason why such practical difficulties should have been fewer in those German municipalities that participated in medieval pogroms. We find that towns with a history of medieval violence against Jews had a markedly greater tendency to attack synagogues.

Table 11 shows that in our sample, there were 971 cities with synagogues in 1938. Of these, 244 had Jewish communities in the Middle Ages. In the sample as a whole, 94.7% of cities with medieval pogroms saw synagogues damaged or destroyed in the 'Night of Broken Glass.' In cities without Black Death Pogroms, the corresponding figure was substantially lower – 79.8%.[32]

[insert Table 11 here]

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[31] These figures are for the restricted sample, with Jewish settlements in 1349.

[32] When restricting our sample to the 244 cities that had both a Jewish community before the Black Death and a synagogue in 1938 (panel B of Table 11), we find that 95% of cities with pogroms in 1349 damaged or destroyed their synagogue, as compared to 82% for cities without Black Death Pogroms.

Table 12 reports the statistical association between Black Death pogroms and an indicator variable for whether a city's synagogue was damaged or destroyed during the 'Night of Broken Glass.' We show that there is a positive, significant, and robust effect. Columns 1 and 2 report the coefficient for all cities with synagogues, while columns 3-6 restrict the sample to cities that also had Jewish communities in 1349. Our controls include the logarithm of total and Jewish population. The latter is significant and positive in all specifications. Additional controls are the percentage of Jews and Protestants, as well as the unemployment rate and the share of blue collar workers from the 1933 census.[33] The significance of our results is confirmed by both Probit and Matching estimation in columns 5 and 6, respectively. The estimated coefficients indicate that cities with Black Death pogroms were about 5-15% more likely to damage or destroy their synagogues during the Night of Broken Glass.

[insert Table 12 here]

Geographical Matching

We also match towns by geographical distance. As a rich literature in labor economics (Card and Krueger 1997) has argued, comparing places in close proximity can help to overcome omitted variable problems. We thus compare directly towns in immediate proximity where some saw a pogrom in 1349 while others did not. For example, consider the two towns of Königheim and Wertheim. They are 10.3 km apart and had a population of 1,549 and 3,971 in 1933, respectively. Both had a Jewish settlement in the 14th century. Königheim did not see a pogrom during the plague, but Wertheim did. The NSDAP received 1.6% of valid votes in Königheim in 1928; in Wertheim, it received 8.1%.

We generalize this type of comparison by matching all towns in our restricted dataset to their two nearest neighbours with a different history of medieval anti-Semitic violence, using their GPS coordinates.[34] Table 13 gives the results for the full sample (panel A) and the restricted sample (panel B). For all six indicators of anti-Semitism, we find strong and significant effects. Mean and median distances are low – around 10-25 km in most cases. The distance is shorter in the full sample where more potential matches are available, and it varies within the two samples because

[33] We use the 1925 proportion of Protestants because this figure is not available in the 1933 census data.

[34] We use propensity score matching based on the geographic longitude and latitude of towns. Thus, each town that saw a pogrom in 1349 is compared with the two closest towns that did not; and likewise, each town without Black Death pogrom is compared to the two closest towns that did see a pogrom. Restricting the same procedure to one match yields very similar results.

of different availability of 20th century outcome variables.[35] Results are very similar to those presented above. This strongly suggests that our findings are not driven by unobserved heterogeneity at the local level.

[insert Table 13 here]

IV. Robustness of Results

In this subsection, we test the robustness of our results to various specifications. We also run a placebo test for extremist attitudes in general, using election results for the right-wing German National People's Party (DNVP) in 1924. This party was similarly radical as the DVFP, but had a smaller emphasis on anti-Semitism. We also show that anti-Semitism persisted even if Jewish communities disappeared as a consequence of Black Death pogroms, and that coefficients from estimating the full sample can probably be interpreted in a similar vein as those from the restricted sample. Finally, we show that our results also hold when aggregating the data at the precinct level.

Spatial correlation

We begin by controlling for spatial correlation. This complements our geography-based matching estimation in addressing the concern that unobserved local characteristics are correlated with both medieval and 20th century anti-Semitism. While the matching estimator above compared nearby cities, the following analysis uses all observations and a weighting matrix that is based on each city's geographic location. Table 14 reports the results. We consider cities with less than 3 degrees distance (about 330km) as 'neighbours,' assigning them a non-zero spatial weight. As the table shows, all our earlier results are confirmed: Black Death pogroms are significantly positively associated with 1920s pogroms, NSDAP votes in 1928, and DVFP votes in 1924.[36] The magnitude of the coefficients (in particular when including all control variables) is also very similar to the baseline results.

[insert Table 14 here]

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[35] In the case of deportations, we also use the number of Jews in 1939 as a matching variable; for the Stürmer letters, we add the size of the town in 1933. This creates matches with greater average distance.

[36] While being close to zero, the statistical significance of the parameters λ imply that the spatial error model is preferable to OLS in most specifications.

Extreme political attitudes at the local level

It is possible that the association between medieval violence and voting results for the Nazi Party simply reflect a greater degree of extremist political attitudes. We use a 'political experiment' to separate anti-Semitic from right-wing votes cast in 1924. Following the murder of German Foreign Minister Walther Rathenau in 1922, the right-wing DNVP had expelled several extreme anti-Semites from its ranks. As a result, the party split, with the new DVFP pursuing a similarly nationalist and reactionary programme as the DNVP, but with a markedly more radical anti-Semitic element.[37] Holding other characteristics constant, we would expect the DVFP to gain relatively more votes than the DNVP in anti-Semitic cities. We provide evidence that cities with Black Death pogroms voted significantly more for the DVFP, and significantly less for the DNVP. We have already shown the former in Table 7. Table 15 provides evidence for the latter: DNVP votes were about 2-4 percent lower in cities with pogroms in 1349. This is similar to the additional votes gained by the DVFP in these cities (Table 7). Since the programs of the two parties were similarly nationalist and right-wing overall, these findings point towards anti-Semitism rather than extreme political attitudes driving the voting behaviour in cities with Black Death pogroms.

[insert Table 15 here]

Unobservables

Throughout our empirical analysis, we have tried to control for covariates that might have a confounding effect. For example, in the analysis of voting results, we controlled for unemployment and for the share of Protestants, among other variables. Protestants are known to have had a greater susceptibility to the Nazi party's appeal (King et al. 2008). Nonetheless, the underlying assumption remains that towns with and without pogroms are broadly comparable except for their history of medieval anti-Semitism. One way to test for potential heterogeneity is to check if Black Death pogroms predict 20th century outcome variables. The results are summarized in Table 16.

