A Glimpse of Freedom: Allied Occupation and Political Resistance in East Germany

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Abstract

This paper exploits the idiosyncratic line of contact separating Allied and Soviet troops *within* East Germany at the end of WWII to study political resistance in a non-democracy. When Nazi Germany surrendered, 40% of what would become the authoritarian German Democratic Republic was initially under Allied control but was ceded to Soviet control less than two months later. Brief Allied exposure increased protests during the major 1953 uprising. We use novel data on the appointment of local mayors and a retrospective survey to argue that even a "glimpse of freedom" can foster civilian opposition to dictatorship.

1   Introduction

Countries experiencing declines in civil liberties and political rights have outnumbered those with improvements for more than a decade. Over 60% of the world population now lives in countries that are less than fully free (Freedom House, 2020). In many of these countries, overt political opposition carries a risk for people's freedom, integrity and lives. Canonical models of regime change predict that people's willingness to rebel increases as their expected gain from regime change becomes clearer or larger (Acemoglu and Robinson, 2005). In practice, however, people living in non-democracies often only have a vague notion of what would happen were the current regime to fall. One-party states and absolute monarchies, like China or Saudi Arabia, leave no formal alternative. In hybrid regimes, like Russia, Turkey or Venezuela, opposition parties and their leaders are often suppressed. Lack of exposure to alternatives to the status quo may thus play an important role in explaining (the lack of) costly political opposition in non-democracies.

In this paper, we show that even a short exposure to better governance and a more disciplined occupying force can increase subsequent resistance to autocratic rule in the early stages of nation-building. Our setting focuses on the consolidation of the German Democratic Republic (GDR), the nation that emerged from the Soviet-administered occupation zone in Germany after World War II. We examine an understudied aspect of the end of the war in Germany. At the time of the Nazi surrender, 40% of the pre-arranged Soviet occupation zone was occupied by troops from the western Allied Expeditionary Force led by the US and the UK. This Allied occupation was very short-lived and Soviet forces were in full control less than two months later.[1] Over the following years, the entire Soviet-controlled area would develop into a highly authoritarian and repressive regime: the GDR, also known as East Germany.

Our empirical analysis exploits the idiosyncratic nature of the *line of contact* separating Allied and Soviet forces at the end of the war *within* East Germany. We leverage historical sources to show that the line emerged through a series of haphazard military decisions made in the very final days of the war as the Allied and Soviet armies fought their way into Germany from opposite directions. As a result, part of the area assigned for Soviet occupation remained under Allied rule for around two months before the Soviet takeover, while the rest experienced Soviet rule throughout. We conduct careful historical and archival research to reconstruct the exact line of contact at the granular

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[1] We use the term "Allies" throughout the paper to refer to the Western Allies, formally the Allied Expeditionary Force, comprised mostly of military units from the United States and the United Kingdom. We use the term "Grand Alliance" to refer to the larger group of countries, including the USSR, that fought against the Axis powers (Germany, Italy and Japan) in WWII.

municipality level (*Gemeinde*). We then use a spatial regression discontinuity design (RDD) to study the effects of a fleeting exposure to Allied occupation on measures of political resistance to the budding dictatorship in East Germany.

Our main outcome of interest is the incidence of protests during the 1953 uprising in the GDR. This was the only major episode of political unrest to take place in the country until the events of 1989/90 that led to democratization and German reunification. The uprising would have arguably caused the demise of the communist dictatorship in East Germany, had it not been for Soviet military intervention (Grieder, 2012). We show that municipalities that were initially occupied by Allied forces were approximately 15 percentage points (pp) more likely to experience protests during the 1953 uprising. This is a large effect, corresponding to 68% of the sample mean.

We validate our findings with a standard battery of tests. First, we provide evidence of balance in pre-determined covariates at the line of contact. Second, we verify that our results hold up if we include border-segment fixed effects, which constrain the comparison to municipalities in direct vicinity, or if we add a rich set of controls. Third, our results are also robust to different functional forms for the running variable or different bandwidths, including the optimal bandwidth following Calonico et al. (2014). Fourth, our findings are likewise robust to changes in the composition of the sample, such as excluding different segments of the line of contact (i.e., land vs river), different states, or municipalities directly adjacent to the line (Barreca et al., 2011). Fifth, placebo estimates based on randomly-drawn lines or plausible alternative lines based on salient geographical features indicate that our results are unlikely to have arisen due to chance.

These findings are remarkable due to the short-lived nature of the treatment. The Allied occupation lasted three months at most and 75 days on average. Naturally, this brief period of occupation corresponds to a bundled treatment, making it difficult to fully adjudicate among competing explanations. However, by combining information from multiple sources – including several pieces of newly-collected data – we can shed light on some of the most plausible mechanisms, which we interpret through the lens of a stylized model of political agency.

To examine potential persistent effects of Allied exposure, we collected new data on more than 1,300 mayors and show that Allied-appointed mayors were swiftly replaced following the Soviet takeover. We corroborate this finding by fielding a retrospective survey among residents of the former GDR to shed light on the policies associated with the temporary Allied occupation. In line with the historical record, a comparison of responses across the line of contact shows that the Allied occupation is more positively perceived and is associated with better governance and higher public good provision.

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Focusing on the Allied-occupied area, we also observe that a majority of respondents report a deterioration in governance after the Allied withdrawal and an overall negative perception of the Soviet take-over.

We explore and find less conclusive evidence for additional mechanisms. Using data from the 1946 population census in the Soviet occupation zone, we rule out that differential migration and changes in the economic structure across the line of contact are key drivers of our observed effects. Similarly, differences in the exposure to the radio signal originating in the Allied sector (i.e. access to media from *outside* the GDR) do not drive our main results. We also find no persistent impacts on public good provision (as measured using the stock of housing) or on the intensity of political control (as measured by the presence of *Stasi* informants and arrests) during the GDR period. Finally, we use data on the 1946 elections in Berlin to show that the local population did not simply become attached to the initial occupying force (i.e. a "victor effect").

This paper contributes to several strands of the literature. First, we contribute to the growing empirical literature on the determinants of costly political opposition in non-democracies. A large body of work has studied the effects of access to free media or, more recently, social media (Kern and Hainmueller, 2009; Crabtree et al., 2018; Enikolopov et al., 2020; Gagliarducci et al., 2020). Other papers have focused on the impact of state repression (Bautista et al., 2020; Rozenas and Zhukov, 2019). A recent strand has also examined the role of social interactions, peer effects and habit formation in protest participation (Cantoni et al., 2019; Stegmann, 2019; Bursztyn et al., 2020). We add to this literature by showing that brief exposure to better governance and a disciplined occupying force has a lasting effect on costly resistance to dictatorship.[2]

Our results also speak to the literature on military-civilian interactions in conflict and post-conflict settings (Berman and Matanock, 2015). Previous work has shown that hearts-and-minds strategies are more effective than overwhelming firepower in winning over the local population (Berman et al., 2011; Kocher et al., 2011; Ferwerda and Miller, 2014; Fontana et al., 2017; Dell and Querubin, 2018). We complement this literature by showing that short-lived differences in the quality of military governance in the very early stages of post-conflict reconstruction can have a lasting effect on local political attitudes. In this regard, our findings also provide evidence on the importance of initial conditions for nation-building.[3]

Finally, we contribute to understanding the effects of the division of Europe among

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[2]Our findings are consistent with previous work on the lasting effects of short canvassing interventions on beliefs and political outcomes in established democracies (Broockman and Kalla, 2016; Pons, 2018).

[3]See e.g. Svolik (2013); Alesina et al. (2019); Bazzi et al. (2019).

the victors of World War II. Previous important work has studied the economic and political consequences of changes in the identity of the occupying force in Austria (Ochsner, 2017; Ochsner and Roesel, 2020), West Germany (Schumann, 2014) and Czechoslovakia (Grossmann et al., 2021).[4] Similar to these papers, our identification strategy relies on exploiting border discontinuities in a spatial RDD. Although these studies do not directly focus on political resistance to authoritarianism, they suggest that population flows could be an important part of the mechanism underlying our results. The episode that has attracted the most academic attention is arguably Germany's partition after World War II (Fuchs-Schündeln and Masella, 2016; Becker et al., 2020). While most work has relied on East-West comparisons between the (democratic) Federal Republic of Germany and the (autocratic) GDR (e.g., Alesina and Fuchs-Schündeln, 2007; Laudenbach et al., 2020), our empirical strategy provides a new perspective by using the line of contact as a source of variation *within* the GDR.[5]

The remainder of the paper is organized as follows. In section 2, we provide the historical background to situate our results. In section 3 we introduce the data; section 4 discusses the spatial regression discontinuity design and section 5 presents the main results. Section 6 provides a discussion of potential mechanisms and section 7 concludes.

2   Background

2.1   The End of World War II in Germany (Jan-May 1945)

On May 7 1945, Germany surrendered to the *Grand Alliance* led by the United States, the United Kingdom and the Soviet Union, putting an end to World War II (WWII) in Europe.[6] Preparations for the German surrender had begun months in advance, including discussions on the temporary division of the country's territory into separate occupation zones for each of the victors. The final arrangement was ratified at the

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[4]Ochsner (2017) exploits the line of contact in Austria to find that even brief contact with the Red Army led to a relative population decline in the long-run. Schumann (2014) exploits differences in resettlement policy between the French and American occupation zones to study the persistence of population shocks. Ochsner and Roesel (2020) exploit the Danube river separating US and Soviet forces to show that the out-migration of Nazis to the US occupation zone fostered right-wing party success in the receiving Austrian municipalities. Finally, Grossmann et al. (2021) compare areas occupied by the US and the USSR in a spatial RDD to show persistent impacts of anti-fascist Germans staying in post-war Czechoslovakia on modern-day Communist Party support.

[5]One exception is Eder and Halla (2019), who document the impact of the demarcation line on long-run population dynamics at the county-level. Our analysis, focusing on shorter term political outcomes, is conducted at the granular municipality level which is more suitable for an RDD.

[6]This section draws largely on Ziemke (1976); MacDonald (1993); Ambrose (2000); Beevor (2002); Toland (2003); Henke (2009); Jones (2015).

Yalta Conference in February 1945, but initially not made public. It allocated the eastern states of Brandenburg, Mecklenburg-Vorpommern, Saxony-Anhalt, Saxony and Thuringia to the Soviet occupation zone. The German capital, Berlin, was also divided into separate sectors for each victor, despite being located well within the Soviet zone.

Importantly, the decision was made to have the boundaries of the occupation zones only come into effect after the German surrender and to not allow them to interfere with ongoing military operations. As a result, the occupation zones provided little guidance on the final location of the Soviet Red Army and the Allied Expeditionary Force (AEF) when the war came to an end. On the western front, the Allies had been making progress through France and Belgium since the D-Day landing in June 1944. On the eastern front, the Red Army had been on the offensive since mid-1943. In the fall of 1944, rapid Allied advances suggested that the *line of contact* where Soviets and Allies would meet might be as far east as pre-war Poland, but the Soviet offensive later that year plausibly pushed it as far west as the river Rhine. When the Red Army reached the river Oder at the end of January 1945, only 80 km away from Berlin, it seemed certain that it would be able to capture the entire Soviet zone before linking with the Allies (Panel a in Figure 1).

Preparations for the capture of Berlin and bad weather would hold back the final Soviet offensive for over two months. Meanwhile, the Allies made rapid progress through western Germany, especially after capturing a bridge over the Rhine at Remagen (480 km from Berlin) on March 7. In early April, Allied troops entered the Soviet zone in western Thuringia (Panel b in Figure 1). On April 12, they reached the river Elbe near Magdeburg and the river Mulde, one of the Elbe's smaller tributaries, south of Dessau. Allied troops were roughly 100 km away from Berlin, deep inside the Soviet zone, and Allied commanders started making preparations for the final assault on the capital.

The decision whether to capture Berlin fell on Allied commander Dwight Eisenhower. Eisenhower had complete authority over Allied operations and prioritized military criteria over geo-political considerations. He decided that Berlin was excessively costly and on April 15 ordered his troops to halt the advance and allow the Soviets to capture the city.[7] Fearing the possibility of friendly fire as the Red Army approached, Eisenhower informed the Soviet High Command on April 21 that Allied forces would hold the north-south line formed by the rivers Elbe and Mulde all the way to the Czech border.

The Soviet attack on Berlin had begun on April 16 (Panel c in Figure 1). Over

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[7]Despite pressure from British Prime Minister Winston Churchill to "shake hands with the Russians as far to the east as possible" (Beevor, 2002, p.195), Eisenhower aimed to minimize casualties given the ongoing war against Japan in the Pacific. He was further dissuaded by the fact that any territorial gains would only be temporary. The Soviets' explicit interest in capturing Berlin, mostly driven by the capital's symbolic significance, also played a part.

the following days, Soviet troops encircled and fought their way through the city. At the same time the Red Army resumed its westward push towards the Allies. The first contact between Allied and Soviet troops took place at Torgau on April 25, as scattered Allied patrols raced to be the first to find the Red Army (Panel d in Figure 1).[8] Fearing a Soviet drive into Denmark, the Allies made a last-minute change to the initial plan by crossing the Elbe into the northern state of Mecklenburg-Vorpommern on May 1 (Panel e in Figure 1), where they would occupy positions all the way to the Baltic.[9] In the final days of the war, German soldiers and civilians made a westward dash in an attempt to avoid capture by the feared Red Army, but the Allies imposed tight controls on movement across the line.[10] By the time of the final German surrender on May 7, the gap between the two armies had been all but closed (Panel f in Figure 1).[11] At this time, almost 40% of the Soviet occupation zone was under Allied control (Ziemke, 1976).

2.2 American occupation of the Soviet zone (May-July 1945)

Following the German surrender, the local population remained uncertain about the duration of foreign occupation and the final identity of the occupying force. Details on the partition of Germany only emerged by early June when the Soviet Union pressured the Allies to vacate the designated Soviet zone.[12] Whether the Allies would comply was also unclear, with the British government secretly arguing against leaving before all agreements with the Soviet Union had been reached. Some rumors about an American retreat began spreading among civilians, but even the newly-appointed civilian authorities and local military commanders were very much left in the dark.

Ultimately, US President Harry Truman opted to abide by the Yalta agreement and

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[8]Those patrols only rushed forward to meet the Red Army, but the Allied forces otherwise remained at the stipulated line, about 25 km west of Torgau along the river Mulde.

[9]The Allies also moved slightly east of the Mulde in a small segment where the river bends west near the city of Chemnitz in the state of Saxony, apparently as a result of confusion among ground troops between two arms of the river, *Zwickauer Mulde* and *Freiberger Mulde*.

[10]At Lüneburg Heath, the British refused to accept the partial surrender of three German armies trying to escape the Russians in Mecklenburg. At the Elbe, where many bridges were destroyed and Allied troops tightly controlled crossings, the American commander agreed to allow German soldiers to cross, but not civilians. As the Russians approached and fighting intensified, many people drowned trying to cross the river on improvised rafts or by swimming.

[11]In Erzebirgskreis, near the Czech border, a small pocket remained accidentally unoccupied by either army until late June 1945 (Naimark, 1997). The area, uncoloured in the map, became later known as the *Free Republic of Schwarzenberg*. As it was initially neither Allied nor Soviet-occupied, we drop this section in the main analysis. In the appendix we show that results are robust to including it and assigning it to be Soviet-occupied, i.e. the identity of its first occupier (see Appendix Table A.1).

[12]A map of the occupation zones appeared on the front page of *The Times* on June 7, having been published by a Russian newspaper the day before. See Appendix Figure A.1 for excerpts of the cover.

informed the Soviet leadership on June 14 of his intention to withdraw from the Soviet zone in exchange for access to Berlin. Military commanders met on June 29 to finalize details and agreed that the Allied forces would sequentially retreat over a four-day period, with Soviet forces following closely behind. Once this process was complete, the Allies would be allowed into West Berlin. The redeployment took place between July 1 and 5, with little forewarning to the local population (Henke, 2009). For example, British forces in Schwerin announced on June 30 that the city would be handed over to Soviet control the following day. Less than two months after the end of the war, the Soviet Union was in full control of its designated occupation zone.

2.3 The 1953 Uprising

The Soviet Military Administration in Germany (SMAD, by its German acronym) was created in June 1945 to administer the Soviet occupation zone.[13] After four years of Soviet occupation, the German Democratic Republic (GDR) was born on October 1949. By then, the Soviet-backed Socialist Unity Party (SED) had fully consolidated power and the country was well on track to becoming a one-party state along the lines of the Soviet model.[14] Besides the absence of competitive elections after 1946, the country increasingly resembled the Soviet police state following the creation of the secret police, known as *Stasi*, in 1950 (Lichter et al., 2020). Reparations to the Soviet Union, including the dismantling of factories and infrastructure, crippled the economy (Becker et al., 2020). Hundreds of thousands of people left for West Germany each year.

In 1952, the SED made explicit its aim to engage in the "accelerated construction of socialism" (Grieder, 2012; Steiner, 2013). Following this announcement, the collectivization of agriculture and the development of heavy industries intensified, as well as the fight against religious organizations. On May 14, 1953, the SED increased work norms (i.e. expected output) by more than ten percent without extra compensation (Kopstein, 1996). Under Soviet pressure, it reversed course on June 11, while at the same time publicly admitting to excesses and mistakes in the official party newspaper *Neues Deutschland*. This admission of weakness made the population believe "that an opportunity existed to affect political change" (Bruce, 2003, p.172). Combined with the

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[13]Matters affecting the whole of Germany were decided by the Allied Control Council, with participation of the four victorious powers: US, UK, USSR and France. Berlin was jointly ruled by a *Kommandantura* including representatives of all powers.

[14]Other parties were purged of opposition leaders and pressured to join a national coalition, known as the National Front (NF). The NF would present a single list of SED-vetted candidates in all pseudo-elections to take place in the GDR until 1990.

fact that the tightened work norms were not modified at first, this triggered a series of protests and strikes throughout the country between June 16-21.

Protests began in East Berlin and quickly spread throughout the country. Protesters attacked SED buildings and freed political prisoners, while demanding the resignation of SED chairman and *de facto* dictator Walter Ulbricht. Industrial workers from hundreds of factories walked out and joined strikes. Estimates of the number of participants in these events range from 0.5 to 1.5 million people, most of them from working class backgrounds (Stibbe, 2006; Grieder, 2012; Steiner, 2013). One common thread linked these different events: "the demonstrators' demands revealed a desire for change in the political system. In the vast majority of disturbances, the demonstrators demanded free elections" (Bruce, 2003, p.182).

