

Stalin's Terror and the Long-Term Political Effects of Mass Repression

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Abstract

Can the effect of repression endure for multiple generations and erode trust in future political institutions? Yes. We examine the impact of Stalin's Great Terror on political participation in contemporary Russia. Using millions of arrest records from archival documents, we construct local measures of repression and match them to precinct-level data on voting in national elections between 2003-2012. To identify the effect of repression on voting, we use an instrumental variable design, exploiting exogenous variation in Soviet repression due to the structure of mid-century Soviet railroads, and travel distances from each locality to Gulag camps. We find that communities more heavily repressed under Stalin are significantly less likely to vote in Russian elections today. These results challenge emerging findings that exposure to violence has positive effects on political participation.

Reflecting on his years in correctional labor camps, Soviet writer and dissident Varlam Shalamov said, “He who has been there will never forget” (Hosking, 1991). Between 1929 and 1953, the Soviet secret police sent an estimated 15 million citizens to prison camps (Conquest, 1997). The number of inmates increased from 400,000 in 1929 (Ivanova, 2000) to 2.5 million in the early 1950s (Gregory and Lazarev, 2013). The Gulag – an acronym for “Main Directorate of Corrective Labor Camps and Labor Settlements” – was among the defining institutions of the USSR (Adler, 2005). Millions experienced the camps first hand, but many more felt their impact indirectly – through disappearances of friends, neighbors, and the transformation of their communities. Yet we know little about the long-term legacy of Stalin’s terror, particularly whether communities repressed and uprooted generations ago are more or less likely to be politically active today.

In this article, we empirically examine the effect of Stalin’s terror on political participation in contemporary Russia. Using arrest records from the archival data of the non-profit organization “Memorial,” we construct local measures of repression and match them to precinct-level data on voting in Russian national elections in 2003-2012. We find that communities more heavily repressed under Stalin are significantly less likely to vote today, compared to nearby communities historically less exposed to state terror.

By itself, a negative correlation is insufficient to demonstrate that the terror effect is causal. Previous literature on the repression-dissent nexus suggests that behavioral challenges consistently increase state repressive actions (Davenport, 1995; Gartner and Regan, 1996; Poe and Tate, 1994). It is possible that Soviet authorities repressed heavily in areas that stood in opposition to the federal government, and these initially restive communities continue to mistrust Moscow today. To address this concern, we use an instrumental variable design exploiting the structure of mid-century Soviet railroads, and travel distance to Gulag camps. The results confirm that exposure to repression had a long-term negative effect on participation. In 2012, this effect was equivalent to an 8.5 percent drop in local turnout.

These findings make several novel contributions to research on political violence (Kalyvas, 2006; Lyall, 2009), repression (Mason and Krane, 1989; Davenport, 2007), and voting (Colton and Hale, 2009; Treisman, 2011). First, our results challenge recent findings on the positive consequences of state repression for political participation (Bellows and Miguel, 2009; Blattman, 2009; Bateson, 2012; Bratton and Masunungure, 2007; Wood, 2003). Second, while past research has focused mainly on the short-term effects of repression over several months or years (Almeida, 2003; Boswell and Dixon, 1990; Davenport, 2007; Gurr and Moore, 1997; Jenkins and Schock, 2003; White, 1993), we show that these effects may be durable over multiple generations, sowing long-term distrust of political institutions. Third, we extend the empirical scope of this emerging research program away from low-intensity violence by non-state actors or weak states – the focus of most previous research – and toward the (very different) political legacy of mass repression by strong regimes.

In the remainder of this article, we briefly review past research on violence and political participation, and offer some historical background on Stalin’s terror. We then introduce our archival data and empirical strategy, and report the results of our statistical analyses. We consider several alternative explanations, and potential mechanisms driving our results. We conclude with a summary of findings and directions for future research.

REPRESSION AND POLITICAL PARTICIPATION

The question of ‘who participates’ in politics matters greatly for public policy and democratic development, because it shapes the set of preferences and opinions to which the government responds.¹ Even in non-democratic

¹We define *participation* as “actions aimed at influencing the selection of government personnel and/or the actions they take” (Verba and Nie, 1972, 2). While this definition potentially includes protest activity and insurrection, we focus more narrowly on activities “within the system,” like participation in the electoral process and voting in particular.

states, regimes often look to the electoral process as a source of legitimacy (Schedler, 2006; Waterbury, 1999) and corrective feedback (Ames, 1970; Brownlee, 2007; Magaloni, 2006). To the extent that state repression might shape the makeup of an electorate – determining who votes and who stays at home – the electoral legacy of violence is of great importance for the theory and practice of government.²