[insert Table 16 here]

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[37] According to Levy's (2005) entry on the DNVP, "Hitler … thought that the Nationalists were demagogic rather than sincerely anti-Semitic and that they were only willing to fight for their own narrow economic interests. Their shopworn anti-Semitism was trotted out only at election time. Suspicions regarding the seriousness in the matter of the Jewish Question were confirmed when moderates gained control of the party, a process accelerated by the murder of Walther Rathenau…"

In the restricted sample (panel A), there are no statistically significant differences between towns with and without pogroms. For cities with pogroms, population growth since 1300 was insignificantly higher.[38] There were slightly fewer blue-collar workers, protestants, and Jews, and somewhat more unemployed in the 1920s and 30s. Turning to the full sample in panel B, we see similar differences as in the restricted sample. Population growth now appears lower than in cities with pogroms, but the effect is again insignificant. Some coefficients are significant – the standard error is smaller due to greater sample size. However, none of the coefficients is robust.[39] Overall, there is little reason to question the broad comparability of the towns with and without pogroms in 1349.

Extinction of Jewish communities in 1349, and full vs. restricted sample

Panel A of Table 17 shows that the link from Black Death pogroms to anti-Semitism in Weimar Germany is present even for cities whose Jewish communities were exterminated completely in 1348-50.[40] We demonstrate this by splitting the indicator variable for *Pogrom 1349* into two components: First, Jewish communities that vanished in 1349 as a result of attacks, and second, Jewish communities that suffered pogroms but survived. Both variables are positive and significant in most specifications, while the first one has larger coefficients. This suggests that 20th century anti-Semitism was particularly vicious in cities where Jewish communities were extinguished in 1349.

[insert Table 17 here]

Panel B of Table 17 sheds light on the interpretation of full vs. restricted sample results. Whenever we used the full sample above, we implicitly compared cities with Black Death pogroms to all other cities, i.e., to cities with and without medieval Jewish communities. Panel B

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[38] The sample is substantially smaller for the city growth regression because relatively few historical observations are available for 1300 (data are from Bairoch, Batou, and Chèvre, 1988). However, most of our results survive even in the smallest sample that includes only cities with observations for population in 1300 and medieval Jewish communities (33-43 observations, depending on the left-hand-side variable): For *Stürmer* letters and deportations, *Pog1349* is significant at the 1% level, for pogroms in the 1920 the coefficient is significant at the 5% level, and for DVFP votes in 1924 at the 10% level.

[39] Once we control for city population in 1933 (not reported in the table), the coefficient on unemployment changes its sign, and %Jewish becomes insignificant. The coefficient in column 4 (share of Protestants) is robust to controlling for city population in 1925, but it changes sign and becomes insignificant once we account for geographic proximity (matching by geographic location, as in Table 13).

[40] For many cities, several centuries passed before Jewish communities returned.

of Table 17 includes a dummy variable for cities that had a Jewish community in 1349 but saw no Black Death pogroms. The variable is insignificant in all specifications. This suggests that towns without Jewish communities in the Middle Ages showed the same level (or lack) of anti-Semitic attitudes and behaviour in the 20th century as those that had Jewish communities, but did not witness Black Death pogroms. While this finding is no statistical proof for the validity of our implicit assumption, it alleviates the concern that we misinterpreted the full sample results.[41]

Results at the precinct level

If spatial correlation was a problem, an additional way of addressing it would be to aggregate our results to a higher level. We do this by conducting our analysis at the precinct level. Because we aggregate cities within any given precinct, we use two indicators for anti-Semitic violence. First, *Pogrom* is an indicator variable that equals one if there was a pogrom in any city within the precinct in the respective period (1348-50 and 1920s). Second, we calculate *Pogrom density* as the number of cities in a precinct with pogroms, divided by the number of cities with Jewish communities in the same precinct for the same period.

Table 18 shows that our main results hold also when we aggregate data at the precinct level and include the full set of controls: Black Death pogroms are correlated significantly with pogroms in Weimar Germany, NSDAP votes in 1928, and DVFP votes in 1924. The magnitude of the effects is also very similar to those reported above at the city-level.

[insert Table 18 here]

Principal component analysis

One additional empirical exercise constructs the principal component of 5 variables used previously as indicators for anti-Semitism in Weimar and Nazi Germany.[42] We use the principal component as the dependent variable in Table 19. In order to interpret the results, we report normalized beta coefficients in columns 1-4. According to the estimates, the effect of pogroms in 1349 is important. A one standard deviation increase in Black Death pogroms raises the dependent variable by .15–.23 standard deviations. This is similar in magnitude to the effect of

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[41] An additional supporting fact is that throughout the paper, coefficients on *Pogrom 1349* are very similar for the full and the restricted sample.

[42] Those include Pogrom in the 1920s, %DVFP votes in 1924, %NSDAP votes in 1928, *Stürmer* letters, and the indicator variable for damaged or destroyed Synagogue during the Night of Broken Glass. We do not include deportations because those require controlling for initial Jewish population.

Protestantism. A one standard deviation increase in the percentage of Jewish population or blue collar workers, on the other hand, decreases the dependent variable by roughly .11 and .16 standard deviations, respectively.

[insert Table 19 here]

V. Conclusion

At the time of the Black Death, Jews were burned in towns and cities all over Germany – but not in all. In this paper, we demonstrate that the same places where violent attacks on Jews during the plague took place also showed more anti-Semitic attitudes more than half a millennium later: They engaged in more anti-Semitic violence in the 1920s, were more likely to vote for the Nazi Party before 1930, , had more citizens writing letters to an anti-Semitic newspaper, organized more deportations of Jews, and saw more attacks on synagogues during the 'Night of Broken Glass' in 1938. These findings are remarkable because they suggest that racial hatred can persist at the town and city-level over the very long run – a period of about 600 years. Strikingly, violent hatred of Jews persisted despite the fact that Jews disappeared in many town and cities for centuries. Also, in contrast to many other findings in the literature on long-run effects of culture, the 'trait' we investigate yields no immediate economic benefit – on the contrary, the economic effect was likely negative because of the Jews' important role as traders and financial intermediaries. Nonetheless, anti-Semitism persisted over the very long run.

Our findings lend some qualified support to theories that seek to explain the systematic mass-murder of Jews under the Nazi regime by Germany's cultural heritage. Goldhagen (1996) argued that the Holocaust reflected widespread, 'exterminationist' anti-Semitic beliefs. While our results do not support this claim at the national level, it underlines the importance of deeper historical roots of anti-Semitic violence in Germany after 1933. At the same time, many countries in Europe saw anti-Jewish pogroms during the Black Death. Only in Germany did they find a direct continuation in the 20th century, perpetrated systematically by the legitimate government.[43]

Even within Germany, there is substantial variation at the local level. Locations differed in terms of their support for the Nazi Party, in anti-Semitic violence in the 1920s and 30s, the number of deportations, and the frequency of anti-Semitic letters. Where there was no medieval history of

[43] We do not think of the violence committed outside Germany after 1939 as comparable. In many instances, it was directly committed by German forces, as well as by local populations at the instigation of the German authorities.

anti-Jewish violence, 20th century Germans were less likely to vote for anti-Jewish parties, or to engage in any number of anti-Semitic acts.