After the first day, the government declared a state of emergency and the Soviet military intervened to restore order. According to Grieder (2012), "the fledgling GDR would have collapsed had it not been for the intervention of the Soviet army" (p.40). Bruce (2003) adds that "the revolution in Brandenburg was so extensive that the police candidly admitted thet they thought that the government had fallen" (p.186). Importantly, all other parties had been co-opted by the SED and their leaders driven into exile or underground resistance "leaving nobody of any standing who could negotiate with the SED on behalf of the rebels" (Stibbe, 2006, p.49). More than 6,000 people were arrested and about a dozen were killed during the uprising. Repression intensified in the following months. Arrests doubled and alleged anti-communist saboteurs were seized by Soviet forces and shipped to Siberia. A series of purges within the SED further tightened Ulbricht's hold on power. As a result, the 1953 uprising was the only major episode of political unrest to take place in the GDR until the events that led to the end of the dictatorship and German reunification in 1989/90.

3 Data and treatment assignment

3.1 Data sources

Baseline characteristics. To test for the idiosyncratic nature of the line of contact, we consolidate data from existing studies. We rely on Falter and Hänisch (1990) for measures of pre-war population and electoral outcomes. These authors collected socioeconomic data at the county and municipality level for the German Reich between 1920-1933. The underlying data is drawn primarily from the statistical office of the Weimar Republic (*Statistisches Reichsamt*) and includes both election reports and cen-

sus publications. We use data on population size, labor force participation, industry structure, and religious composition from the censuses of 1925 and 1933. We also use electoral data from the last federal elections in 1933.[15]

We complement the pre-war socioeconomic data with WWII measures. First, we use rich information on Allied aerial bombings collected by the Theatre History of Operations Reports (THOR). The dataset is constructed from digitized Allied mission reports, providing granular data on the location and timing of aerial bombings between 1939-1945. We aggregate the data and compute whether aerial bombings occurred in proximity to a given municipality. Second, we examine whether synagogues were destroyed in a given municipality during the 1938 November Pogroms. Third, we use the location of all known concentration camps and compute their proximity to each municipality.[16] Finally, we calculate for each municipality the geodetic distance to a range of relevant locations: Berlin, the inner German border, mineral reserves and the closest coast.[17]

1953 Protest data. The data on the 1953 uprising comes from Crabtree et al. (2018), which is based on the historical compilation by Kowalczuk (2003). The data contains indicators for the occurrence of protests between June 16-21 in all municipalities with a population above 1,000. Out of 2,585 municipalities considered, 528 experienced a protest. While at a granular level, a shortcoming of the data is that it does not include the size, frequency or exact day of the protest. Our analysis is thus restricted to treating protests as a binary variable and focuses on protest incidence. We also use the Crabtree et al. (2018) measure of signal strength by the Radio in the American Sector (RIAS) for a robustness check.

We describe other data sources in the relevant sections below. Appendix Table A.2 provides an overview of all the data used in the paper, including sources and coverage.

3.2 Reconstructing the line of contact

To identify the line separating areas occupied by the western Allied Expeditionary Force and the Soviet Red Army, we consulted multiple historical sources. Based on these sources, we reconstructed the progress made by each army at the most fine-grained level possible (often, but not always, at the city-day level). Despite the abundant literature on the end of WWII in Europe, to the best of our knowledge this information had not been previously harmonized or digitized. A detailed documentation of the establishment of

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[15]A detailed description of the data is provided in Hänisch (1989).

[16]The list of concentration camps stems from the Jewish Virtual Library, while that of destroyed synagogues from the Synagogue Memorial "Beit Ashkenaz".

[17]Data on the global distribution of mineral reserves stems from the United States Geological Survey.

the *line of contact* is presented in Appendix B with a full list of sources. One particularly comprehensive source was MacDonald (1993), which contains detailed accounts of Allied military advances and maps tracking the front line at various locations and points in time. Also useful were the daily progress reports produced by the Supreme Headquarters Allied Expeditionary Force (SHAEF).

A large part of the line of contact is defined by the rivers Elbe and Mulde. This includes the entire segment through Saxony-Anhalt, as well as part of Saxony. For areas that were not determined by this natural geographic boundary (38% of the line), we consulted historical accounts. These include the segment through Mecklenburg-Vorpommern that originated in the Allied dash to the Baltic and parts of Saxony where Allied officers got confused among the many small rivers and slightly deviated from Eisenhower's plan.[18] Whenever historical accounts did not document the precise course of the line at the municipality level, we consulted municipality-level sources, such as local archives or municipalities' websites containing information on the identity of the initial occupying army. Ultimately, we were able to establish the location of the line at the finest level of 1946 municipalities ($N = 12,090$). Figure 2, Panel a shows the treatment assignment for modern-day municipalities ($N = 2,664$).

Figure 2, Panel b shows the spatial distribution of protests in 1953 across municipalities with population above 1,000. As the figure shows, the data has robust coverage of protests throughout East Germany. More importantly, the figure displays substantial variation in the incidence of protests across the country. We observe protests in the less populated northern part as well as in more densely populated areas in the south. Furthermore, the raw data provides some preliminary evidence that protests are more likely to be concentrated on the Allied side. The binary nature of the protest measure, however, complicates a conclusive visual inspection. We thus resort to testing for the discontinuity more formally using a standard spatial regression discontinuity design.

4   Empirical strategy

The line of contact between Allied and Soviet forces at the end of WWII provides idiosyncratic variation in the areas exposed to Allied and Soviet occupation. We exploit this variation in the identity of the initial occupying force in a spatial regression discontinuity design (RDD). As discussed in section 2, the variation delineating the exact frontier between the two armies depended on largely idiosyncratic factors that affected

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[18]As part of our robustness checks, we verify that the results hold when we exclude (i) segments of the line, (ii) entire states, or (iii) municipalities in the immediate vicinity of the line of contact.

the particular direction and speed at which both armies progressed. We verify below that the final line is orthogonal to pre-determined local economic and political conditions.

To estimate the effect of exposure to the Allied (relative to Soviet) occupation on measures of subsequent political resistance, we implement a cross-sectional spatial RDD (Dell, 2010; Dell and Querubin, 2018). We estimate the following regression,

$$y_i = \alpha + \beta \times Allied_i + f(\mathbf{g}_i) + \gamma' x_i + \varepsilon_i \tag{1}$$

where y_i is an outcome of municipality i. $Allied_i$ is a dummy that takes the value 1 if the municipality was initially occupied by the Allied forces (to be later ceded to the Soviets) and 0 if the municipality was occupied by the Soviet forces throughout.

Given the geographic pattern of the foreign occupation of Germany, a comparison between all areas occupied by the Allied vs. Soviet forces is likely to be confounded by East-West baseline differences, such as distance to the inner German border, proximity to Berlin or other underlying socioeconomic differences (Becker et al., 2020). To obtain a valid counterfactual, the regression discontinuity design instead compares only areas in the immediate vicinity around the line of contact. Intuitively, we leverage the fact that geographic and socioeconomic characteristics are smooth (and thus comparable) around the cut-off, whereas the line of contact provides a discontinuous change in the identity of the initial occupying force. Comparing an area that happened to be *just within* the reach of the Allies to an area that fell *just short* will thus provide the causal effect of Allied occupation around the line of contact.

To implement the spatial RDD, we first restrict the sample to a narrow 50 km corridor along the line of contact.[19] We then follow standard practice by smoothly controlling for the geographical gradient using the function $f(\mathbf{g}_i)$. In the most basic specification, $f(\mathbf{g}_i)$ controls linearly for the distance to the line of contact, while our preferred specification allows the slope to vary flexibly on either side of the cutoff as is customary. We also verify that our results are robust to using higher order polynomials or a non-parametric estimator for $f(\mathbf{g}_i)$ following Calonico et al. (2014). In the full specification, the vector $\mathbf{x}_i$ includes a more comprehensive set of covariates to control for the "smoothness" of geography: linear controls for latitude and longitude, border segment fixed effects, as well as distance to Berlin, the nearest coast and the inner border. $\mathbf{x}_i$ also includes additional controls for pre-determined socioeconomic characteristics. The full list of controls is described in the following subsection where we test for the smoothness of

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[19]We verify below that our results are robust to different bandwidths, including the optimal data-driven bandwidth determined using the selection procedure developed by Calonico et al. (2014).

the baseline covariates. We cluster the standard errors at the county level. While the assignment to treatment is at the (lower) municipality level, our level of clustering allows us to account for idiosyncratic correlation in the error term among municipalities located in the same county. To more conservatively account for spatial autocorrelation, we also present Heteroskedastic and Autocorrelation Consistent (HAC) standard errors following Conley (1999).

4.1 Balance around the line of contact

Smoothness of covariates. The main identifying assumption of the spatial RDD is that the "treatment assignment" - the initial occupation by the Allied (as opposed to Soviet) forces - is as good as random around the line of contact (Imbens and Lemieux, 2008). In this section, we test for balance of the treatment assignment on either side of the line of contact. We conduct the analysis at the municipality level whenever the data permits. This is the finest level of granularity for which data is available. Most pre-war socioeconomic indicators, however, are only available for larger municipalities with a population above 2,000 (Hänisch, 1989).

Table 1 reports descriptive statistics for our dataset. In Panel A, the units of analysis are pre-war municipalities with a population above 2,000 as published by the statistical office of the Weimar Republic. In Panel B, the units of analysis are municipalities of 1946, without any size restriction. In column 1, we produce the means for each of the baseline covariates of interest for the full sample of East Germany. Column 2 reports the difference in means between Allied- and Soviet-occupied areas. We observe that the areas occupied by the Allies are significantly different from those occupied by the Soviets, consistent with the presence of an East-West gradient in socio-economic characteristics (Becker et al., 2020). For instance, Allied-occupied areas had a higher share of industrial workers in 1933, a higher KPD vote share in the 1933 elections and were also more likely to have experienced aerial bombings during WWII. Hence, a "naive" comparison between Allied- and Soviet-occupied areas in East Germany is likely to yield selection bias. In column 3, we thus provide a narrower comparison by comparing the characteristics of Allied- vs. Soviet-occupied areas in a narrow 50 km corridor along the line of contact. We also add the flexible forcing variable which controls for the linear distance to the line and allows the gradient to differ on either side of the cut-off, as well as the segment fixed effects (each of these segments is on average 45 km in length). As column 3 shows, municipalities close around the line of contact are much more comparable, with no major discontinuities in baseline characteristics. Put differently, the covariates are smoothly

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distributed around the cut-off, conditional on the control function. This assures us of the idiosyncratic nature of the line.[20]

5 Main results

5.1 First stage: Exposure to Allied forces

We first quantify the difference in the duration of exposure to the Allied forces along the line of contact. We make use of detailed data on the arrival dates for the Soviet Red Army and the Allied Expeditionary Force that we collected for larger cities in East Germany.[21] On the Allied side, there is little variation in exposure to Allied forces when comparing, for example, areas 50 km vs. 2 km away from the line of contact.[22] When comparing areas *just* on either side of the line of contact, we observe a difference in exposure of about 70 days.

To quantify the magnitude precisely, Table 2 uses the RDD described in section 4. The RDD confirms that there is a discontinuous jump in exposure to the Allies at the line of contact of around 73 days. The magnitude of the estimate varies little if we simply compare means on both sides of the line of contact (column 1) or if we use a linear forcing variable that controls for the distance to the line (column 2). This magnitude remains comparable once we allow for a more flexible and richer set of forcing variables. In column 3, we flexibly fit the forcing variable on each side of the cut-off; in column 4, we divide the line into ten segments and use border segment fixed effects to further constrain the comparison to a narrow geographic area. Column 5 includes the full set of fine-grained baseline controls shown in Panel B of Table 1, plus latitude and longitude. Not surprisingly, given the balance of covariates, the results remain largely unchanged. Column 6 expands the polynomial for the running variable to a quadratic, while column 7 uses instead a non-parametric local polynomial with bias-corrected inference following Calonico et al. (2014). The coefficient remains stable across specifications. We show standard errors clustered at the county (*Kreis*) level in parentheses and Conley standard

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[20]It is also common in RDD settings to test for sorting around the cut-off. In the spatial context, municipalities naturally cannot strategically sort. But bunching in the density of municipalities may still emerge if the final line of contact was strategically drawn to include or exclude certain locations. We can assess the extent of such bunching by inspecting the distribution of municipalities around the line of contact. Appendix Figure A.2 tests the smoothness in the density of municipalities using the local-polynomial estimation proposed by Cattaneo et al. (2019). We find no evidence for a discontinuity.

[21]Length of exposure is approximated using the date of arrival to the largest city in the county (*Kreis*) in which the municipality is located.

[22]Appendix Figure A.3 shows raw means for 2 km bins in the 50 km window around the line of contact.

errors that account for spatial autocorrelation in brackets.[23] The estimates are quite precise either way. They show that Allied-occupied municipalities were ruled for little over two months by Allied forces before the Soviet troops took over in early July 1945.

5.2 Costly political opposition: the 1953 Uprising

We now turn our attention to our main outcome of interest - the incidence of protests during the 1953 uprising. As mentioned in section 2, this was the only major nation-wide episode of political unrest in the GDR until the peaceful revolution of 1989. We investigate the relationship between Allied occupation in 1945 and the geography of this costly act of political opposition by relating protest patterns to the line of contact.

Figure 3 shows the raw probability of protests occurring in a municipality as a function of the distance to the line of contact in granular 2 km bins. The sample comprises all municipalities around the 50 km window with a population of at least 1,000, due to data availability.[24] As a visual aid, we overlay fitted polynomials of different degrees. The polynomials indicate a sharp drop in protest incidence when we cross the line of contact from the Allied to the Soviet side.

Table 3 reports the corresponding RDD regressions. In column 1, we report the average difference in means in protest incidence on the Allied vs. Soviet side of the line of contact for municipalities located in a 50 km window around the line, without any controls. On average, the probability of a protest occurring is 8 percentage points (pp) higher on the Allied side than on the Soviet side. In column 2, we introduce the RDD design by adding the linear distance to the line as a forcing variable. With the forcing function $f(\mathbf{g}_i)$ governing the assignment to Allied or Soviet occupation, the resulting estimate reflects the causal difference at the discontinuity. The RDD estimate shows a 16.3 pp increase in protest incidence on the Allied side.

In the remainder of the columns, we increasingly impose more flexible RDD specifications, in line with Figure 3. In column 3, we allow the slope of the forcing variable to vary on either side of the cut-off; in column 4, we restrict the comparison to municipalities in close proximity by including border segment fixed effects. In column 5 we add the set of fine-grained baseline controls. As expected, given the as-good-as-random assignment of the treatment conditional on distance to the line, the inclusion of these measures does not substantially alter the estimates. Column 6 allows for a more flex-

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[23]Conley standard errors cannot be calculated for the local polynomial estimation in column 7 due to limitations in the Stata package.

[24]The full sample corresponds to around 22% of all municipalities in East Germany and covers about 77% of the population. Importantly, the distribution does not vary along the line of contact.

ible functional form of the forcing variable by including a quadratic function. Finally, column 7 reports estimates from the local polynomial RD procedure (Calonico et al., 2014). The RD coefficient is stable across these more flexible specifications. Overall, the results suggest that Allied exposure caused an increase in the incidence of protests during the 1953 uprising of between 14 and 18 pp. Compared to the mean of the dependent variable (22%), this reflects a sizable increase. As before, we provide standard errors clustered by county in parentheses and Conley standard errors that account for spatial autocorrelation in brackets. Estimates are highly precise in all cases.

5.3   Placebo lines, rivers and robustness checks

We provide a series of robustness checks to validate our research design.

Placebo lines.   First, to ensure that our estimates are unlikely to have arisen by chance, we conduct a randomization inference exercise that compares the actual estimated effect against the distribution of placebo effects from 10,000 arbitrary divisions of East Germany. For this purpose, we draw a random set of straight lines through East Germany and assign either side of the line to be Allied- or Soviet-occupied. Such treatment assignment mimics the data generating process that gave rise to the actual line of contact and introduces the same type of spatial correlation. This provides a more conservative randomization inference than the conventional Fisher (1935)–type of randomization assuming an i.i.d. assignment across units. To further match the share of municipalities under Allied and Soviet occupation based on the *actual* line of contact, we restrict the analysis to counterfactual assignments that leave no more than 60% of municipalities on either side of the line.[25] This also ensures that the estimates are not driven by implausible divisions that only assign a small fraction of municipalities to Allied or Soviet occupation. Appendix Figure A.4 displays four illustrative placebo divisions of East Germany.

For each placebo line, we recalculate the distance to the fictitious line of contact and restrict the sample to a 50 km bandwidth, as in our main analysis. We then estimate the placebo Allied occupation effect using the full specification. This is the same specification used for the actual division in Table 3, column 5. Figure 4 plots the distribution of placebo effects, which is predictably centered around zero. Reassuringly, we find that our estimated effect for the actual Allied occupation is highly unlikely to

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[25]The actual line of contact results in 59.2% of municipalities in the protest data under Allied occupation. The results, however, are similar when we relax the distributional assumption of the placebo samples; when imposing that no more than 75 or 90% of observations are assigned to either side, the *p*-values are 0.026 and 0.041, respectively.

have arisen by chance ($p = 0.024$), which enhances the credibility of our main result.

River placebos. A large part of the line of contact is delineated by the rivers Elbe and Mulde, which were used by the Allies as salient geographical features to avoid friendly fire from the approaching Red Army. This may raise the concern that the differential protest effect we observe is in fact a "river effect" and not the result of the fleeting exposure to Allied occupation. Travel costs, for example, could change discontinuously around rivers, thus potentially confounding our results. We conduct several robustness checks to ensure that our results are not driven by rivers. First, Panel A in Table 4 shows that our main results are robust when breaking down the sample by whether the line of contact is defined by land or river boundaries. While the disaggregate estimates are invariably noisier relative to the full sample (reported for convenience in columns 1-2) due to the smaller sample sizes, the point estimates are stable across the land and river sub-samples (columns 3-6). Indeed, we cannot statistically reject that the point estimates are the same for these sub-samples.

Second, we go a step further by replicating the RDD analysis for *placebo* lines of contact based on other East German rivers. We identified three plausible rivers for this analysis, shown in Appendix Figure A.5. In the first scenario, we assume that the Soviets progressed faster than they actually did, pushing the line of contact west to the Saale river. In the second and third scenarios, we assume that the Allies made more headway than they actually did, pushing the line of contact east until either the south-eastern portion of the Elbe or a combination of the Spree and Havel rivers.[26] Similar to the actual line of contact, the resulting placebo lines roughly run on a north-south direction. In line with the actual assignment, we define municipalities west of the placebo lines to be Allied-occupied. As before, we restrict the sample to municipalities 50 kilometers around each line. Panel B of Table 4 reports the results from these placebo analyses. We find no difference in protest incidence along any of the placebo river lines. These placebo results are both statistically insignificant and economically small in magnitude, further suggesting the absence of confounding "river effects."

Additional robustness checks. Finally, we conduct a range of further robustness checks. Our results are unaffected if we individually drop any of the ten border segments (Appendix Figure A.6); similarly, the results hold when we exclude individual states (Appendix Figure A.7). Our results also hold up to a class of standard RDD robustness checks, such as the use of alternative bandwidths (Appendix Figure A.8), including the optimal bandwidth following Calonico et al. (2014), or the exclusion of observations in

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[26]The actual line of contact departs from the Elbe at Dessau, shifting south along the Mulde, while counterfactual line 2 assumes that the line followed the Elbe in its southeast trajectory.

the immediate vicinity to the cut-off (i.e. *donut RDD*, Appendix Figure A.9). The latter addresses potential concerns about measurement error in the exact location of the line or small spill-overs across the line (i.e. Allied bridgeheads across the Elbe before Eisenhower's decision to halt the advance).

6   Discussion

The fact that fleeting differences in initial conditions can shape costly political behavior in a newly emerging state is striking. In the previous section, we showed that roughly 70 days of Allied occupation caused an increase in protests against the budding dictatorship propped by the Soviet Union in East Germany. Our reduced-form estimates arguably correspond to a bundle of different "treatments" that distinguish municipalities on opposite sides of the line of contact. While the bundled nature of the experience of Allied occupation makes it difficult to fully disentangle the mechanisms, we now explore several potential channels that may be driving the protest results and provide historical and statistical evidence on their importance.

To guide the interpretation of the results, we introduce a simple conceptual framework.[27] Consider an agent with characteristics $\mathbf{x}$ who faces a choice over two political regimes. For concreteness, let $i = s$ denote the Soviet regime, while $i = a$ denotes the Allied regime. Furthermore, let subscript $t = 0$ denote the initial occupation, and $t = 1$ the final occupation. On the Allied side of the line of contact, we thus have a_0 and s_1, while Soviet-occupied areas experience no change in the occupier's identity (i.e. s_0 and s_1). Agents with characteristics $\mathbf{x}$ derive utility $U(i|x)$ from the governance provided by regime i. An agent will thus only support the Soviet regime if the benefits from doing so exceed the benefits of the Allied regime, i.e. $U(s_1|\mathbf{x}) \geq U(a_1|\mathbf{x})$.

Our main results, which robustly document a greater protest incidence on the Allied side of the line of contact, suggest that *past* exposure to Allied rule reduces *current* support for the Soviet regime:

$$U(s_1|\mathbf{x}, a_0) < U(s_1|\mathbf{x}, s_0) \tag{2}$$

where $U(s_1|\mathbf{x}, a_0)$ denotes the utility derived by an agent with characteristics $\mathbf{x}$ from Soviet governance, conditional on having been governed by the Allies in the past.

In theory, there are multiple mechanisms through which the inequality in (2) may hold. The brief exposure to the Allies could have, for example, induced the local popu-

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[27]This simple model falls under the general class of models of political agency (Ashworth, 2012).

lation to revise downwards the utility derived from Soviet occupation, perhaps because exposure to better governance allowed for more accurate beliefs about the counterfactual. In this regard, the historical record suggests the presence of uncertainty among the local population about what the occupation would entail: "The Americans are coming!... excitement fluctuating between fear and joy" (Gebhardt, 2017, p.32). Alternatively, fleeting exposure to Allied rule might have induced a more behavioral response (Alesina and Passarelli, 2019). For instance, exposure to better governance under the Allies could have modified the reference point used to evaluate Soviet rule or triggered a "near miss" effect (Kahneman and Tversky, 1979; Kahneman and Miller, 1986).

We use this framework to characterize several potential mechanisms. First, we examine if there were any tangible short-run differences in the occupation experience across the line of contact. Second, we consider possible changes in the characteristics of the population around the line of contact resulting from differential migration. Third, we examine whether there were any persistent differences in policies across the line of contact during the GDR period. Finally, we consider a possible "victor effect" by which the local population rewarded whichever incoming army arrived first to their locality.

6.1 Short-Run Differences in Governance

6.1.1 Appointment of Mayors

Occupying forces on both sides appointed municipal mayors shortly after their arrival as a way of promoting a swift return to local self-government. While the SMAD made appointments mostly based on partisanship (Naimark, 1997), the Allied administration may have used selection criteria conducive to higher-quality appointments. If these initial appointments remained in office beyond the Soviet take-over, they could have had long-lasting consequences (Martinez-Bravo et al., 2017).

To investigate differences in the appointment of these local officials, we hand-collected data on almost 1,300 mayors of 173 cities for the period 1934-1955. For this purpose, we consulted the contemporary websites and the historical registers of these cities, as well as biographical encyclopedias (Müller-Enbergs et al., 2010). Whenever data was unavailable from public sources, we contacted the local archive or press office of the city to collect the information. For each mayor, we gathered data on term dates, party affiliation and the authority that made the appointment. Our sample covers 81% of cities with current population above 10,000 inhabitants, with no evidence of selective non-response between Allied- and Soviet-occupied areas ($p=0.12$).

Consistent with the historical narrative, our data shows stark differences in the par-

tisan affiliation of initial mayoral appointments across the line of contact. On the Soviet side, 53% of the appointed mayors were members of the German Communist Party (KPD) and a further 28% belonged to the Social Democratic Party (SPD). Only 8% of Soviet-appointed mayors had no party affiliation. On the Allied side, only 12% of appointed mayors belonged to the KPD, 32% came from the SPD and 32% had no party affiliation.[28] The Allies mostly appointed previous office-holders from the Weimar Republic, who espoused liberal views and had been politically persecuted during the Nazi regime (Schneider, 1989; Welsh, 2010). These differences in the characteristics of mayors constitute preliminary evidence of changes in governance across the line of contact.

For the most part, Allied-appointed mayors did not remain in office after the Soviet take-over, with 82% removed before the new year.[29] As further evidence of the connection between these dismissals and the Soviet take-over, Panel a in Figure 5 shows the distribution of monthly mayoral appointments in 1945 on both sides of the line of contact. The distribution is bimodal on the Allied side, peaking both in April (when the Allies arrive) and in July (when the Soviets take over). In contrast, the Soviet side has a unimodal distribution peaking in May when the Nazis surrender. Importantly, the new mayors appointed by the Soviets in the Allied area look comparable in their party affiliation to the initial appointments on the Soviet side: 67% of the replacement mayors were from the KPD, and a further 20% from the SPD. This suggests that little remained of the personnel decisions made by the Allies after their withdrawal.

The longitudinal nature of the data allows us to study broader differences in patterns of mayoral turnover across Allied- and Soviet-occupied cities over the two decades between 1934-1953. By looking at the period 1934-1944, we can provide further evidence of balance in pre-determined covariates before 1945. In addition, the data for the period 1946-1953 allows us to examine potential differences in appointments across the line of contact in the lead-up to the 1953 uprising.[30] Panel b in Figure 5 shows results from a panel regression using *excess turnover* as the dependent variable, defined as having more than one mayoral appointment on the same year.[31] The results show that cities

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[28]The Allies appointed a mayor in 85% of occupied cities, but this does not predict protest incidence in 1953 ($p = 0.807$).

[29]Appendix Figure A.10 shows the final year in office for Allied-appointed mayors, disaggregated by party affiliation. Only 40% of mayors belonging to the left-wing parties (KPD and SPD) were dismissed in 1945, while 95% of mayors with other affiliations and non-partisans were dismissed on this year.

[30]Unfortunately, the number of cities for which we have information on mayors is too small to credibly implement a regression discontinuity design. However, the longitudinal nature of the data allows us to estimate panel regressions in which we include city fixed effects and year fixed effects to account for persistent cross-sectional differences and common temporal shocks.

[31]Excess turnover has been shown to reflect political interference in other settings (Iyer and Mani, 2012; Akhtari et al., 2020). Results are comparable when using total yearly appointments per city.

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on the Allied side exhibit a 17 percentage point (pp) relative increase in the probability of excess turnover in 1945, which is the only year with an economically and statistically significant effect. This suggests that the pattern documented in Panel a is capturing circumstances unique to the change in occupying force in 1945 and does not reflect deeper underlying differences in mayoral turnover across the line of contact.

6.1.2   Retrospective Survey on Occupation Experience

The previous results confirm that Allied occupation entailed differences in governance (as embodied in local leaders) relative to Soviet occupation across the line of contact. However, data limitations prevent us from directly measuring differences in the *quality* of governance. If Allied occupation exposed the local population to better governance, the exposure – even if fleeting – could have fostered opposition to Soviet rule.

To further explore differences in the quality of governance, we collected retrospective data by fielding a survey in early 2020 using a professional survey company. We targeted individuals who either have first- or second-hand experience from the end of WWII by sampling respondents aged 60 or above in East Germany. Overall, we were able to collect responses from 472 individuals.[32] Details of the data collection and measurement issues are discussed in Appendix C. While the survey data allows us to complement the municipality- and city-level analysis with individual data, long-term retrospective surveys come with limitations, the main ones being recall bias and small sample size due to attrition. We thus have to rely mostly on second-hand accounts from children with parents residing in East Germany in May 1945, and are not able to conduct an RDD. However, to enhance comparability and mimic an RDD, we restrict the sample to respondents in a 100km window around the line of contact.[33]

The results are summarized in Figure 6. Panel a reports the mean difference in outcomes between the areas initially occupied by Allied and Soviet forces. Respondents from Allied areas report systematically better perceptions of the occupation experience. In particular, respondents recall higher public good provision by the Allies (food and medicine), though there is no significant difference in the mediation of conflicts. The Allies are also recalled as significantly less likely to engage in misconduct.[34]

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[32]See Appendix Figure A.11 for imposed restrictions leading to the final survey sample. Appendix Table A.3 compares the survey sample with the East German population with ages 60+. Our sample is positively selected on education and includes slightly more men than women, but it reproduces quite accurately the distribution of the population across states.

[33]The results hold when we use the full sample and are robust to the inclusion of individual-level controls for first/second-hand account, age, gender and education (Appendix Table A.4).

[34]Misbehavior by Soviet troops in Germany has been documented extensively, particularly sexual

While the Allied-occupied areas benefited from initial exposure to better governance, these benefits were short-lived. In Panel b of Figure 6 we restrict the sample to respondents in the Allied area and examine their responses to questions about changes in the quality of governance following the Allied withdrawal. We find that the Soviet takeover of the Allied area is accompanied by a large downward revision of the occupation experience. The vast majority of respondents (69%) perceive the switch from Allied to Soviet control as negative (12% perceived it as positive, 19% as neutral). When asked whether the arrival of the new occupier led to changes in public good provision, we find that the majority of respondents indicate that the new occupying army distributed less food and medicine and 81% report an increase in misbehavior by the occupying force.

These reported changes in the quality of governance are in line with the historical record: "Unlike the... American military government, the [Soviet] kommandanturas often had no specially trained staff and Soviet officers were assigned to regions and jobs about which they had little or no knowledge. There was no evidence of handbooks, and Russian maps tended to be cutouts of outdated German originals" (Naimark, 1997, p.13). Moreover, the survey responses and the historical accounts coincide in awarding a prominent role to misconduct by Soviet forces after the Allied withdrawal: "After the arrival of the Russians... 'Rapes, assaults, murders, one after the other' " (Naimark, 1997, p.85).[35]

6.2   Selective migration

Differences in the characteristics of the civilian population driven by selective migration across the line of contact could also help explain our findings (Ochsner, 2017; Eder and Halla, 2019; Ochsner and Roesel, 2020; Grossmann et al., 2021). Table 1 showed that

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violence against women (Naimark, 1997; Beevor, 2002; Gebhardt, 2017). The German army also engaged in sexual violence and other atrocities during its occupation of the Soviet Union (Wood, 2006; Henry, 2011). The effect of exposure to misbehavior on the propensity to protest is theoretically ambiguous. More abuse may lead to more animosity against the perpetrator, but it could also lead to fear of reprisals. Previous work shows that civilians exposed to abuse under dictatorship engage in stronger opposition when a window of opportunity arises (Bautista et al., 2020; Rozenas and Zhukov, 2019).

[35]While our survey documents lower initial misbehavior in the Allied areas and an increase in misbehavior after the Soviet take-over, it is unclear whether *total* exposure differed across the line of contact. It is plausible that misbehavior was worst in the first months of the occupation, when oversight over soldiers was weaker, in which case the total exposure to misbehavior would be lower on the Allied side. But it could well be that the Soviet army acted more harshly in the area temporarily occupied by the Allies (see Dehdari and Gehring, 2019, for the case of Alsace-Lorraine), in which case the net effect is ambiguous. The historical record does suggest that "even in those areas initially occupied by the American and British troops... rape became a severe problem for the German population." (Naimark, 1997, p.84). Given data limitations, we are unable to empirically distinguish between these two cases.

the two sides of the line were highly comparable in their demographic, geographic and political characteristics in the 1920s and 30s, as well as in the impact of the Nazi regime and WWII. However, differential migration to the Allied-occupied area in the immediate aftermath of the war may have led to a disproportionate concentration of opponents to the Soviet regime on that side of the line. In terms of our model, this explanation corresponds to a case in which people with more positive priors over the Allied regime's quality self-selected into the Allied side (i.e. $U(a_1|\mathbf{x}_a) > U(a_1|\mathbf{x}_s)$).

Years of exposure to Nazi propaganda and rumors of atrocities committed by the approaching Red Army generated a strong preference for Allied occupation as the war came to an end in Germany (Naimark, 1997). Beevor (2002) claims that in Berlin "optimists were learning English and pessimists learning Russian" (p.190). Hence, it is certainly plausible that the Allied-occupied area within East Germany saw a substantial inflow of potential opponents of the Soviet regime. These flows had two possible sources. First, a large wave of migrants that fled westward during the Soviet invasion of Germany in the final months of the war, mostly from the eastern provinces of Silesia, Pomerania and Prussia. Second, more selective cases of migration to the Allied sector during the initial occupation after the end of the war.[36]

In this context, a migration-based explanation faces several challenges. Migration from the eastern provinces began during the Soviet winter offensive in late 1944 and peaked in early 1945 (Beevor, 2002). At the time, the Allies were hundreds of kilometers away, the division of Germany into occupation zones remained confidential and the location of the line of contact was highly uncertain. Hence, war-induced migration across the line of contact *within* East Germany could only be quantitatively meaningful in the final days of the war when the Allies were awaiting the Soviets. At that time, however, transportation was completely disrupted and Allied troops restricted civilian crossings (MacDonald, 1993). More importantly, between the end of the war and the construction of the Berlin Wall in 1961, anyone wanting to escape from Soviet rule could easily do so by crossing into West Berlin (Becker et al., 2020).[37]

Empirically, we can examine the evidence in support of a migration-based mechanism using data from the population census carried out in the Soviet zone in October 1946.

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[36]There is no reason to expect the number of resettled Germans arriving from several countries in Eastern Europe after the end of the war to jump discontinuously at the line of contact, since the expulsion of Germans was triggered by the agreement on post-war Europe reached at the Potsdam conference in August 1945, after the Allied withdrawal.

[37]According to records of the West German Federal Ministry of Displaced Persons, Refugees and War Victims, more than 2.7 million people relocated from East to West Germany between 1949 and 1961, corresponding to 15% of the 1949 population (Rühle and Holzweißig, 1988).

To start with, aggregate statistics show that 74% of people lived in the same state as in 1939. Refugees from the eastern provinces represented 13% of the total population and a further 8% were foreign nationals (mostly resettled Germans).[38]

Importantly for our RDD estimates, selective migration can only drive our results if it occurs around the line of contact. Unfortunately, data on migration is only available at the county-level. As Appendix Table A.6 shows, the share of people residing in the same state as in 1939 does not vary discontinuously around the line of contact at this level. We can also corroborate the lack of evidence for selective migration using municipality-level information on the composition of the population in 1946 (Table 5). In columns 1-6, each column shows RDD estimates using a different variable in the census as dependent variable. All columns use the same fully specified regression discontinuity model (i.e. Table 3, column 5). Column 1 shows that the total population, while larger on the Allied side of the line, does not jump discontinuously at the line of contact. Furthermore, the estimate is very similar to the baseline estimate for 1933 population in Table 1, providing evidence of no excess migration to the Allied side of the line of contact. Column 2 shows that the female share of the population is almost identical at the discontinuity. This further suggests that the impact of the war was homogeneous on both sides of the line (i.e. military casualties and prisoners of war). Column 3 shows no evidence of a discontinuity in the share of protestants. This is important, as the eastern provinces of Silesia and Pomerania from where many refugees originated had relatively high shares of Catholics. Columns 4-6 study the sectoral composition of the economy. We do observe ex-post differences in the industry structure: municipalities on the Allied side exhibit lower agricultural employment (column 4), matched by a larger share of workers in services and trade (column 6).

In columns 7-8 we examine the explanatory power of the population characteristics from the 1946 census on the incidence of protests in 1953 using mediation analysis. To facilitate interpretation, column 7 reports the coefficient of Table 3 as a baseline. Column 8 includes all the municipality-level demographic controls from columns 1-6. While these variables themselves may have been impacted by the different occupying armies (and are thus potentially "bad" controls), examining the stability of the Allied coefficient allows us to assess the extent to which variation in the observed unbalanced dimensions can explain away our main effect of interest. Reassuringly, we find that the point estimate

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[38]Appendix Table A.5 shows the decomposition of the population in each state in 1946 by place of residence at the start of the war in 1939. The shares above are fairly comparable across states, except for Mecklenburg-Vorpommern, a largely rural state that experienced a large land reform in 1945 and, as a result, attracted a larger share of migrants (Naimark, 1997).

is only slightly reduced after introducing those controls. This difference, furthermore, is not statistically significant. While differential migration across the line of contact may have certainly occurred, differences in population size and in the characteristics of the local population cannot explain away our core findings on political resistance.

6.3   Persistence in policies, resistance and media

Another explanation for the stronger opposition to dictatorship in the area initially occupied by the Allies is that the occupation – despite its short duration – allowed for the implementation of policies causing long-lasting benefits to the local population. While theoretically possible, the historical reading suggests that this is unlikely. Following the Nazi surrender, the occupying forces had to attend to a host of pressing issues, including the relocation of displaced persons, the handling of prisoners of war, and the ongoing war in the Pacific. The welfare of the local population was not a priority, as a declassified memo on the US post-surrender program for Germany bluntly acknowledges: "The sole purpose of the military in control of the German economy shall be to facilitate military operations and military occupation"(NARA, 1944). Uncertainty about the duration of Allied presence in the Soviet zone further limited long-run planning and policy implementation (Ziemke, 1976; Henke, 2009).