Many studies have asked if the rise of the Nazi Party should be interpreted as a direct consequence of growing, broad-based anti-Semitism in the Weimar Republic. Our findings do not support such an interpretation. The party's political profile changed after 1928. In particular, it became less 'socialist' and less virulently anti-Semitic in its propaganda. While we still find a partial effect of medieval pogroms on the Nazi vote in 1930, this link vanishes as the party's mass appeal grew. This is not to say that anti-Semitic sentiments didn't contribute to the electoral successes of the NSDAP, but the link with its deeper, historical roots became more tenuous in the years leading up to the 'seizure of power' in 1933.[44]

Our results also suggest an agenda for future research. How could a cultural trait have remained stable over such a long period? Models of cultural transmission typically emphasize the need for costly parental investment in children's attitudes and beliefs (Doepke and Zilibotti 2008; Bisin and Verdier 2001). Why such investments would be made continuously, even in the absence of the persecuted minority whose presence could help to 'rationalize' the perpetuation of hatred, is a challenge for theory.

[44] In this sense, our findings support the more revisionist claims by Heilbronner (2004).

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Data Appendix

Medieval data

As described in section II, we use Germania Judaica [GJ] from Avneri (1968) as our principal source. We first establish the presence of a Jewish community based on it being included in GJ, volume II, which is for the period 1238-1350. Where later work by Alicke (2008) mentions that a Jewish community existed during this period, we modify the variable for confirmed settlement accordingly. For each town, city or village where GJ mentions pogroms, violent attacks on the Jewish population, the burning of Jews, or the wholesale extermination of the Jewish community in 1348-50, we code our dummy variable for Black Death pogroms as unity, and zero otherwise.

Data on 20th century violence and anti-Semitic attitudes

We collected data on pogroms in the 1920s, on the number of *Stürmer* letters, on deportations, and on attacks on synagogues. Our source for all of these with the exception of the *Stürmer* letters is Alicke (2008). For pogroms in the 1920s we use a dummy that equals one for cities with documented pogroms during this period. Since Alicke focuses on 'positive' information, i.e., only those events that actually occurred are mentioned, this variable is always assumed to take the value zero unless stated otherwise in Alicke's encyclopedia. In order for riots and the like to qualify as a pogrom-like event, the coding followed closely the definition of a pogrom as a violent outrage against the Jewish population, involving physical violence against and/or the killings of people. Therefore, political agitation through *Brandreden* (incendiary speeches), attacks on Jewish shows, or the desecration of cemeteries was not coded as a pogrom. Only when physical violence against at least one Jewish inhabitant is mentioned in Alicke does this variable take the value of unity.

From Alicke (2008), we also take data on the existence of a synagogue in 1933 (coded as 1 if mentioned as such, and 0 otherwise), as well as on the extent of attacks in 1938 during the 'Night of Broken Glass' (*Reichskristallnacht*). We constructed two dummy variables – one for destroyed synagogues, and one for damaged ones. For the former, we assign a value of zero if no synagogue/s still in use in 1933 were destroyed during *Reichskristallnacht*. "Destruction" occurred if the relevant building was damaged at least to an extent that it became unusable, in which cases Alicke mostly uses the term "zerstört" (destroyed). The variable then takes the value

1. We code our variable for synagogue damage in a locality zero if no synagogue/s still in use in 1933 was damaged during *Reichskristallnacht*. "Damage" we define as any inventory of a synagogue was destroyed or the physical fabric of the building itself was damaged but remained intact. The variable takes the value 1 in these cases. From these two variables, we create a combined variable for synagogues destroyed or damaged.

As an additional variable, the number of published letters to the editor from the anti-Semitic newspaper *Der Stürmer* is included in our dataset. For the years 1935 to 1938, all letters to the editor published in one of three different categories were counted provided their place of origin matched a locality in our dataset. The three categories are: (1.) Letters that were published as articles, e.g., a schoolgirl writing about her classmates still interacting with Jewish pupils. (2.) Letters in which individual Jews or people still talking to/doing business with Jews are denounced. (3.) The category "mailbox" in which *Der Stürmer* answers questions about Jews ("how many Jews live in xyz town?"). We count letters in these three categories for all three years in our analysis, and sum them by locality.

Election data

We use election data initially collected by Jürgen Falter (1991) and his team. The source for their database are the official statistics of the Weimar Republic (*Statistik des Deutschen Reiches*). The vote for each party is calculated as the ratio of the number of valid votes received, divided by the total number of valid votes cast. For May 4, 1924, we analyze the results for the *Deutsch-Völkische Freiheitspartei* (DVFP) as well as for the *Deutschnationale Volkspartei* (DNVP). For the elections of May 20, 1928, September 14, 1930, and March 5, 1933, we focus on the *Nationsozialistische Deutsche Arbeiterpartei* (NSDAP).

For the socio-economic correlates in our section on elections, we use data from Falter (1991), derived from the censuses of 1925 and 1933. These allow us to control for the number of inhabitants, the percentage of the population that is Protestant, the share of Jews, and the percentage of blue-collar workers.

Deportations

The German Federal Archives have compiled a comprehensive list of Jewish deportees during the Nazi period (Bundesarchiv 2007). We use the second, expanded and improved edition. It contains information on 159,972 individuals (Jewish or presumed Jewish by the authorities) who lived in what was considered Germany proper between 1933 and 1945. The database is available online (http://www.bundesarchiv.de/gedenkbuch/directory.html). We consulted the database by

entering every single locality in our dataset into the search engine ("Wohnort"), and then recorded the number of listed deportees for the years 1933-45. A typical entry reads:

Lehmann, Helen	**Lehmann, Helen**
geb. Mayer * 24. Juli 1876 in Maikammer wohnhaft in Meckenheim Deportation: ab Camp de Vernet 19. August 1942, Auschwitz, Vernichtungslager	née Mayer, born 24.7.1876 living in Meckenheim (Rhineland) deported from Camp de Vernet on 19th of August to Auschwitz (extermination camp)

FIGURES

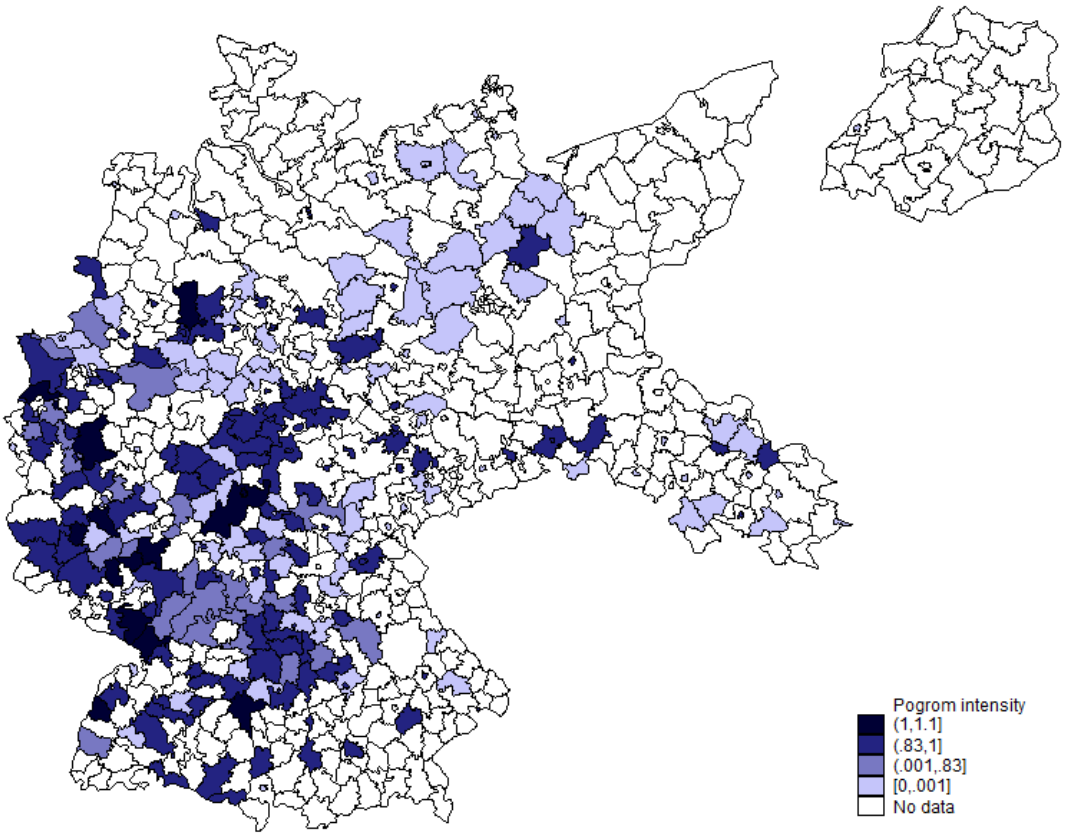

Figure 1: Pogrom intensity in 1348-50

Note: Pogrom intensity is defined at the precinct level as the number of cities with pogroms in 1349 divided by the number of cities with a Jewish community. The lowest category (0-.001] indicates Jewish settlement with no pogroms. We define pogrom intensity=1.1 if a precinct has more than one city with a Jewish community and pogroms in each of these cities.

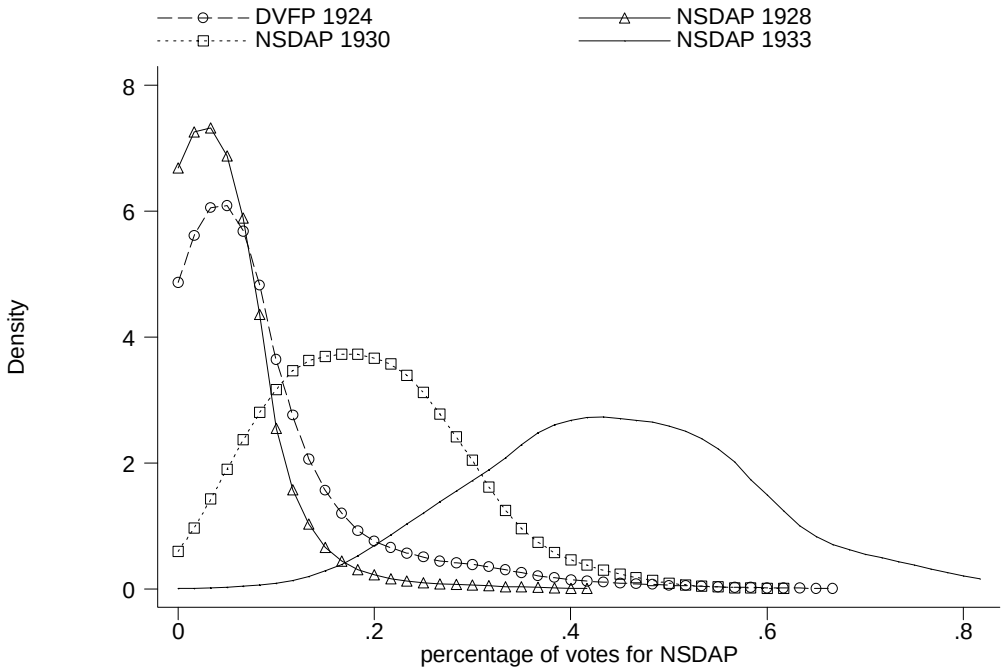

Figure 2: Electoral results for the DVFP and NSDAP, 1924-1933 (kernel density estimates, by district)