Differences in Soviet policies. Potential differences in Soviet policies across the line of contact could also potentially explain stronger political opposition on the side initially occupied by the Allies. One prominent policy involved the dismantling of machinery, factories and infrastructure to be shipped back to the Soviet Union as war reparations (Ochsner, 2017). Another prominent policy was a land reform implemented in late 1945, which confiscated large estates without compensation.[39] These policies could explain our findings if they disproportionately affected the Allied-occupied sector. Arguably, the discontinuous jump in the agricultural share of workers reported in Table 5 could be the result of the differential impact of these policies. However, the previous results showing that our findings are robust to the inclusion of these characteristics as additional controls indicates that this is not the main mechanism. More generally, the dismantling of industrial facilities and the land reform took place throughout East Germany. The historical record at no point mentions the line of contact or the Allied-occupied sector when discussing the motivations or the implementation of any Soviet policy during the occupation years.

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[39]Naimark (1997) estimates that 25% of industrial facilities were dismantled during the summer and fall of 1945. The land reform targeted the *Junker* elite thought to be complicit with the Nazi regime.

Outcome measures during the GDR. We use outcome measures from the GDR period to test whether the brief period of Allied exposure had any persistent impacts on policies in the longer term. Specifically, we digitized data from a housing census collected in 1971. The census lists the stock of houses built in different periods, allowing us to test whether areas briefly occupied by the Allies see differential housing construction. We also leverage data from Lichter et al. (2020) which provide measures of the spying intensity (as measured by the number of unofficial Stasi informants per capita) and political arrests per capita in the 1980s. Given the general paucity of data from the GDR period, the newly collected data come with limitations: first, the policy outcomes are measured *after* the protests in 1953. As such, any differences found will either reflect highly persistent policy differences or potential policy responses resulting from the protests. Second, the outcomes are only available at the county-level, thus reducing the statistical power of our RD design. Reassuringly, we are able to replicate our main protest result at the county-level, thus validating the coarser county-level RD design.

The results are reported in Table 6. We run the same spatial RDD regression as in the municipality-level specification (see Equation 1), restricting the counties to the sub-sample that lies within 50km of the line of contact. The outcome in column 1 is the share of municipalities in a given county that report a protest in 1953. Confirming our main finding, we detect the same positive and significant protest effect: counties on the Allied side of the line of contact exhibit greater subsequent regime resistance in 1953. In columns 2-3, the dependent variable is the (log) number of housing units available in the county. Column 2 examines housing built before 1946, while column 3 focuses on housing built on or after that year. In 1971, there was no statistically significant difference between Allied vs. Soviet occupied areas in the stock of housing built before 1946 (column 2). This result is consistent with the interpretation that the fleeting Allied occupation was too short-lived to have led to substantial public works, in line with the historical narrative.[40] In column 3, the dependent variable is the (log) number of housing units constructed in 1946 or after.[41] Again, the results do not show a significant difference in public good provision, as measured by housing construction.

In columns 4-5, we look at spying intensity and political arrests in the final decade of

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[40]The stock of housing in 1971 that was built before 1946 potentially conflates differences in the stock of housing before WWII, differential wartime destruction, and differences in early post-war reconstruction. However, Table 1 suggests balance in socio-economic characteristics before the war and comparable exposure to wartime bombing, thus providing support for our interpretation.

[41]Unfortunately, the data does not allow us to distinguish between the period before 1953 and the period after that year, which would have enabled us to more precisely study a strategic response by the regime to the greater incidence of protests on the Allied side during the 1953 uprising.

existence of the GDR as additional policy measures. Interestingly, we find no statistically significant differences in the deployment of Stasi informants (column 4); similarly, we do not find that areas that were under the fleeting administration of the Allies saw a persistently larger number of political arrests (column 5). While not conclusive given the limitations described, these combined results provide no evidence for persistent and large differences in policies after the short-lived period of Allied occupation.[42]

Differences in resistance and access to free media. Even if Allied-appointed mayors were quickly replaced after the Soviet take-over, Allied occupation may have fostered subsequent resistance to the dictatorship if it allowed for the development of a robust network of pro-democracy groups or clandestine resistance cells. These groups could have facilitated coordination and enabled civil society to overcome free-riding problems in protest participation (Olson, 1965; Tullock, 1971; Tarrow, 1998).

While also theoretically plausible, this mechanism does not find much support in the historical record. First, the short duration of the Allied occupation combined with the uncertainty about the date of withdrawal arguably hindered the Allies' ability to develop strong resistance groups. As mentioned above, the Allied leadership had other short-term priorities and only slowly awakened to the new geopolitical reality (Ziemke, 1976; Ambrose, 2000). Second, the inner German border remained open and fairly unregulated at least until 1952 (the border between East and West Berlin until 1961), suggesting that American intervention in East German politics was unlikely to be determined by the fleeting line of contact in 1945 (Murphy et al., 1997). Third, while there certainly were open and clandestine attempts at organized resistance to the budding dictatorship in East Germany, the Soviet interior ministry (NKVD) was highly effective at neutralizing any attempt at organized opposition (Bruce, 2003; Gregory, 2009). The 1953 uprising posed such a large threat to the regime precisely because of its spontaneous and uncoordinated nature. Lastly, there is no evidence of Allied backing or intervention in the 1953 uprising: "Western agents... were not responsible for causing the unrest in the first place... the East German rebels of 1953 neither requested nor expected military assistance from Washington" (Grieder, 2012, p.42)

A related topic that has attracted substantial academic attention is exposure to free media originating outside of East Germany, including West Berlin (Kern and Hainmueller, 2009; Bursztyn and Cantoni, 2016; Crabtree et al., 2018). To the extent that

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[42]In Appendix Table A.7, we also relate the historical exposure to Allied occupation along the line of contact to protests in 1989 and voting outcomes in 1990. While the point estimates are consistent with higher protest incidence in 1989 and lower support for the successor party of the SED (PDS) in 1990, the results are imprecisely estimated and statistically insignificant.

the availability of Western media varied discontinuously around the line of contact (e.g. through the strategic placement of signal towers by the Allies), our results could reflect greater exposure to Western media. To investigate this possibility, we use the measures of exposure to the *Radio in the American Sector (RIAS)* developed by Crabtree et al. (2018). The results in Appendix Table A.8 show that RIAS signal strength decreases with distance to Berlin, but does not vary discontinuously at the line of contact. More importantly, our main result is unchanged if we control for the RIAS signal strength.[43]

6.4 The "victor effect" – variation within Berlin

One explanation for the increased opposition to the SED dictatorship in the Allied-occupied area is that residents of this area were grateful to Allied rather than Soviet forces for dislodging the Nazis. Internal opponents of the regime, who had faced strong repression in previous years, may have developed sympathy to whichever foreign army they saw first. Moreover, even though Nazi rule enjoyed widespread popular support for more than a decade, civilians may have been grateful for the end of the long and costly war (Stargardt, 2015). If this is the case, initial Allied occupation would mechanically tilt the balance of popular support against the Soviets (i.e. $U(a_1|\mathbf{x}, s_0) < U(s_1|\mathbf{x}, s_0) < U(a_1|\mathbf{x}, a_0)$). This hypothesis also implies that we should see no difference in support for the Allied regime between Soviet-controlled East Berlin and Allied-controlled West Berlin, as the entire city was initially occupied by the Soviet Red Army.

To test this hypothesis, we focus on the Berlin state election held on October 20, 1946. This would be the last citywide election to take place before German reunification.[44] A distinguishing feature was that Berlin was jointly ruled by a council including representatives of both Western Allies and Soviets. As a result, the forced merger of the German Communist Party (KPD) with the more popular Social Democratic Party (SPD) imposed by SMAD in the Soviet zone to create the SED did not apply within the city.[45] The SPD won the election with a resounding 48.7% of the votes, while the SED (i.e., rebranded KPD) came in third with 19.8% of the votes, behind liberal party CDU.

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[43]Allied occupation may have plausibly increased the *demand* for Western media. While we do not find evidence of a complementary effect on protests between Allied occupation and RIAS signal strength, data limitations prevent us from directly testing for differential media demand.

[44]In Appendix Table A.9, we also provide evidence from the elections held in all East German states in 1946. At that time, the permanent separation of the Soviet zone and the consolidation of an authoritarian regime remained uncertain. Still, our suggestive results show that areas on the Allied side of the line of contact saw lower support for the Soviet-backed SED in the 1946 state elections.

[45]The joint *kommandantura* demanded a referendum for the merger of the KPD and SPD to be valid in Berlin. After 82% of SPD members voted against this, the party was allowed to field its own candidates under the SPD banner in the city election (Braun, 1993; Stivers and Carter, 2017).

For this part of the analysis, we collected electoral statistics for Berlin to construct a balanced panel at the district-election level. The dataset covers 75 districts over four elections: 1929 municipal elections, 1930 and 1932 federal elections, plus the 1946 state election. Forty of these districts are located in the western sector ceded to Allied rule in July of 1945 (i.e., West Berlin). To study the effect of initial Soviet occupation on electoral support for the SED in 1946, we implement a difference-in-differences (DiD) design comparing the difference in SED vote share between East and West Berlin, before and after WWII. We use the KPD vote share in the pre-war elections as the relevant comparable measure to the SED vote share in 1946. Crucial to this comparison is the fact that voters in all Berlin districts were able to vote for the same set of parties at each point in time. Our DiD specification includes district and year (election) fixed effects.

Columns 1-3 in Table 7 show results of a simple comparison of means between West Berlin (i.e., Allied) and East Berlin (i.e., Soviet) in 1946. Column 1 includes no controls and shows an 18 pp difference in the SED vote share. In column 2, which controls for latitude and longitude to capture potential geographic gradients in political preferences, we precisely estimate that the SED vote share is 13.6 pp lower in West Berlin. Further restricting the sample to the common longitude support has a negligible impact (column 3). Column 4 provides the DiD estimates. We find that the SED vote share differentially drops by 10.4 pp in West Berlin in 1946. This estimate is also very precise and it is statistically significant at the 1% level. Column 5 provides disaggregate estimates for all elections, leaving 1929 as the omitted category. Figure 7 provides a visualization of these results. The difference in the KPD (SED) vote share between West and East Berlin remained fairly constant in 1930 and 1932, relative to 1929 (omitted election year). This lends credibility to the identifying assumption of parallel trends underlying the DiD research design. In 1946, however, we observe a large 10.5 pp drop in the SED vote share in Allied-controlled West Berlin, almost identical in magnitude to the baseline estimate in column 4. This pattern is robust and also holds when we again restrict the sample to districts with a common longitudinal support (column 6).

In sum, the evidence for Berlin shows that support for the SED was in fact lower in West Berlin than in East Berlin in 1946, despite Berlin having been captured in its entirety by the Red Army. This result is inconsistent with a "victor effect" leading East Germans to reward whichever army occupied their territory first.

7 Conclusion

George Orwell, in his famous novel *1984*, concluded that "so long as [the masses] are not permitted to have standards of comparison, they never even become aware that they are oppressed."[46] Indeed, in many non-democracies, the lack of an alternative makes the comparison all too hard. One-party states and absolute monarchies leave no formal alternative. Hybrid regimes often suppress the opposition. Limited exposure to well-defined political alternatives can substantially shift the cost-benefit calculus of citizens when deciding to support or resist a dictatorial regime.

This paper goes to the heart of the Cold War to study political opposition to the budding dictatorship propped by the Soviet Union in East Germany after WWII. By leveraging the idiosyncratic line of contact that partitioned what would become the German Democratic Republic into Allied-exposed and non-exposed areas, we show that a "glimpse of freedom" of 70 days can substantially alter the propensity of citizens to engage in costly resistance against an authoritarian regime. Our main result shows that exposure to the Allies increased the likelihood of protests during the 1953 uprising that almost toppled the dictatorship in East Germany.

While shedding light on a unique episode in history, data limitations prevent us from identifying the exact micro-level mechanism through which the exposure to the Allied forces translates into political behavior. By combining newly-collected data on mayoral appointments and a retrospective survey on the occupation experience, we show that the identity of the occupying force affected the characteristics of local leaders and the quality of governance. However, we cannot distinguish between a pure informational (learning) mechanism and more behavioral mechanisms. Future work could investigate such mechanisms, for example, by collecting survey data in a contemporary setting, or running more controlled experiments in the lab or in the field.

An intriguing aspect of our findings is that the line of contact predates the formation of the new state - the German Democratic Republic - in which we study subsequent political behavior. As such, our work provides a prologue to the newly emerging and exciting literature interested in the determinants of political behavior in the German Democratic Republic (Stegmann, 2019; Lichter et al., 2020; Mohr, 2021). The fact that initial conditions matter also has broader implications for modern state building, particularly for newly-created and fragile regimes in post-conflict settings.

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[46]George Orwell, 1984, Chapter IX, p. 237. Penguin Modern Classics.

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Figures

Figure 1: Occupied counties in East Germany at the end of WWII (1945)

(a) January 31   **(b)** April 9   **(c)** April 16

(d) April 25   **(e)** May 2   **(f)** May 7
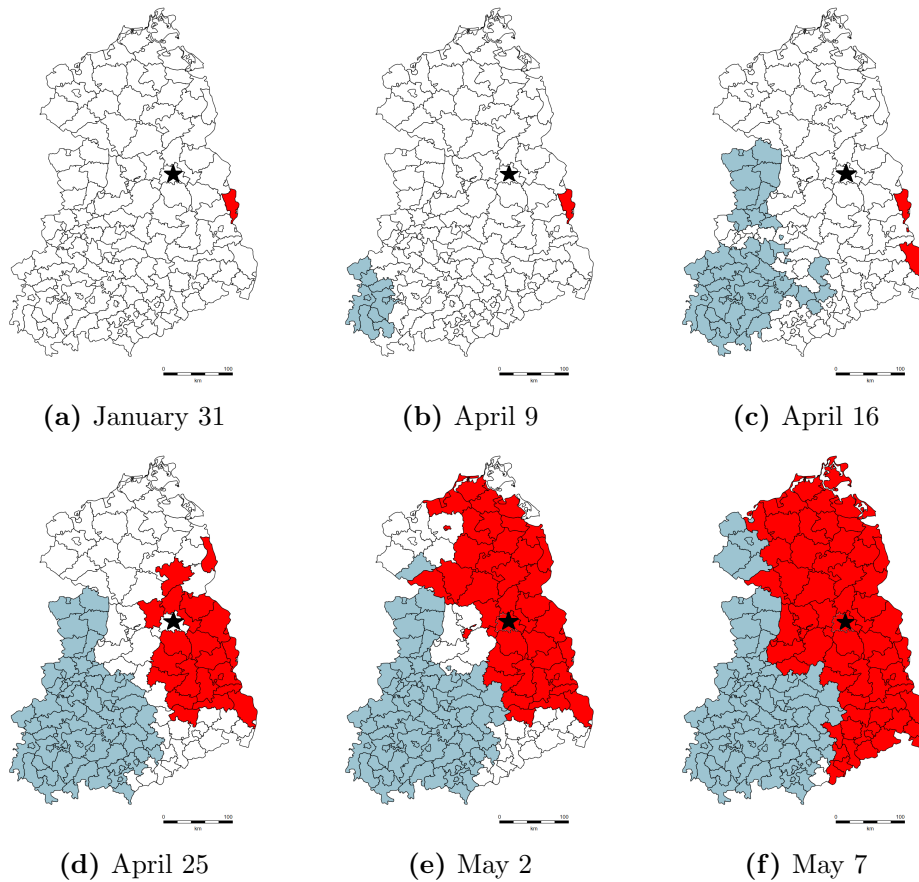
Notes: Blue indicates occupation by Allied Expeditionary Force, red shows occupation by the Soviet Union. Dates based on occupation of the largest city in a county (Kreis). County boundaries from January 1, 1948. The uncolored counties in the south on May 7 correspond to an area later known as the *Free Republic of Schwarzenberg*, which was not initially occupied by Allied or Soviet forces and only captured by Soviets on June 24, 1945. The city of Berlin is tagged with a star.

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Figure 2: The *Line of Contact* and Protest Incidence in 1953

(a) Municipality-level assignment

(b) 1953 uprising
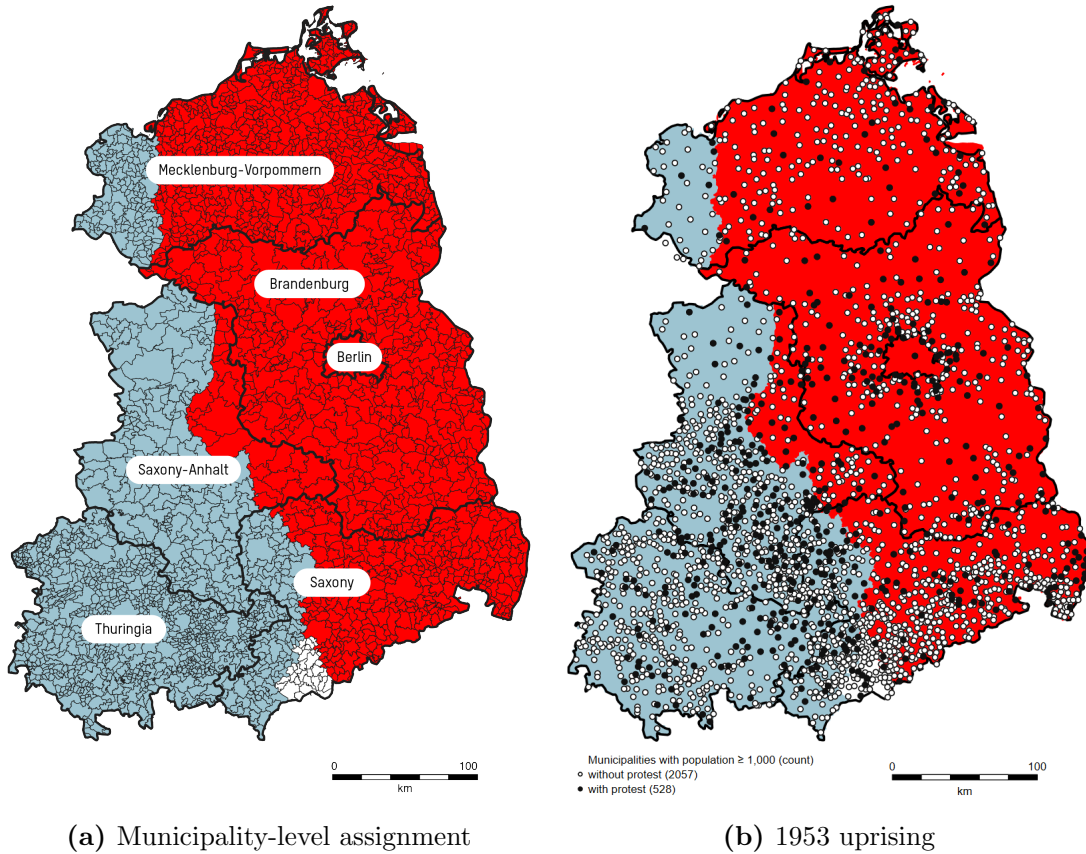
Notes: Map in Panel a shows state and municipal boundaries of the contemporary Federal Republic of Germany (as of December 31, 2016) in the area corresponding to the former German Democratic Republic (GDR). Municipalities in blue were initially occupied by the Allied Expeditionary Force, while those in red were initially captured by the Soviet Union. The uncolored counties in the south correspond to an area later known as the *Free Republic of Schwarzenberg*, which was not initially occupied by Allied or Soviet forces and only captured by Soviets on June 24, 1945. Panel b shows the location of municipalities with information on protest incidence during the 1953 uprising.

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Figure 3: Incidence of protests in the 1953 Uprising around the *Line of Contact*
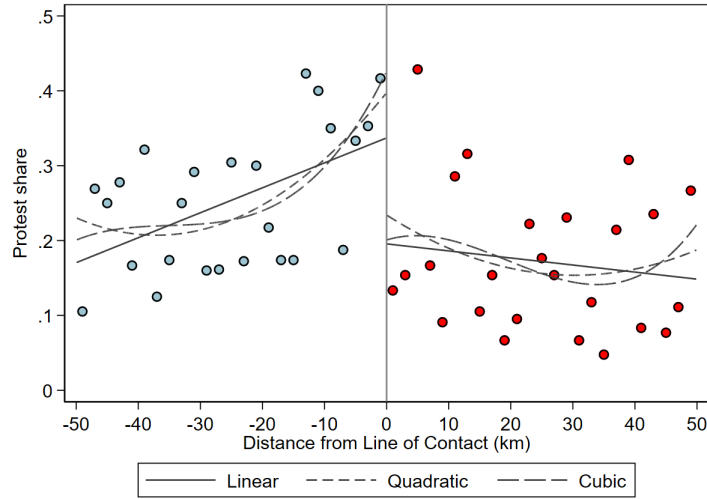
Notes: Units of observation are East German municipalities with a population above 1,000. Figure shows means of an indicator for the occurrence of protests during the 1953 uprising computed in 2km bins around the line of contact. Negative distances from the line denote the Allied side of the line of contact, positive distances correspond to the Soviet side. The fitted polynomials are based on regressions using unbinned data with either a linear (solid line), quadratic (dashed line) or cubic (long dashed line) polynomial of the forcing variable.

Figure 4: 1953 protests - RDD placebo estimates
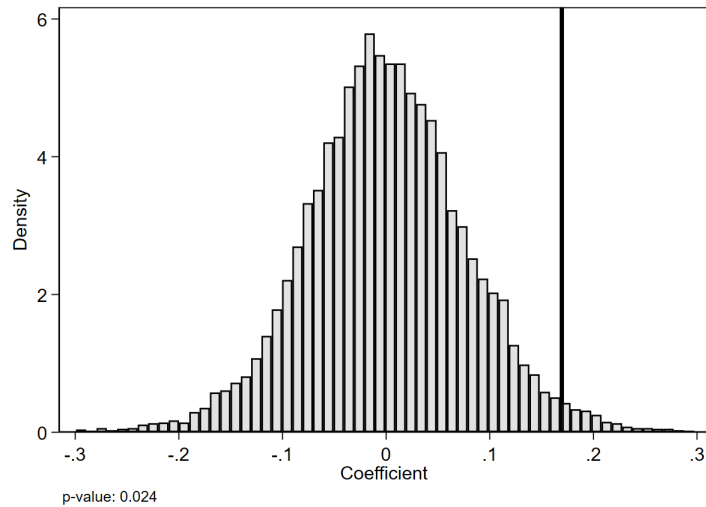
Notes: Figure shows the distribution of 10,000 RDD coefficients obtained from randomly drawn lines dividing East Germany. The vertical black line indicates the estimated coefficient in column 5 of Table 3. See Table 3 for additional notes. *p*-value denotes the share of placebo estimates that are larger than the observed value. For illustration purposes, coefficients below -0.3 and above 0.3 are not displayed in the histogram (0.86% of estimates). Randomly-drawn lines are restricted to ensure that the Allied- and Soviet-assigned sides contain no more than 60% of observations each.

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Figure 5: Appointment of Mayors
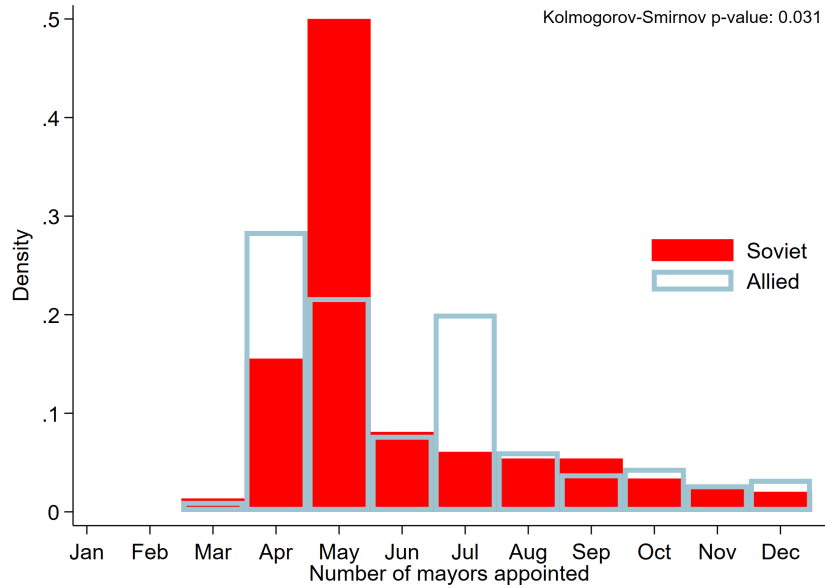
(a) Distribution of Appointments in 1945

(b) Excess Turnover in Allied-occupied Cities

Notes: Panel a shows the month of appointment for mayors in Allied- and Soviet-occupied cities in 1945 ($N = 327$, 156 cities). Panel b shows point estimates and 95% confidence intervals from a regression of an excess turnover indicator (yearly appointments > 1) on the interaction of year dummies with a dummy for cities initially occupied by the Allies ($N = 3,356$, 172 cities). Controls include city and year fixed effects. Standard errors clustered by city.

Figure 6: Perceptions of initial occupation and change in occupier's identity
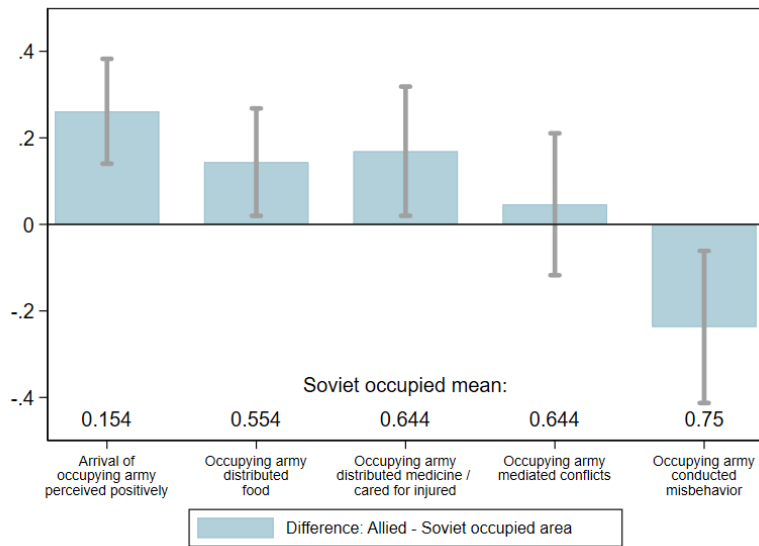
(a) Initial occupation (Allied effect)
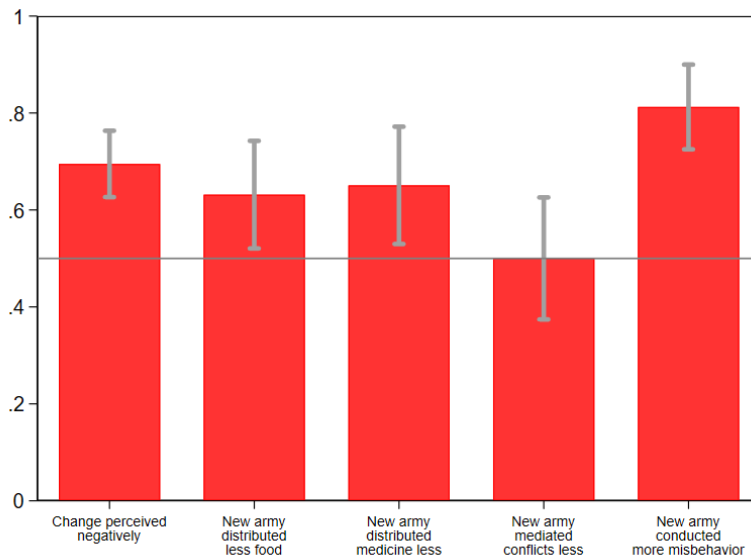
(b) Change of occupying army (Allied to Soviet)

Notes: All dependent variables are coded as binary indicators for ease of interpretation. The sample in Panel a is restricted to individuals whose stated location in May 1945 is within 100 km of the line of contact and that correctly identify the identity of the initial occupying army for the stated location. Coefficients in Panel a are obtained from a regression on an indicator of Allied occupation. Appendix C shows the detailed wording of the questions and Appendix Table A.4 displays robustness of coefficients. In Panel b the sample consists of individuals in Allied-occupied areas (i.e. who experienced a change from Allied to Soviet occupation). Whiskers indicate 95% confidence intervals. Source: Own survey.

Figure 7: Difference in Communist vote share between West and East Berlin

Difference in vote share: West - East Berlin
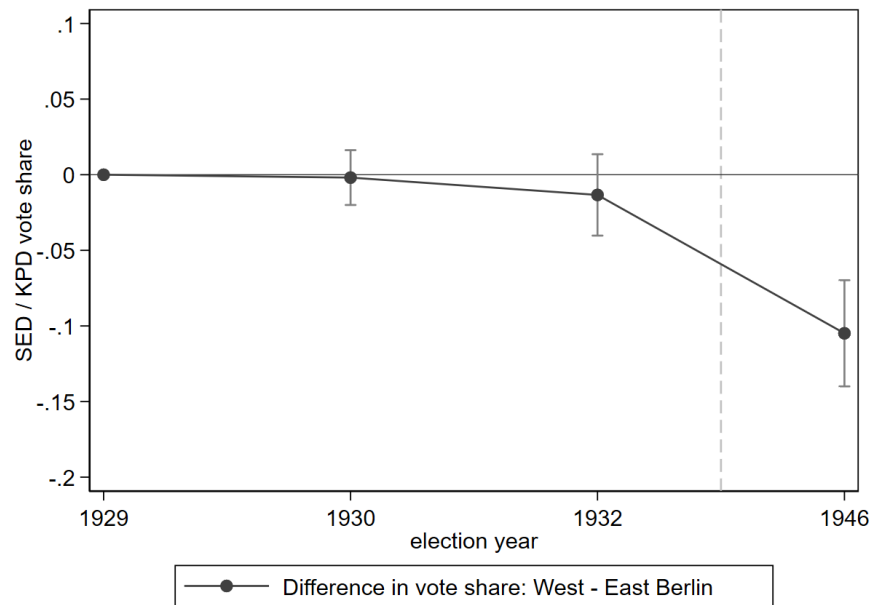
Notes: Plot shows differences in the Communist vote share between West and East Berlin, relative to 1929 (omitted category). Vote share corresponds to the Communist Party of Germany (KPD) until 1932 and to the Socialist Unity Party (SED) in 1946. Units of observation are 75 districts of Berlin (40 in West Berlin). 1929 was a municipal election, 1930 and 1932 federal elections and 1946 the Berlin state election. Estimation includes district and year fixed effects (see Table 7, column 5 for the regression results). Standard errors are clustered at the district-level. Whiskers indicate 95% confidence intervals.

Tables

Table 1: Pre-determined characteristics in Allied- and Soviet-occupied municipalities

	Mean	Diff: Allied-Soviet		Obs.
	(1)	(2)	(3)	(4)
Panel A: Municipality level (pre-war, ≥ 2,000 population)				
Log total population 1933	8.843	-0.139	0.243	519
		(0.101)	(0.200)	
Log working population 1933	9.156	-0.194	0.019	241
		(0.131)	(0.286)	
Female share of working population 1933	0.333	-0.007	-0.017	241
		(0.008)	(0.014)	
Share unemployed 1933	0.204	0.008	-0.007	241
		(0.010)	(0.019)	
Share of agricultural workers 1933	0.167	-0.009	0.006	241
		(0.020)	(0.037)	
Share of industrial workers 1933	0.364	0.038**	0.012	241
		(0.019)	(0.023)	
Share protestant 1925	0.896	-0.004	-0.014	310
		(0.020)	(0.009)	
Share catholic 1925	0.062	0.007	0.008	310
		(0.020)	(0.009)	
Share Jewish 1925	0.004	-0.003*	0.001	226
		(0.002)	(0.001)	
Voter turnout 1933	0.912	0.012***	-0.008	518
		(0.004)	(0.006)	
NSDAP share 1933	0.458	-0.009	-0.009	518
		(0.013)	(0.021)	
SPD share 1933	0.229	-0.017	0.001	518
		(0.012)	(0.025)	
KPD share 1933	0.162	0.038***	0.005	518
		(0.011)	(0.019)	
Panel B: Municipality level (1946)				
Distance to Berlin (km)	160.236	76.169***	-1.761	5649
		(9.048)	(3.839)	
Distance to closest concentration camp (km)	75.194	-19.568***	-5.665	5649
		(4.860)	(3.738)	
Distance to inner German border (km)	91.919	-90.813***	3.246	5649
		(7.301)	(4.583)	
Bombing within 10km (0/1)	0.445	0.246***	-0.064	5649
		(0.040)	(0.108)	
Synagogue (0/1)	0.024	0.016*	0.020	5649
		(0.009)	(0.023)	
Elevation (m)	163.407	111.646***	-29.311*	5649
		(23.288)	(15.861)	
Distance to closest mineral reserve (km)	113.314	-88.483***	1.276	5649
		(13.333)	(4.938)	
Distance to closest coast (km)	229.701	91.676***	4.057	5649
		(18.295)	(5.039)	
Forcing variable $f(\mathbf{g}_i)$			Linear × Allied	
Border segment FEs			Y	
Bandwidth	Full	Full	50km	50km

Notes: Units of observation in Panel A are municipalities in East Germany with a population size above 2,000 during the Weimar Republic. Units of observation in Panel B are municipalities in East Germany in 1946 (corresponding to the 1946 election and census outcomes). Column 1 shows the sample mean, column 2 shows the mean difference between Allied- and Soviet-occupied areas. Column 3 shows the difference after the inclusion of the forcing variable and ten border segment FEs in a sample window of 50 km around the line of contact. Column 4 shows the number of observations for the 50 km bandwidth. Labor force is defined as all individuals that were either self-employed, civil servants, employees, workers or domestic workers. See section 3 for a more detailed description of the data sources and variables used. Standard errors clustered at the county level in parentheses. *** $p <0.01$, ** $p <0.05$, * $p <0.1$

Table 2: Exposure to Allied forces around the *Line of Contact*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: Days of Allied occupation (Mean: 42.6)						
Allied	74.724***	71.369***	71.858***	72.164***	73.328***	72.989***	72.147***
	(1.400)	(2.118)	(1.905)	(2.064)	(1.711)	(2.512)	(0.267)
	[1.394]	[2.109]	[1.896]	[2.052]	[1.700]	[2.496]	
Forcing variable $f(\mathbf{g}_i)$		Linear		Linear $\times$ Allied		Quadratic $\times$ All.	Local poly.
Border segment FEs				Y	Y	Y	
Full controls					Y	Y	
Bandwidth	50km	50km	50km	50km	50km	50km	50km
Observations	5,649	5,649	5,649	5,649	5,649	5,649	5,649

Notes: Units of observation are East German municipalities in 1946. Dependent variable is the number of days of Allied occupation. Exposure is calculated using (i) the occupation date of the largest city in the county (*Kreis*) in which the municipality is located and (ii) July 3 as the date of Allied withdrawal. Estimate in column 7 based on Calonico et al. (2014). Border segment FEs correspond to ten equally large segments of the distribution of latitudes of municipalities in the 50 km bandwidth around the line of contact. Controls are latitude, longitude and all municipality-level variables of Table 1 (Panel B). Standard errors clustered at the county level in parentheses. Conley standard errors in square brackets. *** $p <0.01$, ** $p <0.05$, * $p <0.1$

Table 3: Incidence of protests during the 1953 Uprising around the *Line of Contact*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: Incidence of protests (Mean: 0.22)						
Allied	0.081**	0.163***	0.142**	0.143***	0.170***	0.182**	0.150**
	(0.033)	(0.057)	(0.058)	(0.051)	(0.061)	(0.085)	(0.072)
	[0.026]	[0.059]	[0.058]	[0.056]	[0.061]	[0.088]	
Forcing variable $f(\mathbf{g}_i)$		Linear		Linear $\times$ Allied		Quadratic $\times$ All.	Local poly.
Border segment FEs				Y	Y	Y	
Full controls					Y	Y	
Sample				Population $\geq 1,000$			
Bandwidth	50km	50km	50km	50km	50km	50km	50km
Observations	968	968	968	968	968	968	968

Notes: The dependent variable is an indicator for the occurrence of protests during the 1953 uprising. The sample consists of all East German municipalities with a population above 1,000. Estimate in column 7 based on Calonico et al. (2014). Border segment FEs correspond to ten equally large segments of the distribution of latitudes of municipalities in the 50 km bandwidth around the line of contact. Controls are latitude, longitude and all municipality-level variables of Table 1 (Panel B). Standard errors clustered at the county level in parentheses. Conley standard errors in square brackets. *** $p <0.01$, ** $p <0.05$, * $p <0.1$

Table 4: Incidence of protest along the *Line of Contact* - main estimates, land, river and placebo lines