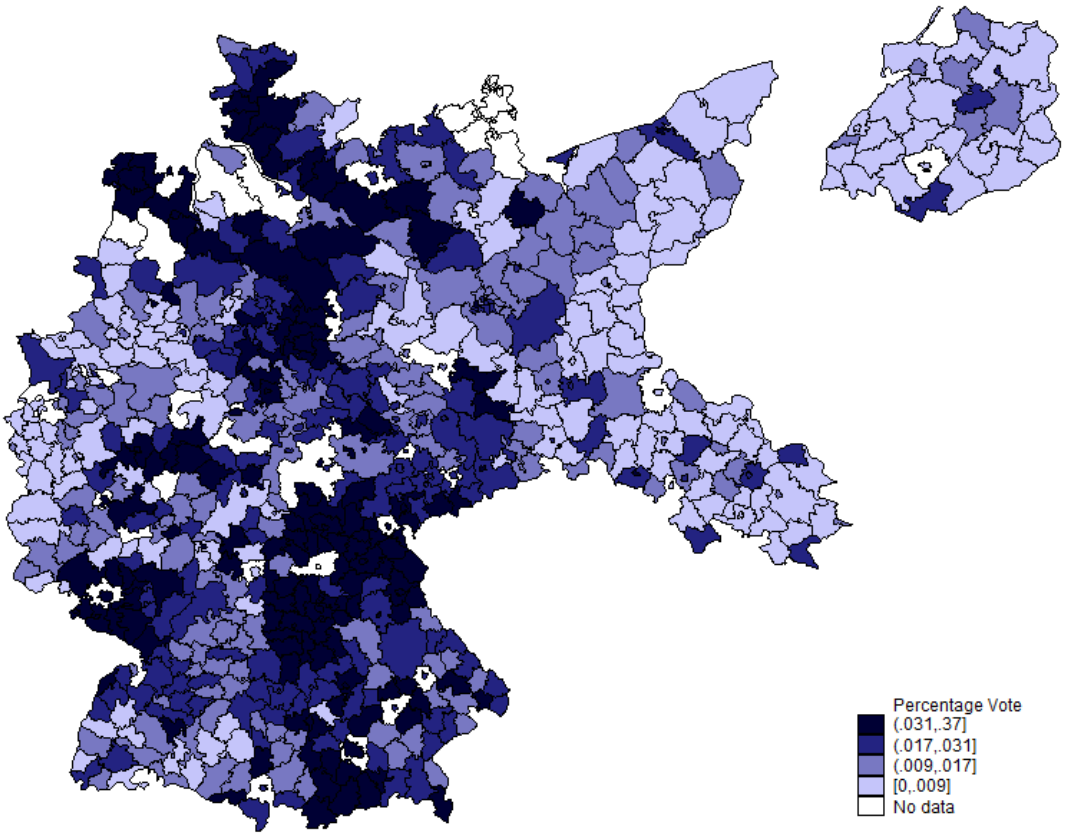

Figure 3: Percentage of votes for the NSDAP in the German national election of 1928

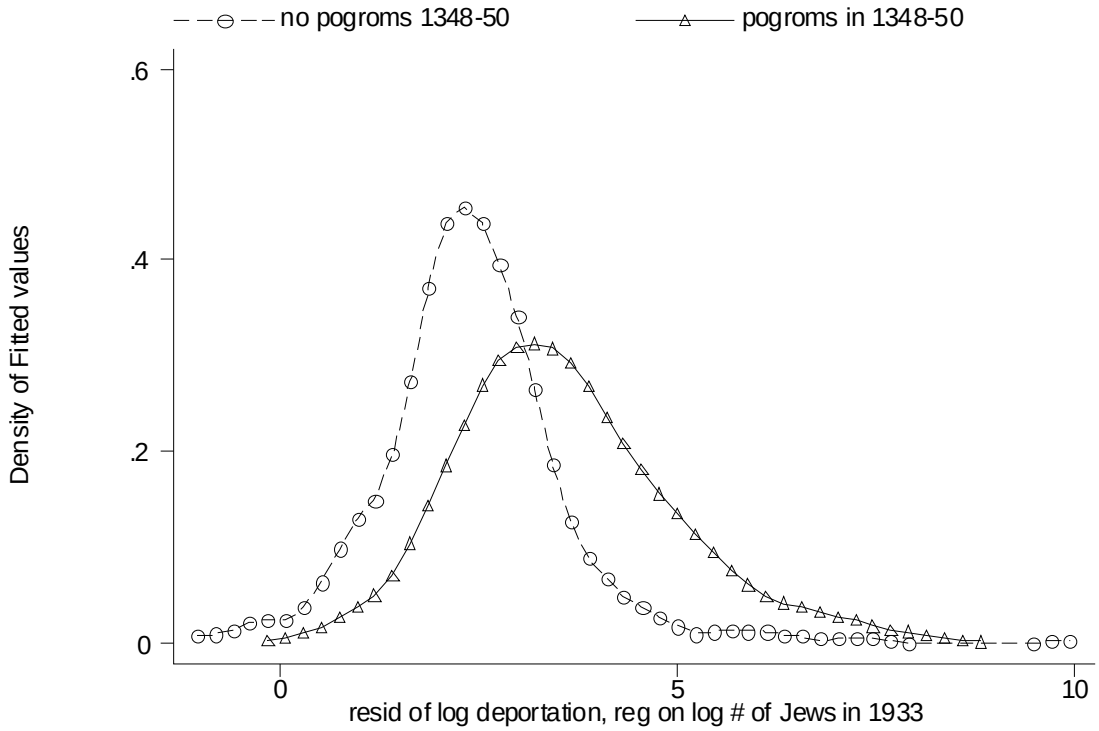

Figure 4: Deportations of Jews, 1933-44, conditional on Black Death Pogroms

TABLES

Table 1: Descriptive statistics

	mean	Std.dev	min	max	Obs.
Population in 1933[$]	22,479	144,213	138	4,449,125	1,260
% Jewish in 1933	.0235	.031	0	.377	1,031
Synagogue in 1933	.788	.409	0	1	1,232
%DVFP votes 1924	.069	.086	0	.593	1,136
%NSDAP votes 1928	.032	.044	0	.359	1,167
%NSDAP votes 1930	.187	.102	.008	.535	1,198
Stürmer letters	1.78	11.44	0	354	1,268
Deportations	112.8	1652.8	0	55,807	1,206
1920s pogroms	.0265	.161	0	1	1,244
Medieval Jewish settlement	.235	.424	0	1	1,268
Black death pogrom	.171	.377	0	1	1,268

Table based on full sample (including cities with and without medieval Jewish communities).
[$] The largest city in the sample is Berlin, which is composed of several boroughs. It is followed by Hamburg, Cologne, and Munich.

Table 2: Correlations between main variables

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Pogrom 1349	1					
(2) Pogrom 1920s	.1633*	1				
(3) %DVFP votes 1924	.1184*	.1288*	1			
(4) %NSDAP votes 1928	.1108*	.0831*	.623*	1		
(5) %NSDAP votes 1930	.0104	.0385	.4126*	.5139*	1	
(6) ln(1 + *Stürmer* letters)	.3198*	.2073*	.0888*	.0238	.0153	1

Table based on full sample (including cities with and without medieval Jewish communities).
[*]significant at the 1% level

Table 3: Black Death Pogroms and Pogroms in the 1920s

Panel A: All Cities

Pogroms in 1920s	Pogrom in 1349: No	Yes	Total
No	1,015 (98.5%)	196 (91.6%)	1,211 (97.4%)
Yes	15 (1.5%)	18 (8.4%)	33 (2.6%)
Total	1,030	214	1,244

Panel B: Cities with Jews in 1348-50

Pogroms in 1920s	Pogrom in 1349: No	Yes	Total
No	78 (98.7%)	196 (91.6%)	274 (93.5%)
Yes	1 (1.3%)	18 (8.4%)	19 (6.5%)
Total	79	214	293

Table 4: Dependent variable: Pogrom 1920s

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS – all cities		OLS	OLS	Probit	ME#
Pogrom in 1349	.0695*** (.0194)	.0668*** (.0189)	.0715*** (.0228)	.0632*** (.0240)	.858** (.422)	.0646*** (.0186)
ln(Pop '25)		.0179*** (.00556)		.0368** (.0159)	.259*** (.0972)	(mv)
% Jewish '25		.0587 (.521)		.404 (1.870)	4.569 (14.31)	(mv)
% Protestant '25		.0271** (.0131)		.0257 (.0461)	.330 (.391)	(mv)
Observations	1244	1242	293	293	293	293
Adjusted R2	.026	.046	.013	.046		

Standard errors in parentheses * p < .10, ** p < .05, *** p < .01

Matching Estimation. Treatment variable is Pogrom 1349. Matching characteristics are the full set of control variables in column (5). The average treatment effect is reported, using robust nearest neighbor estimation with the 5 closest matches. 'mv' indicates match variable.