Panel A: Main estimation sample	Dependent variable: Incidence of protests					
Mean of dep. variable	0.22	0.22	0.13	0.13	0.27	0.27
	(1)	(2)	(3)	(4)	(5)	(6)
Allied	0.142**	0.170***	0.150*	0.148	0.120*	0.137*
	(0.058)	(0.061)	(0.077)	(0.113)	(0.068)	(0.080)
	[0.058]	[0.061]	[0.077]	[0.101]	[0.079]	[0.081]
Line:	Full line		Land		Rivers	
Forcing variable $f(\mathbf{g}_i)$	Linear $\times$ Allied					
Border segment FEs		Y		Y		Y
Full Controls		Y		Y		Y
Sample	Population $\geq 1{,}000$					
Bandwidth	50km	50km	50km	50km	50km	50km
Observations	968	968	366	366	602	602

Panel B: Placebo rivers	Dependent variable: Incidence of protests					
Mean of dep. variable	0.25	0.25	0.18	0.18	0.26	0.26
	(1)	(2)	(3)	(4)	(5)	(6)
Allied	-0.021	-0.002	-0.002	-0.021	-0.006	-0.021
	(0.061)	(0.059)	(0.071)	(0.068)	(0.065)	(0.063)
	[0.060]	[0.064]	[0.065]	[0.066]	[0.067]	[0.066]
Line:	Saale (placebo 1)		Elbe (placebo 2)		Spree-Havel (placebo 3)	
Forcing variable $f(\mathbf{g}_i)$	Linear $\times$ Allied					
Border segment FEs		Y		Y		Y
Full Controls		Y		Y		Y
Sample	Population $\geq 1{,}000$					
Bandwidth	50km	50km	50km	50km	50km	50km
Observations	787	787	530	530	579	579

Notes: The dependent variable is an indicator for the occurrence of protests during the 1953 uprising. The sample consists of all East German municipalities with a population above 1,000. Columns 1-2 of Panel A replicate estimates from Table 3. Columns 3-6 differentiates by whether the line of contact was defined by land or rivers. Panel B shows estimates from three placebo lines of contact running along rivers (see Appendix Figure A.5). Border segment FEs correspond to ten equally large segments of the distribution of latitudes of municipalities in the 50 km bandwidth around the line of contact. Controls are latitude, longitude and all municipality-level variables of Table 1 (Panel B). Standard errors clustered at the county level in parentheses. Conley standard errors in square brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5: Testing for demographic changes around the line of contact

	ln Total	Share of total population					Protests 1953	
	Pop.	Female	Protestant	Agr.	Ind.	Svc. & Trade		
Mean of dep. variable	6.27	0.56	0.83	0.47	0.23	0.10	0.22	0.22
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Allied	0.222	-0.000	-0.012	-0.072**	0.033	0.048**	0.170***	0.148**
	(0.146)	(0.003)	(0.009)	(0.035)	(0.023)	(0.020)	(0.061)	(0.060)
	[0.073]	[0.003]	[0.008]	[0.030]	[0.019]	[0.017]	[0.061]	[0.059]
Bandwidth	50km	50km	50km	50km	50km	50km	50km	50km
Forcing variable $f(\mathbf{g}_i)$	Linear $\times$ Allied							
Border segment FEs	Y	Y	Y	Y	Y	Y	Y	Y
Full controls	Y	Y	Y	Y	Y	Y	Y	Y
Sample	All municipalities (1946 census)						Pop. $\geq$ 1,000	
Census 1946 controls								Y
Observations	5,649	5,649	5,649	5,649	5,649	5,649	968	968

Notes: Units of observation in columns 1-6 are all East German municipalities of 1946. Dependent variables are log population, share female, share protestant and shares in agriculture, industry, service and trade, according to the 1946 census in the Soviet occupation zone. Units of observation in columns 7-8 are East German municipalities with a population over 1000. Border segment FEs correspond to ten equally large segments of the distribution of latitudes of municipalities in the 50 km bandwidth around the line of contact. Controls are latitude, longitude and all municipality-level variables of Table 1 (Panel B). Census 1946 controls are all dependent variables of columns 1-6. Regressions in columns 2-6 are population weighted. Standard errors clustered at the county level in parentheses. Conley standard errors in square brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6: Public good provision and governance during the GDR

	Protest	Log housing built		Spying	Political
	1953	Pre 1946	Post 1946	intensity	arrests
Mean of dep. var	0.344	9.867	8.299	0.0978	0.586
	(1)	(2)	(3)	(4)	(5)
Allied	0.362***	0.373	0.447	0.035	0.213
	(0.126)	(0.246)	(0.311)	(0.022)	(0.153)
Forcing variable $f(\mathbf{g}_i)$	Linear $\times$ Allied				
Border segment FEs	Y	Y	Y	Y	Y
Full controls	Y	Y	Y	Y	Y
Bandwidth	50km	50km	50km	50km	50km
Observations	85	85	85	77	83

Notes: Units of observation are counties of the GDR. Protest denotes the share of municipalities in a county with protests in 1953. Data on housing built comes from the GDR housing census of 1971. Spying intensity (the number of unofficial informers divided by population) is for 1980-88; political arrests per capita is for 1984-88. Data on spying and political arrests from Lichter et al. (2020). Border segment FEs correspond to ten equally large segments of the distribution of latitudes of counties. Controls are latitude, longitude and all variables of Table 1 (Panel B). Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

**Table 7:** Difference in Communist vote share between West and East Berlin

Dependent variable:	SED vote share			SED/KPD vote share		
Mean of dep. var.	0.206	0.206	0.182	0.209	0.237	0.224
	(1)	(2)	(3)	(4)	(5)	(6)
Allied	-0.176***	-0.136***	-0.134***			
	(0.012)	(0.018)	(0.021)			
Allied × 1930					-0.002	0.002
					(0.009)	(0.010)
Allied × 1932					-0.013	-0.026
					(0.013)	(0.020)
Allied × 1946				-0.104***	-0.105***	-0.099***
				(0.019)	(0.018)	(0.021)
Election year FE				Y	Y	Y
District FE				Y	Y	Y
Latitude / longitude		Y	Y			
Common longitude support			Y			Y
Election sample:						
1946 Berlin state election	Y	Y	Y	Y	Y	Y
1929 municipal elections				Y	Y	Y
1930 and 1932 federal elections					Y	Y
Observations	75	75	49	126	247	164

Notes: Units of observation are districts in Berlin. Columns 1-3 show the difference in vote share of the Socialist Unity Party (SED) in the 1946 State election in between East (Soviet sector) and West Berlin (American, British and French sectors). Columns 4-6 include pre-war elections in a difference-in-differences setting using the vote share of the Communist Party of Germany (KPD), the predecessor of the SED. Column 4 restricts pre-war elections to the 1929 local election, while columns 5-6 additionally include federal elections in 1930 and 1932. Common longitudinal support indicates that sample only includes districts in West Berlin as far West as the westernmost district in East Berlin and vice versa. Standard errors (robust in columns 1-3, clustered at the district level in columns 4-6) in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

ONLINE APPENDIX (not for publication)

A Additional Figures and Tables

Figure A.1: The Times, June 7 1945

(a)   (b)
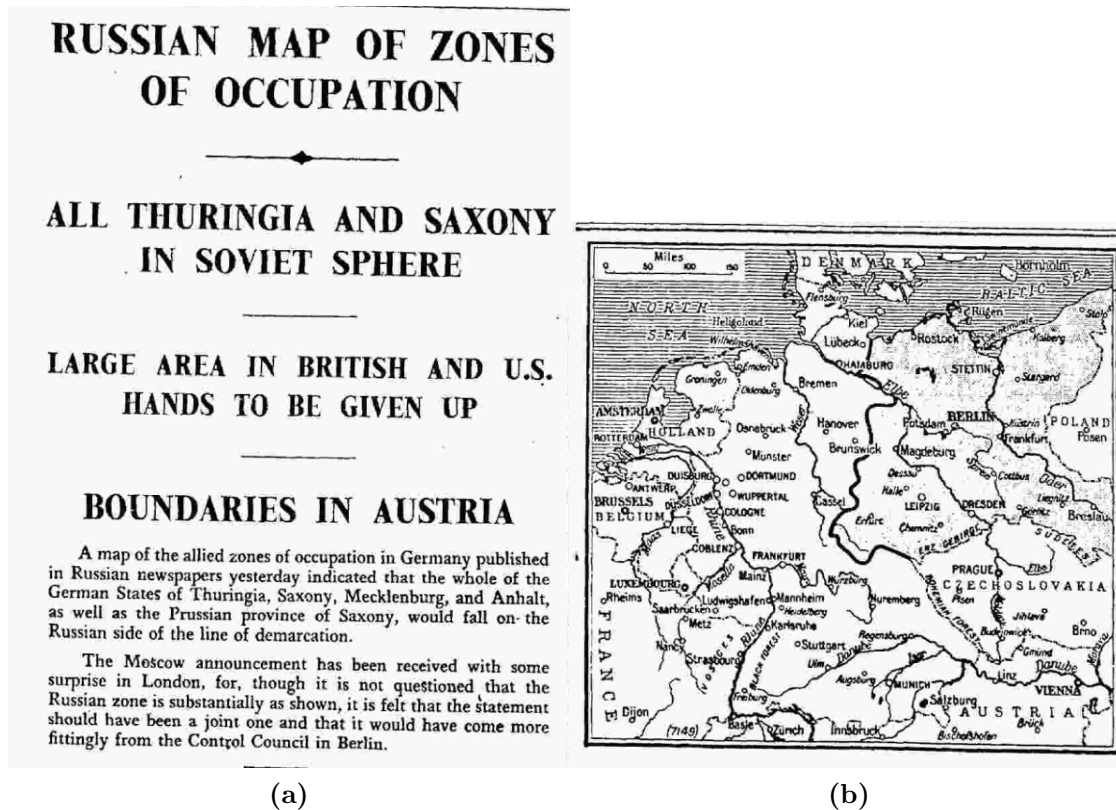
Notes: Excerpts from The Times newspaper cover from June 7 1945 showing the cover title and a detailed map of the agreed upon occupation zones.

Figure A.2: Density of observations around the line of contact

p-value: 0.426
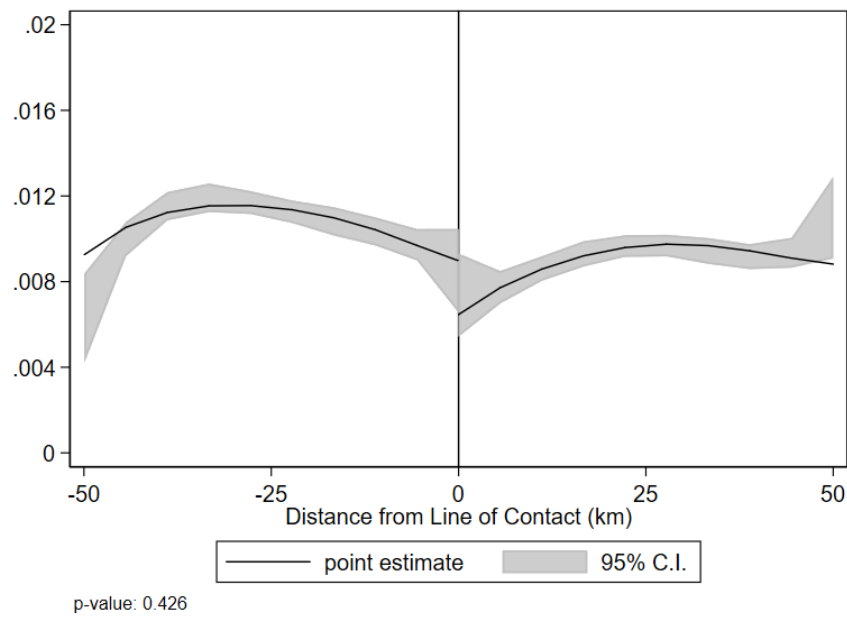
Notes: Figure plots the density of 1946 municipalities around the line of contact using the estimator proposed in Cattaneo et al. (2019). Negative numbers denote the Allied side of the line and positive numbers the Soviet-occupied side, respectively. For estimation a cubic polynomial and a symmetric bandwidth of 50km is used.

Appendix p. 2

Figure A.3: Duration of Allied occupation around the *Line of Contact* (1945)
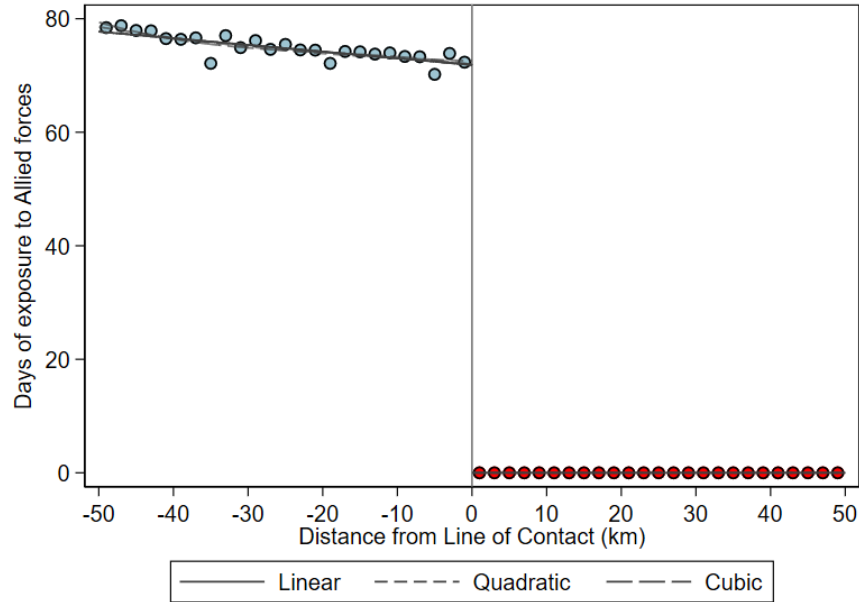
Notes: Units of observation are municipalities in East Germany in 1946. Plot shows raw means of the number of days of exposure to Allied forces computed in 2 km bins around the line of contact. The fitted polynomials are based on regressions using unbinned data with a linear (solid line), quadratic (dashed line) and cubic (long dashed line) polynomial. Negative numbers denote the Allied side of the line and positive numbers correspond to the Soviet side. Exposure is calculated using (i) the occupation date of the largest city in the county (*Kreis*) in which the municipality is located and (ii) July 3 as the date of Allied withdrawal.

Figure A.4: Placebo divisions of East Germany

(a)

(b)

(c)

(d)
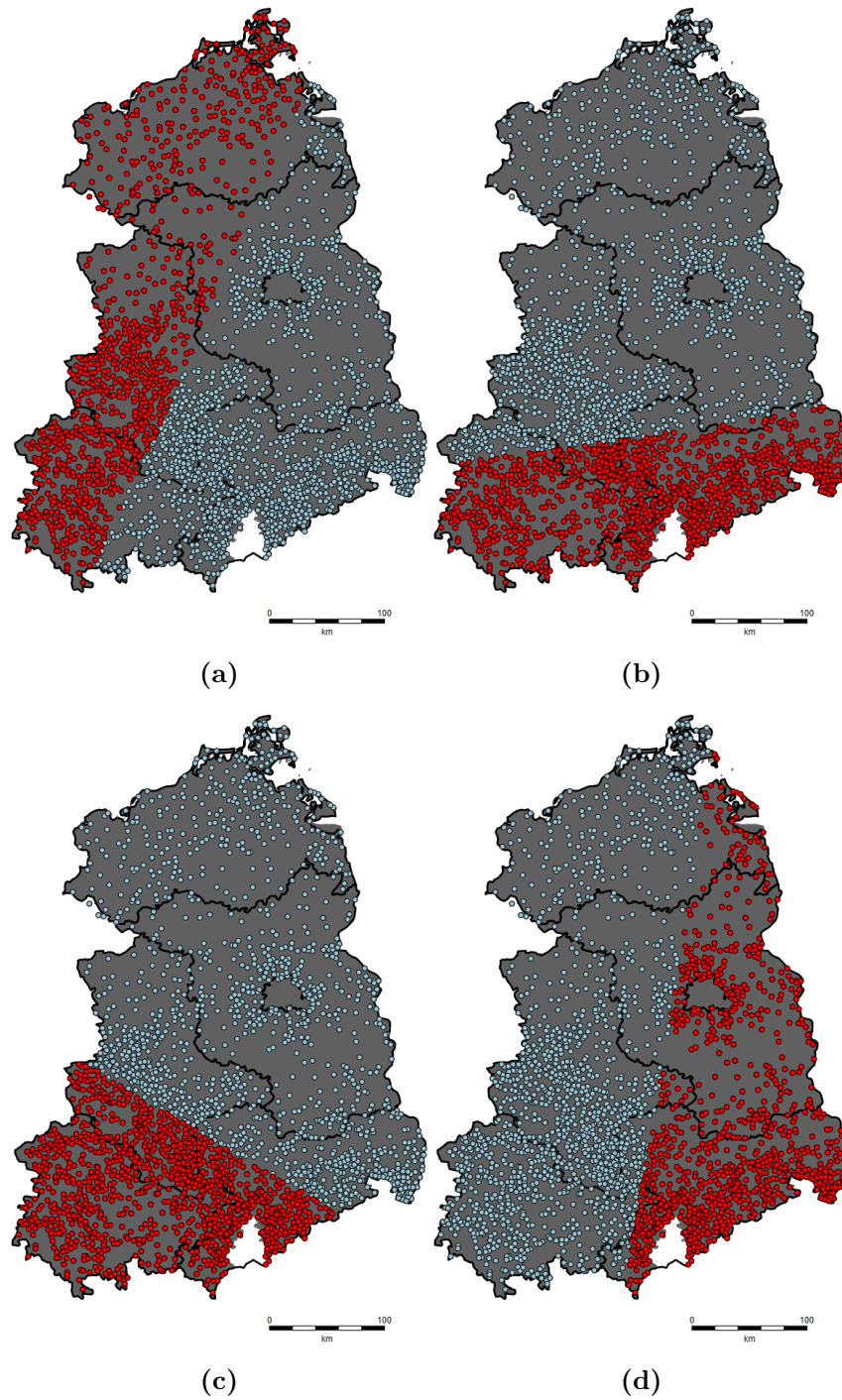
Notes: Figure shows four illustrative placebo divisions of East Germany on which the estimates in Figure 4 are based. Blue dots denote Allied assigned municipalities, red dots Soviet assigned ones. Restriction on random divisions are that each side may contain at most 60% of municipalities.