Table 5: Black Death Pogroms and Elections in Weimar Germany

Panel A: All Cities				Panel B: Cities with Jews 1349		
	Pogrom in 1349			Pogrom in 1349		
	No	Yes	Total	No	Yes	Total
DVFP 1924	.064	.090	.069	.074	.090	.086
NSDAP 1928	.030	.043	.033	.028	.043	.039
NSDAP 1930	.186	.189	.187	.179	.189	.186
NSDAP 1933	.463	.415	.455	.439	.415	.422

Table 6: Dependent variable: % vote for NSDAP in May 1928 election

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS – all cities		OLS	OLS	ML[$]	ME[#]
Pogrom in 1349	.0127***	.0144***	.0148**	.0167***	.463***	.0152***
	(.00431)	(.00425)	(.00573)	(.00609)	(.173)	(.00532)
ln(Pop '25)		-.000443		-.00169	-.0411	(mv)
		(.00121)		(.00237)	(.0607)	
% Jewish '25		-.543**		-.774	-19.81	(mv)
		(.234)		(.482)	(14.47)	
% Protestant '25		.0330***		.0328***	.868***	(mv)
		(.00625)		(.0117)	(.297)	
% Blue collar '33		-.122***		-.134***	-3.551***	(mv)
		(.0319)		(.0470)	(1.200)	
Observations	1167	1166	282	282	282	282
Adjusted R2	.011	.081	.013	.053		

Standard errors in parentheses, clustered at the precinct level. * $p < .10$, ** $p < .05$, *** $p < .01$

[$] Poisson maximum likelihood estimation.

[#] Matching Estimation. Treatment variable is Pogrom 1349. Matching characteristics are the full set of control variables in column (5). The average treatment effect is reported, using robust nearest neighbor estimation with the 5 closest matches. 'mv' indicates match variable.

Table 7: Dependent variable: % vote for DVFP/NSFP in May 1924 election

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS – all cities		OLS	OLS	ML[$]	ME[#]
Pogrom in 1349	.0266***	.0311***	.0166	.0219*	.266*	.0221*
	(.00837)	(.00815)	(.0119)	(.0123)	(.150)	(.0119)
ln(Pop '24)		-.00376*		-.000592	-.00733	(mv)
		(.00225)		(.00454)	(.0536)	
% Jewish '25		-1.279***		-2.296***	-28.80**	(mv)
		(.479)		(.818)	(11.96)	
% Protestant '25		.0795***		.0834***	.985***	(mv)
		(.0125)		(.0249)	(.296)	
% Blue collar '33		-.163**		-.207*	-2.549**	(mv)
		(.0698)		(.108)	(1.203)	
Observations	1136	1135	278	278	278	278
Adjusted R2	.013	.103	.002	.064		

Standard errors in parentheses, clustered at the precinct level. * $p < .10$, ** $p < .05$, *** $p < .01$

[$] Poisson maximum likelihood estimation.

[#] Matching Estimation. Treatment variable is Pogrom 1349. Matching characteristics are the full set of control variables in column (5). The average treatment effect is reported, using robust nearest neighbor estimation with the 5 closest matches. 'mv' indicates match variable.

Table 8: Dependent variable: % vote for NSDAP after 1928

	(1)	(2)	(3)	(4)	(5)	(6)
Year:		- -1930 - -			- -1933 - -	
	OLS	OLS	ME[#]	OLS	OLS	ME[#]
Cities included	all	14CJew	14CJew	all	14CJew	14CJew
Pogrom 1349	.0128**	.0162	.0128	-.0140*	-.00929	-.00230
	(.00598)	(.0118)	(.0126)	(.00806)	(.0145)	(.0134)
ln(Pop)	-.00615**	-.0106**	(mv)	.00850**	-.00358	(mv)
	(.00301)	(.00424)		(.00396)	(.00528)	
% Jewish	-1.310**	-1.546	(mv)	.328**	1.066***	(mv)
	(.580)	(1.001)		(.154)	(.395)	
Additional Controls	yes	yes	(mv)	yes	Yes	(mv)
Observations	1,197	285	285	1,004	294	294
Adjusted R^2	.269	.162		.472	.356	

Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$. Additional controls include: %Protestant '25, %Blue-Collar '33, %Unemployed '33. Population is taken from the election data for the respective year. % Jewish is from the 1925 census for columns 1-3, and from the 1933 census for columns 4-6.

[#]Matching Estimation. Treatment variable is Pogrom 1349. Matching characteristics are the full set of control variables in columns (2) and (4), respectively. The average treatment effect is reported, using nearest neighbor robust estimation with the 5 closest matches. 'mv' indicates match variable.

Table 9: Deportations 1933-1944

Dep. Variable:	ln(1 + number of deported Jews)				number of deported Jews	
	(1) OLS–all	(2) OLS	(3) ME[#]	(4) ME[#]	(5) ML[$]	(6) ML[$]
PANEL A: Controlling for Jewish population in 1933						
Pogrom in 1349	.137*	.141	.352**	.555***	.231***	.159**
	(.0818)	(.142)	(.163)	(.139)	(.0749)	(.0757)
ln(# Jews '33)	.925***	1.044***	(mv)	(mv)	1.019***	.917***
	(.0241)	(.0359)			(.0300)	(.116)
Additional Controls	no	no		(mv)	no	yes
Observations	957	254	254	254	254	254
Adjusted R^2	.652	.766				
PANEL B: Controlling for Jewish population in 1939						
Pogrom in 1349	.370***	.343**	.523**	.645***	.117	.107
	(.0962)	(.170)	(.225)	(.164)	(.118)	(.0988)
ln(# Jews '39)	.730***	.796***	(mv)	(mv)	.929***	.658***
	(.0257)	(.0447)			(.0322)	(.138)
Additional Controls	no	no		(mv)	no	yes
Observations	623	185	185	185	185	185
Adjusted R^2	.749	.801				

Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$. Additional controls include: ln(pop '33), %Protestant, %Jewish, %Blue Collar.

$ Poisson maximum likelihood estimation.

Matching Estimation. Treatment variable is Pogrom 1349. Matching characteristics are the full set of control variables used in columns (1) and (2), respectively. The average treatment effect is reported, using nearest neighbor robust estimation with the 5 closest matches. 'mv' indicates match variable.

Table 10: Letters to the editor, *Der Stürmer*

Dep. variable:	ln(1 + number of letters)				number of letters	
	(1) OLS – all	(2) OLS	(3) ME[#]	(4) ME[#]	(5) ML[$]	(6) ML[$]
Pogrom in 1349	.110*	.0472	.208**	.264***	.386**	.297*
	(.0592)	(.0842)	(.0845)	(.0986)	(.172)	(.161)
ln(# Jews '33)	.237***	.314***	(mv)	(mv)	.580***	.787***
	(.0233)	(.0509)			(.115)	(.146)
ln(Pop '33)	.155***	.201***	(mv)	(mv)	.219**	.0193
	(.0160)	(.0481)			(.112)	(.148)
Additional Controls	no	no	(no)	(mv)	no	yes
Observations	1012	276	276	276	276	276
Adjusted R^2	.497	.560				

Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$. Additional controls include: %Protestant, %Jewish, %Blue Collar.

[$] Poisson maximum likelihood estimation.

[#] Matching Estimation. Treatment variable is Pogrom 1349. Matching characteristics are the full set of control variables used in columns (5) and (6), respectively. The average treatment effect is reported, using robust nearest neighbour estimation with the 5 closest matches. 'mv' indicates match variable.

Table 11: Black Death Pogroms and Assaults on Synagogues

Panel A: All Cities with Synagogue

Syn. destroyed or damaged?	Pogrom in 1349		
	No	Yes	Total
No	158 (20.2%)	10 (5.3%)	168 (17.3%)
Yes	625 (79.8%)	178 (94.7%)	803 (82.7%)
Total	783	188	971

Panel B: Cities with Jews 1349

Syn. destroyed or damaged?	Pogrom in 1349		
	No	Yes	Total
No	10 (17.9%)	10 (5.3%)	20 (8.2%)
Yes	46 (82.1%)	178 (94.7%)	224 (91.8%)
Total	56	188	244

Table 12: Dependent variable: Synagogue damaged or destroyed in 1938

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS, all cities with synagogue		OLS	OLS	Probit	ME[#]
Pogrom in 1349	.149***	.0506**	.125**	.111**	.606**	.126**
	(.0218)	(.0247)	(.0540)	(.0526)	(.289)	(.0589)
ln(Pop '33)		.00299		.0153	.153	(mv)
		(.0193)		(.0172)	(.164)	
ln(# Jews '33)		.0683***		.0348*	.492***	(mv)
		(.0209)		(.0191)	(.165)	
Additional Controls	no	yes	no	yes	yes	(mv)
Observations	971	818	244	230	230	230
Adjusted R^2	.023	.081	.033	.086		

Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$. Additional controls include: % Protestant '25, % Jewish '33, % unemployed '33, and % Blue Collar '33.

[#] Matching Estimation. Treatment variable is Pogrom 1349. Matching characteristics are the full set of control variables in column (6). The average treatment effect is reported, using robust nearest neighbor estimation with the 5 closest matches. 'mv' indicates match variable.

Table 13: Matching by geographic location.

Dep. Variable:	(1) 1920s pogroms	(2) NSDAP 1928	(3) DVFP 1924	(4) Depor-tations	(5) Stürmer letters	(6) Synagogue attacks
PANEL A: Full Sample						
Pogrom 1349	.0874***	.00866***	.0258***	.677***	.160**	.143***
	(.0240)	(.00299)	(.00560)	(.189)	(.0793)	(.0261)
Observations	1242	1165	1134	623	1266	970
Distance to 2 matched cities						
Average	20.5	21.0	20.8	49.3	40.9	21.7
Median	10.5	10.5	10.4	37.4	30.1	11.0
PANEL B: Restricted Sample						
Pogrom 1349	.0870***	.0151***	.0261***	.813***	.259***	.145*
	(.0209)	(.00418)	(.00807)	(.280)	(.100)	(.0800)
Observations	293	282	278	185	298	244
Distance to 2 matched cities						
Average	25.1	24.5	24.4	53.2	41.0	30.9
Median	20.7	20.5	20.2	47.6	36.0	24.7

All regressions run by matching estimation at the city level. Treatment variable is Pogrom 1349. Matching characteristics are geographic longitude and latitude for each city. Column (4) uses ln(# Jews '39), and column (5) ln(Pop '33) in addition to the geographic matching variables. The average treatment effect is reported, using nearest neighbor robust estimation with the 2 closest matches. Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.

Table 14: Spatial Error Regression Model[$]

Dependent Var:	(1)	(2) Pogrom 1920s	(3)	(4) NSDAP vote 1928	(5)	(6) DVFP vote 1924
Pogrom in 1349	.104***	.0711**	.0367***	.0189***	.0855***	.0363***
	(.0361)	(.0329)	(.00480)	(.00626)	(.00683)	(.00989)
ln(Pop)		.0335***		.00170		.00339
		(.0113)		(.00147)		(.00234)
% Jewish '25		1.341		.104		.482
		(2.333)		(.518)		(.808)
% Protestant '25		.0192		.0201*		.0459**
		(.0452)		(.0119)		(.0187)
% Blue collar '33				-.0195		-.0195
				(.0449)		(.0726)
Observations	293	293	278	278	274	274
$\lambda^{\#}$	-.0043	.0007	.0110***	.0131***	.0123***	.0133***
	(.0039)	(.0008)	(.0013)	(.0015)	(.0008)	(.0008)

Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$. Population is taken from the election data for the respective year (in columns 1 and 2, values from the May 1924 election are used).

[$] Estimated by maximum likelihood, using each city's geographic location to derive the weighting matrix. All cities with distance less than 3 degrees (~330km) are considered spatially contiguous and are assigned a nonzero spatial weight.

[#] If $\lambda=0$, the spatial error model reduces to OLS. For $\lambda\neq0$, OLS is unbiased and consistent, but inefficient.

Table 15: Dependent variable: % vote for DNVP in May 1924 election

	(1)	(2) OLS – all cities	(3)	(4) OLS	(5) ML[$]	(6) ME[#]
Pogrom in 1349	-.0325***	-.0221**	-.0382**	-.0283*	-.181*	-.0282*
	(.00947)	(.00791)	(.0185)	(.0156)	(.100)	(.0153)
Controls	no	yes	no	yes	yes	(mv)
Observations	1136	1135	278	278	278	278
Adjusted R2	.007	.284	.018	.264		

Standard errors in parentheses, clustered at the precinct level. * $p < .10$, ** $p < .05$, *** $p < .01$. Controls are the same, for each column, as in Table 7.