Figure A.5: The *Line of Contact* and Rivers
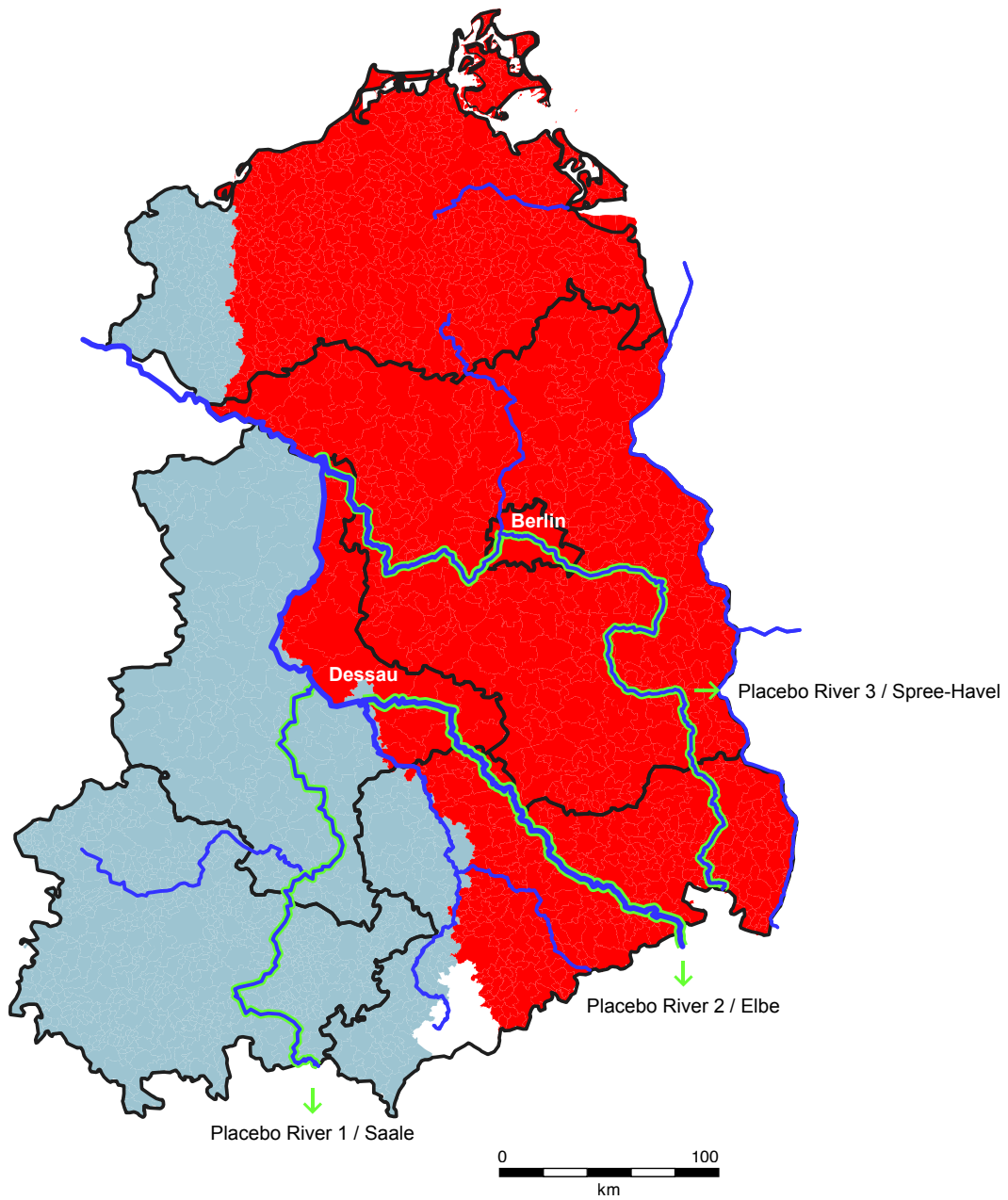
Notes: Map shows rivers in East Germany. Blue colored municipalities were initially occupied by the Allies, red colored ones were captured by the Soviet Union. Dark blue lines show the largest rivers flowing through East Germany. The highlighted river segments denote the river placebo lines used in Table 4.

Figure A.6: 1953 protest result with border segments omitted
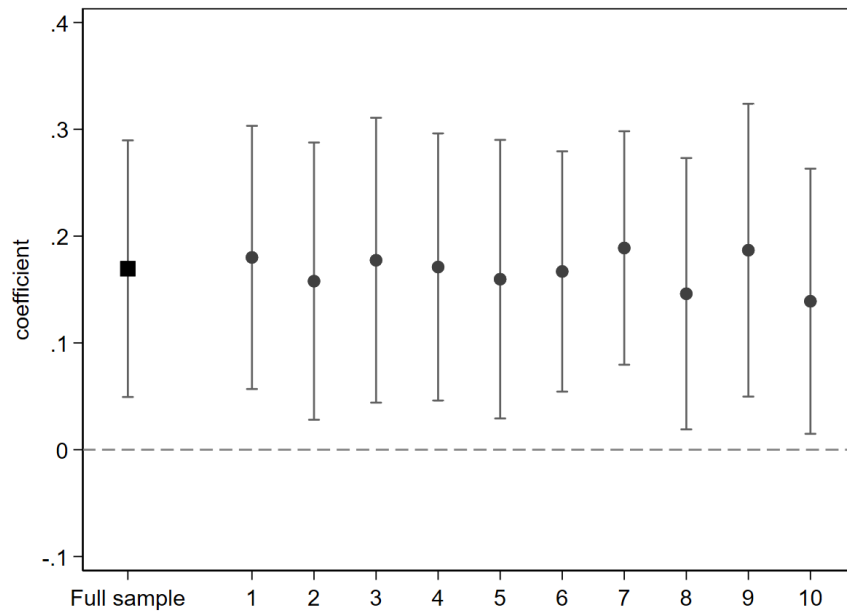
Notes: Figure shows regression estimates corresponding to Table 3 where each of the ten equally large border segments are dropped in turn. Estimates are based on the full specification in column 5. Square denotes the reference estimate of Table 3. Whiskers show 95% confidence intervals.

Figure A.7: 1953 protest results with states omitted

Figure A.7: 1953 protest results with states omitted
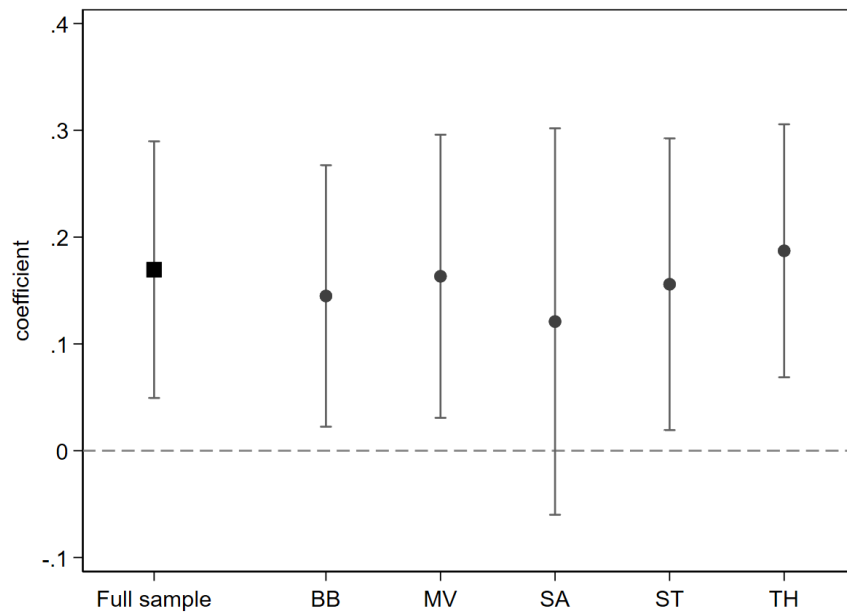
Notes: Figure shows regression estimates corresponding to Table 3 where each of the five states are dropped in turn. BB Brandenburg, MV Mecklenburg-Vorpommern, SA Saxony, ST Saxony-Anhalt, TH Thuringia. Estimates are based on the full specification in column 5. Square denotes the reference estimate of Table 3. Whiskers show 95% confidence intervals.

Figure A.8: 1953 protest with varying bandwidth
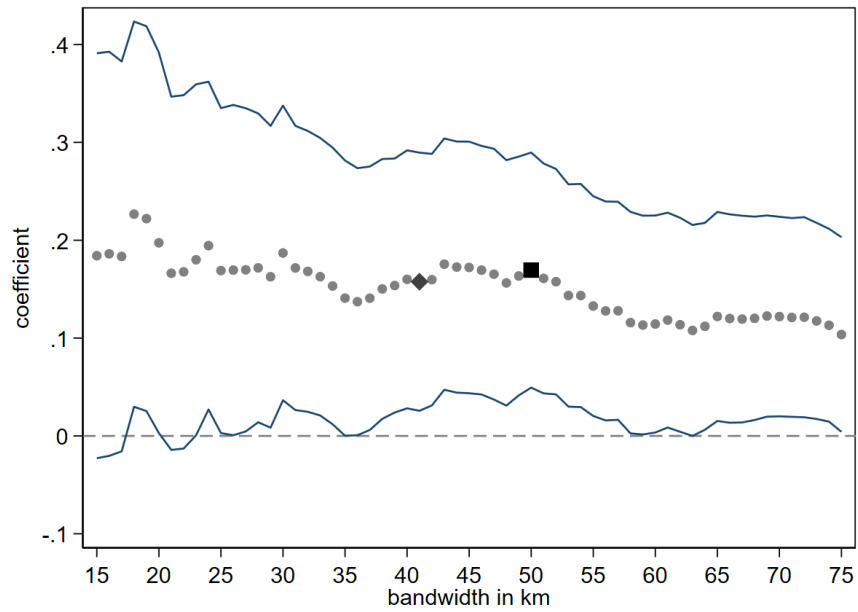
Notes: Figure shows regression estimates of Table 3 with varying bandwidths. Regressions are based on the full specification in column 5. The black square at 50 km indicates the coefficient displayed in the table, the dark grey diamond shows the estimate based on the data-driven bandwidth selection using the procedure developed by Calonico et al. (2014). Dark blue lines shows 95% confidence intervals.

Figure A.9: 1953 protest results with municipalities dropped in vicinity to the line
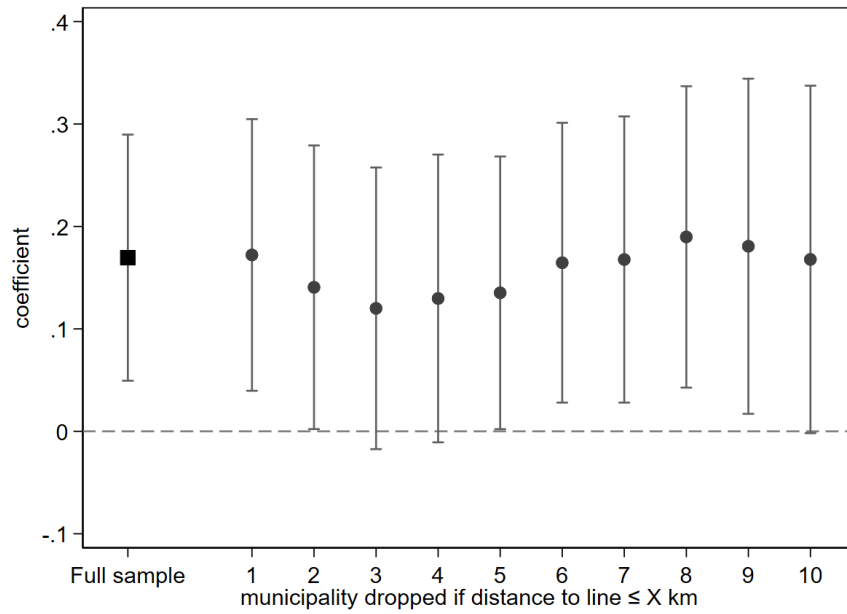
Notes: Figure shows regression estimates corresponding to Table 3 where subsequently municipalities within x km to the line are dropped (*donut RDD*). Estimates are based on the full specification in column 5. Square denotes the reference estimate of Table 3. Whiskers show 95% confidence intervals.

Figure A.10: End of tenure of Allied appointed mayors by party affiliation
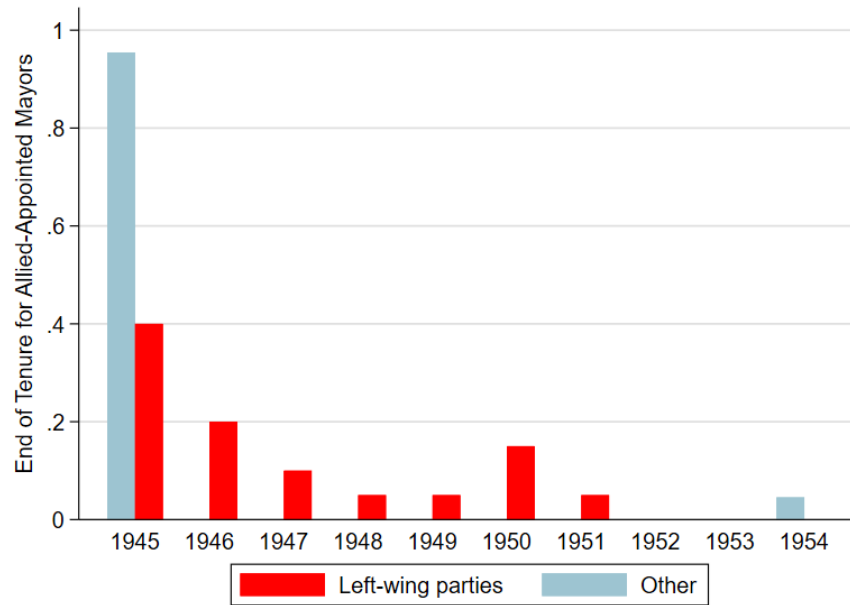
Notes: Figure shows the year in which the tenure of mayors appointed under Allied occupation (March-June 1945) ended, disaggregated by party affiliation ($N = 42$). Left-wing parties are KPD and SPD. Other includes CDU, DDP, LDP, NSDAP, and those without partisan affiliation. Mayors without recorded affiliation are dropped in this exposition.

Figure A.11: Attrition of survey sample

Start sample: N=1,151
(40 first-hand accounts,
1,111 second-hand accounts)

Sample restrictions for initial occupation

Sample restrictions for change of occupying army

Location in East Germany in May 1945

Location in East Germany in July 1945

N=957

N=1,035

Stated occupation force matches May 1945 location

In Allied-occupied area and Soviet forces indicated as new occupier

N=589

N=324

Drop if "unsure" responded for all questions of Figure 7, panel a)

Drop if "unsure" responded to all questions of Figure 7, panel b)

Final sample:
N=472

Final sample:
N=216

Notes: Figure shows the attrition of the survey sample. The starting sample exceeds the number of respondents ($N = 1,002$) as second-hand accounts can come from mothers and fathers if the occupation experience was different. The left hand-side of the figure in light-blue corresponds to Panel a of Figure 6, the red right-hand side to Panel b. Source: Own survey.

Table A.1: Incidence of protests during the 1953 Uprising around the *Line of Contact* including Free Republic of Schwarzenberg

| | Dependent variable: Incidence of protests (Mean: 0.21) | | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Allied	0.080**	0.142***	0.131**	0.119***	0.130**	0.128*	0.137**
	(0.031)	(0.053)	(0.053)	(0.045)	(0.055)	(0.073)	(0.064)
	[0.025]	[0.052]	[0.051]	[0.050]	[0.054]	[0.076]	
Forcing variable $f(\mathbf{g}_i)$		Linear		Linear × Allied		Quadratic × All.	Local poly.
Border segment FEs				Y	Y	Y	
Full controls					Y	Y	
Sample				Population ≥ 1,000			
Bandwidth	50km	50km	50km	50km	50km	50km	50km
Observations	1,043	1,043	1,043	1,043	1,043	1,043	1,043

Notes: The dependent variable is an indicator for the occurrence of protests during the 1953 uprising. The sample consists of all East German municipalities with a population above 1,000, including municipalities of the initially unoccupied *Free Republic of Schwarzenberg*. These observations are assigned to be Soviet-occupied, as Soviet troops captured the area on June 24, 1945. Estimate in column 7 based on Calonico et al. (2014). Border segment FEs correspond to ten equally large segments of the distribution of latitudes of municipalities in the 50 km bandwidth around the line of contact. Controls are latitude, longitude and all municipality-level variables of Table 1 (Panel B). Standard errors clustered at the county level in parentheses. Conley standard errors in square brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A.2: Overview of outcomes

Outcomes	Geographic level	Observations	Figure / table	Description	Source
(1)	(2)	(3)	(4)	(5)	(6)
Variable list in Table 1, Panel A	County and municipality level (1925, 1933)	226-519 (50km)[a]	Table 1	German Reich (1925, 1933), official statistics	Hänisch (1989)
Variable list in Table 1, Panel B	All municipalities in 1946	5,649 (50km)	Table 1, Figure A.2	WWII measures and time-invariant geographic characteristics	THOR, Jewish Virtual Library, US Geological Survey, own calculations
Occupation date / exposure to Allied forces	Largest city of 1946 counties	178	Figure 1, A.3, Table 2.	Date of occupation at the end of WWII for counties' largest cities. Change of occupation on July 3, 1945	Own data collection
Protest indicator	Municipalities with population $\geq$ 1000 in 1953	968 (50km)	Figure 2, 3, 4, A.6-A.9, Table 3, 4, 5, A.1, A.8	1953 uprising	Crabtree et al. (2018); Kowalczuk (2003)
Census outcomes, SED vote share, turnout, invalid votes	All municipalities in 1946	5,649 (50km)	Table 5, A.9	1946 state elections in Soviet occupation zone and census outcomes	Falter (1997)
SED / KPD vote share	Districts of Berlin (1946 and pre-war)	75 (1946 only), 247 (panel)	Figure 7, Table 7	1946 Berlin state elections and pre-war municipal and federal elections	Department for Statistics Berlin-Brandenburg
Census outcomes on migration	County level (1946)	178 (89 50km)	Table A.5, A.6	Detailed population data from census	1946 census of the Soviet Occupation Zone (own digitization)
Housing construction	GDR counties	85 (50km)	Table 6	Housing built over time	GDR census
Spying intensity / political arrests	GDR counties (1980-88, 1984-88)	77, 83 (50km)	Table 6	Stasi spies per population, political arrests per population	Lichter et al. (2020)
Mayors	Cities with population $\geq$ 10,000	3,356 mayors, 172 cities	Figure 5, A.10	Data on mayors appointed	Own data collection
Survey responses	Individuals currently living in East Germany	472 (initial occupation), 216 (change of occupying army)	Figure 6, A.11, Table A.3, A.4	Survey data on East Germans born $\leq$ 1960	Own data collection
Socio-economic characteristics	County-level (2018)	2183	Table A.3	Individual-level characteristics of East Germans born $\leq$ 1960	Socio-economic Panel (SOEP), see Goebel et al. (2019)
1989 protest	Municipality with population $\geq$ 1,000 (1989)	900 (50km)	Table A.7	Daily protest data with extensive characteristics	*Archiv Bürgerbewegung*[b]
PDS and Allianz für Deutschland vote share	Municipality (1990)	2,262	Table A.7	Election results aggregated from polling-station level	German Federal Archives, own digitization

Notes: Table gives an overview of the main outcomes used in the paper.