[$] Poisson maximum likelihood estimation.

[#] Matching Estimation. Treatment variable is Pogrom 1349. Matching characteristics are the full set of control variables in column (5). The average treatment effect is reported, using robust nearest neighbor estimation with the 5 closest matches. 'mv' indicates match variable.

Table 16: 20th century variables and medieval pogroms

Dep. Variable:	(1) Pop. growth 1300-1933#	(2) % Blue collar '33	(3) %Unemployed '33	(4) %Protestant '25	(5) %Jewish '33
PANEL A: Restricted Sample					
Pogrom 1349	.119	-.00839	.0153	-.0452	-.000439
	(.585)	(.0112)	(.0102)	(.0465)	(.00185)
Observations	43	298	298	298	298
Adjusted R^2	.050	-.001	.006	.000	-.003
PANEL B: Full Sample					
Pogrom 1349	-.902	-.00189	.0204***	-.0708***	-.0121***
	(.618)	(.00583)	(.00513)	(.0260)	(.00172)
Observations	52	1267	1267	1267	1031
Adjusted R^2	.045	-.001	.011	.006	.024

All regressions run by OLS. Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.

Using log population size in 1300 as an additional control variable. City population data for 1300 from Bairoch et al. (1988).

Table 17: Extinction of Jewish communities in 1349, and full vs. restricted sample

Dep. Variable:	(1) 1920s pogroms	(2) NSDAP 1928	(3) DVFP 1924	(4) Depor-tations	(5) Stürmer letters	(6) Synagogue attacks
PANEL A: Extinction of Jewish communities in 1349						
Pogrom 1349, Comm. vanished	.0485**	.0150***	.0346***	.205**	.223***	.0829***
	(.0210)	(.00496)	(.00971)	(.0943)	(.0755)	(.0238)
Pogrom 1349, Comm. survived	.0989***	.0131*	.0239**	-.147	.201**	.0617
	(.0377)	(.00674)	(.0121)	(.116)	(.0923)	(.0379)
ln(Pop)	.0186***	-.000460	-.00386*	.105***	.262***	.0457***
	(.00552)	(.00107)	(.00219)	(.0306)	(.0193)	(.00639)
ln(# Jews '33)				.835***		
				(.0336)		
Additional Controls	no	yes	yes	no	no	no
Observations	1,243	1,166	1,135	957	1,268	971
Adjusted R^2	.048	.080	.102	.654	.379	.056
PANEL B: Cities without Jewish communities vs. cities with Jews and no pogroms in 1349						
Pogrom 1349	.0646***	.0142***	.0320***	.0595	.212***	.0728***
	(.0188)	(.00413)	(.00786)	(.0843)	(.0631)	(.0242)
Medieval Jewish Comm., no pogrom	-.00244	-.00200	.0106	-.172	-.0321	-.0262
	(.0130)	(.00410)	(.00908)	(.123)	(.0761)	(.0524)
ln(Pop)	.0184***	-.000453	-.00369*	.110***	.263***	.0466***
	(.00553)	(.00108)	(.00218)	(.0307)	(.0198)	(.00658)
ln(# Jews '33)				.839***		
				(.0334)		
Additional Controls	no	yes	yes	no	no	no
Observations	1,243	1,166	1,135	957	1,268	971
Adjusted R^2	.044	.080	.103	.658	.379	.056

All regressions run by OLS at the city level. Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.
Additional controls are: %Jewish, %Protestant, %Blue-Collar. Population is taken from the election data for the respective year in columns 1-3 (in columns 1, values from the May 1924 election are used). In columns 4-6, city population is from the 1933 census.

Table 18: Robustness of main results at the precinct level

Dep. Variable:	(1) (2) Pogrom density[$] 1920s		(3) (4) NSDAP vote May 1928		(5) (6) DVFP vote May 1924	
Pogrom in 1349	.0453**		.0151**		.0270**	
	(.0228)		(.00600)		(.0120)	
Pogrom density[$] in 1349		.0630**		.0161***		.0303**
		(.0253)		(.00607)		(.0122)
ln(Pop)	.0234	.0232	-.00742*	-.00715*	-.0201***	-.0198***
	(.0146)	(.0143)	(.00391)	(.00381)	(.00702)	(.00683)
% Jewish '25	.371	.310	-.432	-.426	-1.284	-1.279
	(1.974)	(1.958)	(.450)	(.448)	(.943)	(.937)
Additional Controls	yes	yes	yes	yes	yes	yes
Observations	228	228	230	230	226	226
Adjusted R^2	.020	.030	.081	.084	.106	.111

All regressions run by OLS at the precinct level. Standard errors in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$. Additional controls are: %Protestant; for columns 3-6 also %Blue-Collar. Population is taken from the election data for the respective year (in columns 1 and 2, values from the May 1924 election are used).

[$] Pogrom density = Number of cities in a precinct with pogroms, divided by the number of cities with Jewish communities in the same precinct for the respective period (1348-50 and 1920s).

Table 19: Dependent variable: First principal component of 5 outcome variables[$]

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS – all cities		OLS	OLS	ML[#]	ME[##]
Pogrom in 1349	.213***	.228***	.143***	.154***	.0478***	.484***
	(.0397)	(.0381)	(.0496)	(.0522)	(.0160)	(.155)
ln(Pop '25)		.0437		.0842	.00868	(mv)
		(.0346)		(.0651)	(.00661)	
% Jewish '25		-.112**		-.112**	-2.242**	(mv)
		(.0479)		(.0560)	(1.131)	
% Protestant '25		.284***		.232***	.0978***	(mv)
		(.0474)		(.0785)	(.0326)	
% Blue collar '33		-.158***		-.167**	-.305**	(mv)
		(.0567)		(.0735)	(.132)	
Observations	1106	1105	274	274	274	274
Adjusted R2	.047	.129	.017	.066		

[$] First principal component obtained from: Pogrom 1920s, %DVFP votes 1924, %NSDAP votes 1928, ln(1 + Stürmer letters), indicator variables for Synagogue damaged or destroyed. For columns 1-4, standardized beta coefficients are reported. Standard errors in parentheses, clustered at the precinct level. [*] $p < .10$, [**] $p < .05$, [***] $p < .01$

[#] Poisson maximum likelihood estimation.

[##] Matching Estimation. Treatment variable is Pogrom 1349. Matching characteristics are the full set of control variables in column (5). The average treatment effect is reported, using robust nearest neighbor estimation with the 5 closest matches. 'mv' indicates match variable.