[a]Observations numbers differ between the variables due to the different aggregation level of variables (see Hänisch, 1989). E.g., some indicators were only aggregated by the statistical office for municipalities with a population $\geq$ 10,000.

[b]https://github.com/correctiv/wendedemos

Table A.3: Comparison of survey sample with East German population

	Own survey (1)	SOEP (2)
Age in years	67.89	72.73
	(6.39)	(8.77)
High education	0.48	0.18
	(0.50)	(0.38)
Female	0.41	0.55
	(0.49)	(0.50)
Birth year of mother	1,923.83	1,923.92
	(8.65)	(8.76)
Current state of residence		
Berlin	0.19	0.18
	(0.39)	(0.38)
Brandenburg	0.21	0.17
	(0.41)	(0.37)
Mecklenburg-Vorpommern	0.07	0.10
	(0.25)	(0.30)
Saxony	0.33	0.26
	(0.47)	(0.44)
Saxony-Anhalt	0.09	0.15
	(0.29)	(0.36)
Thuringia	0.11	0.13
	(0.31)	(0.34)
Observations	472	2183

Notes: Table compares the survey sample from Figure 6 with the East German population as of 2018. Both samples are restricted to individuals living in East Germany born before 1960. High education denotes that respondents have obtained at least upper secondary education. Birth year of mother only shown for individuals born after 1940 (see Appendix C). Means in SOEP calculated using sample weights, making the sample representative for the population.
Source: Own survey and SOEP v35

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Table A.4: Allied occupation - survey evidence

	Sample mean	Allied coefficient				N
	(1)	(2)	(3)	(4)	(5)	(6)
Arrival of occupying army perceived positively	0.233	0.295***	0.295***	0.261***	0.265***	391
		(0.054)	(0.053)	(0.062)	(0.061)	
Occupying army distributed food	0.666	0.143**	0.124**	0.144**	0.121*	317
		(0.056)	(0.056)	(0.063)	(0.064)	
Occupying army distributed medicine / cared for injured	0.595	0.158**	0.145**	0.169**	0.149**	259
		(0.066)	(0.066)	(0.076)	(0.074)	
Occupying army mediated conflicts	0.637	0.063	0.068	0.047	0.054	234
		(0.073)	(0.077)	(0.083)	(0.086)	
Occupying army conducted misbehavior	0.688	-0.225***	-0.221***	-0.237***	-0.238***	221
		(0.081)	(0.081)	(0.089)	(0.090)	
Number of individuals across all survey responses						588
Controls			Y		Y	
Sample	Full	Full	Full	100km	100km	Full

Notes: All dependent variables coded as binary indicators. Control variables are sex of the respondent, age, education, indicator for own or parent's experiences. The sample is restricted to individuals for whom the indicated identity of the occupying army matched the May 1945 location. Sample size differs as those indicating "not sure" are excluded in the analysis. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Source: Own survey

Table A.5: Population share by pre- and post-war place of residence in East Germany

	State of residence October 29, 1946				
	Brandenburg	Mecklenburg-Vorpommern	Saxony	Saxony-Anhalt	Thuringia
Place of residence September 1, 1939	(1)	(2)	(3)	(4)	(5)
Soviet Occupied Zone					
Brandenburg	**0.710**	0.007	0.003	0.009	0.005
Mecklenburg-Vorpommern	0.002	**0.533**	0.001	0.001	0.001
Saxony	0.003	0.002	**0.855**	0.008	0.010
Saxony Anhalt	0.003	0.001	0.002	**0.720**	0.006
Turingia	0.001	0.001	0.002	0.005	**0.739**
Berlin	0.053	0.012	0.005	0.018	0.015
Trizone	0.009	0.018	0.008	0.020	0.027
Former eastern territories of Germany					
East Prussia	0.021	0.088	0.014	0.023	0.024
Pommerania (east of river Oder)	0.028	0.159	0.003	0.013	0.008
Brandenburg (east of rivers Oder and Lusatian Neisse)	0.059	0.014	0.001	0.008	0.003
Silesia	0.048	0.027	0.075	0.062	0.066
Foreign countries					
Poland	0.027	0.024	0.004	0.019	0.008
Czechoslovakia	0.016	0.080	0.020	0.076	0.070
Soviet Union	0.001	0.001	0.000	0.001	0.000
Other foreign countries	0.013	0.032	0.005	0.015	0.013
Other	0.005	0.001	0.002	0.001	0.004

Notes: Table shows state of residence on October 20, 1946 by place of residence on September 1, 1939. For children born after September 1, 1939, the place of the residence of the parents is being used. Trizone refers to the American, British and French occupied zones. *Other* denotes that the 1939 location was not specified. Source: Census of the Soviet occupation zone from 1946.

Table A.6: Allied exposure and migration

	Share that lived in same state					
Mean of dep. variable	0.73	0.74	0.74	0.74	0.74	0.74
	(1)	(2)	(3)	(4)	(5)	(6)
Allied	0.021	-0.001	-0.003	-0.039	-0.012	-0.001
	(0.018)	(0.029)	(0.028)	(0.058)	(0.041)	(0.038)
Forcing variable $f(\mathbf{g}_i)$			Linear	Linear $\times$ Allied		
Border segment FEs					Y	Y
Controls						Y
Bandwidth	Full	50km	50km	50km	50km	50km
Observations	178	89	89	89	89	89

Notes: Units of observation are counties of the GDR of 1946. The dependent variable is the population share that lived in the same state on October 29, 1946 as on September 1, 1939. Source: Census of the German Occupied Zone from 1946. Border segment FEs consist of four equally large segments cut along the latitude of districts. Controls are distance to Berlin, distance to the inner German border and latitude / longitude. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A.7: 1989 protests and 1990 East German general election

	1989 protests		1990 vote share			
			PDS		Allianz	
Mean of dep. variable	0.20	0.20	0.11	0.11	0.55	0.55
	(1)	(2)	(3)	(4)	(5)	(6)
Allied	0.058	0.072	-0.004	-0.002	0.025	0.013
	(0.059)	(0.061)	(0.013)	(0.005)	(0.036)	(0.014)
	[0.052]	[0.056]	[0.011]	[0.005]	[0.026]	[0.012]
Forcing variable $f(\mathbf{g}_i)$	Linear × Allied					
Border segment FEs		Y		Y		Y
Full controls		Y		Y		Y
Sample	Population ≥ 1,000		Full			
Bandwidth	50km	50km	50km	50km	50km	50km
Observations	900	900	2,262	2,262	2,262	2,262

Notes: Units of observation are East German municipalities. Columns 1-2 restrict the sample to municipalities with a population ≥ 1,000 to make the sample comparable to the 1953 protest estimates in Table 3. Regressions in columns 3-6 are weighted by votes per municipality. PDS was the successor party of the SED, Allianz für Deutschland was an opposition coalition consisting of the parties CDU, DA and DSU. Standard errors clustered at the county level in parentheses. Conley standard errors in square brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A.8: Allied exposure and 1953 protest - Radio in the American Sector

	RIAS signal strength		Dependent variable: Presence of protest					
Mean of dep. variable	70.22	70.22	0.22	0.22	0.22	0.22	0.22	0.22
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Allied	0.530	0.250	0.142***	0.144***	0.169***	0.159***	0.155**	0.154**
	(1.151)	(0.857)	(0.050)	(0.050)	(0.061)	(0.060)	(0.061)	(0.061)
	[0.651]	[0.603]	[0.057]	[0.057]	[0.061]	[0.061]	[0.062]	[0.062]
RIAS signal strength			0.003	0.015	-0.019			-0.020
			(0.003)	(0.021)	(0.022)			(0.023)
			[0.003]	[0.023]	[0.026]			[0.025]
RIAS signal strength^2				-0.000	0.000			0.000
				(0.000)	(0.000)			(0.000)
				[0.000]	[0.000]			[0.000]
Signal strength (alt.)						0.001*	0.005	0.004
						(0.001)	(0.005)	(0.005)
						[0.001]	[0.005]	[0.005]
Signal strength (alt.)^2							-0.000	-0.000
							(0.000)	(0.000)
							[0.000]	[0.000]
Distance to Berlin (km)		-0.078***			-0.003**	-0.002**	-0.002**	-0.003**
		(0.028)			(0.001)	(0.001)	(0.001)	(0.001)
		[0.016]			[0.002]	[0.001]	[0.001]	[0.002]
Forcing variable $f(\mathbf{g}_i)$				Linear $\times$ Allied				
Border segment FEs	Y	Y	Y	Y	Y	Y	Y	Y
Full controls		Y				Y	Y	Y	Y
Sample				Pop. $\geq$ 1,000				
Bandwidth	50km	50km	50km	50km	50km	50km	50km	50km
Observations	968	968	968	968	968	968	968	968

Notes: Units of observation are all East German municipalities with a population above 1,000. The dependent variable in columns 1-2 is the signal strength of the Radio in the American Sector (RIAS) and in columns 3-8 an indicator for the occurrence of protests during the 1953 uprising. Protest data and RIAS signal strength at the municipality level from Crabtree et al. (2018). The alternative signal strength indicator stems from 222 cities in East Germany and are merged by nearest neighbour matching. Controls are all municipality-level variables of Table 1 (Panel B), and latitude / longitude. Standard errors clustered at the county-level in parentheses. Conley standard errors in square brackets. *** p<0.01, ** p<0.05, * p<0.1

Table A.9: Outcome of the 1946 State elections around the *Line of Contact*

Dependent variable:	SED vote share					Turnout	Invalid
Mean of dep. var.	0.428	0.428	0.394	0.394	0.394	0.937	0.076
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Allied	-0.032	-0.049**	-0.036	-0.028**	-0.030**	-0.016**	-0.004
	(0.024)	(0.025)	(0.023)	(0.014)	(0.013)	(0.007)	(0.004)
	[0.022]	[0.023]	[0.021]	[0.012]	[0.011]	[0.006]	[0.003]
Forcing variable $f(\mathbf{g}_i)$	Linear	Linear $\times$ Allied					
Border segment FEs				Y	Y	Y	Y
Full controls					Y	Y	Y
Sample	Pop. $\geq$ 1,000		All municipalities				
Bandwidth	50km	50km	50km	50km	50km	50km	50km
Observations	1,168	1,168	5,649	5,649	5,649	5,649	5,649

Notes: Units of observation are East German municipalities in 1946. Dependent variable in columns 1-5 is the vote share of the Socialist Unity Party of Germany (SED) in the 1946 State elections in the Soviet occupation zone. Turnout (column 6) is the share of cast votes (valid and invalid) and Invalid (column 7) denotes the share of invalid votes. All outcomes calculated as shares of the eligible population. Border segment FEs correspond to ten equally large segments of the distribution of latitudes of municipalities in the 50 km bandwidth around the line of contact. Controls are latitude, longitude and all municipality-level variables of Table 1 (Panel B). Regressions are weighted by the eligible voting population. Standard errors clustered at the county level in parentheses. Conley standard errors in square brackets. *** p<0.01, ** p<0.05, * p<0.1

B   Establishing the line of contact

To identify the line that separates the area occupied by the Western Allies within East Germany at the end of WWII from that occupied by the Red Army, the line of contact, we consulted several sources. We studied the following accounts of the final days of the war: Ambrose (2000); Beevor (2002); Jones (2015); MacDonald (1993); Toland (2003). Particularly helpful was MacDonald (1993), as it not only contains a detailed account of the military moves of the allies, but it also includes a series of maps that document specific operations and an appendix with what appear to be official maps tracking the frontline at various locations and points in time. We extracted information from the daily communiqués by the Supreme Headquarters Allied Expeditionary Force (SHAEF), which provide daily updates on allied operations in the western front.[47] In some cases, we additionally conducted web searches of specific military units that seemed to have been present in areas where the other sources proved unsatisfactory.[48] Finally, we also used the following Atlases of the second world war: U.S. Army (1945); Natkiel (1985); Pimlott (1995); Badsey (2000); Gilbert (2008).

For the most part, all sources agree on the location of the line of contact. From north to south, it starts at Wismar on the Baltic and goes down Mecklenburg-Vorpommen (through Schwerin and Ludwiglust) up to Domitz on the Elbe. It then follows the Elbe from Domitz up to Dessau-Roßlau at the intersection with the Mulde and follows the Mulde up to Lunzenau. The last segment (stretching from Lunzenau to a point on the Czech border) was the most challenging to pin down, as it is either not shown in some maps (e.g. Pimlott, 1995; Badsey, 2000) or includes too few reference points, such as cities (e.g. U.S. Army, 1945; Natkiel, 1985). Our reconstruction of this segment is mainly based on the location of the easternmost cities in which the SHAEF communiqués confirmed allied presence. Additionally, we conducted desk research by consulting accounts of contemporary witnesses and other sources such as city websites indicating the identity of the occupying force to pin down the easternmost Allied occupied cities in this segment. From Lunzenau to the Czech border, those are Limbach-Oberfrohna, Lichtenstein, Wilkau-Haßlau, Lichteinstein, Auerbach (Vogtland) and Klingenthal.

Having established the location of the line of contact, we assigned the identity of the initial occupying force at the municipality-level. Our main outcomes are all based on

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[47]Consulted in March, 2020 at `https://lib.byu.edu/collections/eisenhower-communiques`

[48]For example, the document "The Mass Surrender of German Troops to the 347th Infantry Regiment on May 6, 1945," consulted in March 2020 at `http://87thinfantrydivision.com/tom-stafford/the-mass-surrender-of-german-troops-to-the-347th-infantry-regiment-on-may-6-1945` was very useful in establishing allied presence in the state of Saxony.

this fine-grained assignment of the "treatment". Migration patterns in the 1946 census (Appendix Table A.5 and Appendix Table A.6) are only availability at the county-level. As the line of contact played no role in administrative boundaries defined afterwards, a few counties are crossed by the line (predominantly in Saxony, where larger parts of the line are not defined by rivers). We assign these counties to be either Allied or Soviet occupied according to the predominant area or population share assigned to either side. We check the robustness of the results to the exclusion of these "divided" counties.

C Survey

C.1 Survey design and implementation

To complement our findings and to gain a deeper understanding of the mechanisms at play, we ran our own survey in spring 2020 using a professional survey company. The company keeps a large pool of pre-selected respondents who have agreed to be contacted for research purposes.

Targeting individuals among the cohorts who experienced the end of World War II in 2020 is challenging due to attrition and the lower willingness of older individuals to participate in voluntary pools for online surveys. We thus designed the survey to both include first-hand and second-hand accounts of the experience in 1945. We do so by restricting the targeted population to individuals who are aged 60 or older in 2020. To ensure we identify individuals who either have first-hand or second-hand accounts of the occupation in East Germany, we further restrict the sample to those who either themselves lived in East Germany in 1945, or whose parents lived in East Germany in 1945. The main parent we focus on for second-hand accounts is the mother, as fathers were often absent due to combat-related activities. To maximize the sample, we targeted the entire pool of available respondents in the appropriate cohorts. The survey collected basic demographics, their location at the end of the war and recollections of the occupation period in 1945. The survey was designed to be short, taking about 16 minutes to complete on average.

Appendix Table A.3 shows basic socio-demographic information. For comparison, we also report the same average characteristics for a representative sample of individuals older than 60 living in East Germany based on the German Socioeconomic Panel (Goebel et al., 2019). Our survey population is slightly younger as the relevant East German population and, as expected given the targeting, on average higher educated. The distribution of states of residence matches reasonably well. Despite our attempts to maximize the sample of first-hand accounts, the majority of respondents are second hand accounts. In our final sample, 68% of the observations stem from second-hand accounts from the mothers, 28% from fathers and only 3% from first hand accounts. Our results are robust to holding constant these differences using respondent type fixed effects.

A second challenge to such a retrospective survey is recall bias. Recollections from a period of upheaval may be particularly blurry, and second-hand accounts may be less reliable due to parents' reluctance to share often traumatic experiences. In our

context, there are two particular challenges: first, respondents may not correctly recall the initial occupation of the Allied forces due to the short-lived nature. We thus cross-check the responses by geolocating the reported residence at the end of the war. The final sample only included individuals who provided accurate responses pertaining the initial occupying force's identity (66%). Second, respondents may not be certain about specific details. To capture this, the survey explicitly allowed respondents to state that they are unsure about certain events. We exclude individuals who provide responses that they are uncertain about.[49] We follow the same procedure when we analyze the change of occupying army, i.e. we restrict the sample to individuals who at that time lived in Allied occupied territory and correctly identify the Red Army as the new occupying army (see Appendix Figure A.11).

C.2 Full wording of questions (translated)

Survey questions shown in Figure 6
   Panel a:

- How was the arrival of the occupying army perceived by the population in your [or your parent's] place of residence?

   - (1) Very positive (2) A bit positive (3) Neutral (4) A bit negative (5) Very negative (6) Not sure

      * Coded as positive if *very positive* or *a bit positive* is indicated

- Did the occupying army distribute food?

   - (1) Yes (2) No (3) Not sure

- Did the occupying army distribute medicine / care for the injured?

   - (1) Yes (2) No (3) Not sure

- Did the occupying army mediate conflicts / enforce justice?

   - (1) Yes (2) No (3) Not sure

- Did the occupying army conduct misbehavior?

   - (1) Yes (2) No (3) Not sure

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[49]We do not find that the propensity to be uncertain varies significantly across the line of contact. The results are robust to coding unsure responses as negative responses.

Panel b:

- How was the change of the occupying army perceived?

    - (1) Very positive (2) A bit positive (3) Neutral (4) A bit negative (5) Very negative (6) Not sure

        * Coded as negative if *very negative* or *a bit negative* is indicated

- Did the new occupying army distributed food?

    - (1) Less than before (2) More than before (3) Not sure

- Did the new occupying army distributed medicine / care for the injured?

    - (1) Less than before (2) More than before (3) Not sure

- Did the new occupying army mediate conflicts / enforce justice?

    - (1) Less than before (2) More than before (3) Not sure

- Did the new occupying army conduct misbehavior?

    - (1) Less than before (2) More than before (3) Not sure