The political effect of repression has been a matter of some debate. A growing number of recent studies have found that violence increases political engagement and trust in state institutions (Bellows and Miguel, 2009; Blattman, 2009; Bratton and Masunungure, 2007; García-Ponce and Pasquale, 2015). Leading explanations for this effect have included backlash mobilization, where communities react to violence by aligning with the perpetrator's opponent (Francisco, 2004), and substitution effects, where victims channel their resistance into non-violent forms of contestation (Lichbach, 1987). More recent studies have emphasized 'post-traumatic growth,' where exposure to violence yields psychological effects that increase social cohesion, trust and collective coping (Tedeschi and Calhoun, 2004; Blattman, 2009; Gilligan, Pasquale and Samii, 2014). Other explanations include expressive participation, where voting becomes an outlet for trauma victims to regain a sense of empowerment (Schuessler, 2000; Bateson, 2012).

A smaller body of research argues that exposure to violence reduces participation in politics (Bautista, 2015; Booth and Richard, 1996; García, 2010; Gutiérrez, 2014). The most common explanation here is preference falsification (Kuran, 1997). According to this view, citizens recently exposed to violence are less likely to publicly reveal their true political preferences, due to fears of renewed violence (Bautista, 2015; García-Ponce and Pasquale, 2015). This preference falsification can take several forms. In the extreme, a repressed individual may publicly express preferences directly

²We define *repression* as the use of "physical sanctions against an individual or organization, within the territorial jurisdiction of the state, for the purpose of imposing a cost on the target as well as deterring specific activities and/or beliefs perceived to be challenging to government personnel, practices or institutions" (Davenport, 2007).

at odds with one's own – for instance, by voting against one's preferred candidate. A softer form of preference falsification might be to avoid expressing one's preferences altogether – by not voting or feigning apathy.

While our understanding of the political legacy of violence has evolved tremendously in recent years, the current paper addresses two significant limitations in the literature. First, previous research considers mainly the short-term impact of violence. Yet recent efforts have shown that repression may have intergenerational effects ([García-Ponce and Wantchekon, 2011](#); [Goldstein, 2013](#)), both for direct victims ([Lupu and Peisakhin, 2016](#); [Acemoglu, Hassan and Robinson, 2011](#)) and for community members not directly exposed ([Rozenas, Schutte and Zhukov, 2016](#)). There are several reasons why we might expect long-term outcomes to differ from short-term ones. As the threat of violence becomes less imminent, incentives for preference falsification are likely to decline. Over time, shared experiences of violence may also coalesce into lasting narratives of group victimization, with parents and community members acting as agents of socialization ([Bautista, 2015](#); [Rozenas, Schutte and Zhukov, 2016](#)). Both of these forces are likely to amplify political participation in the long run.

A second shortcoming of existing research is its empirical scope: with few exceptions, most of the literature has examined the political consequences of relatively sporadic, low-intensity violence by non-state actors ([Blattman, 2009](#); [Bellows and Miguel, 2009](#)), criminal gangs ([Bateson, 2012](#)) or the security forces of weak, developing states ([García-Ponce and Pasquale, 2015](#)). We know far less about the political legacy of repression by strong governments, who are able to conduct violence on a more massive scale, and sustain it for longer periods of time. Rather than being simply an event or temporary spell, repression in the latter case becomes an institution – optimized to suppress political participation in the long run.

We build on this previous work in three ways. First, by demonstrating that repression can resonate across generations – and, indeed, across changes of political regime – we show that the short term effects of violence

at the center of civil conflict research are part of a longer political story.

Second, by extending the time horizon and geographic scope of this emerging research program, we show that evidence for a positive relationship between repression and voting may not extend to strong, autocratic regimes. Indeed, we find that Soviet-era repression has had an enduring, negative impact on political participation in contemporary Russia.

Finally, our findings answer a lingering “so what” question in political science research on historical episodes of violence. As we show, long-ago violent events are important for political science today because they persistently shape political participation and preferences.

HISTORY OF SOVIET REPRESSION

What made Soviet state terror distinctive was its scale. Based just on the size of its population, the Soviet Gulag system – comprising regular and special prisons, filtration camps, POW camps, corrective labor colonies, special settlements, and scientific prisons (Barnes, 2011) – was about twenty-five times larger than its counterpart in Nazi Germany.³ Gulag inmates were people of disparate political beliefs, social positions, nationalities, age groups and occupations (Goldman, 2011). The state targeted many of these individuals due to their social class (e.g. *de-kulakization* campaign against wealthy peasants), ethnicity (e.g. ‘national operations’ against ethnic Poles, Germans, Chechens), or perceived political loyalty (e.g. purges of the Communist Party and military officer corps). Countless others landed in the camps simply because their neighbors or co-workers had accused them of counterrevolutionary activity or beliefs.

A typical case would begin with the detention of a person for the pur-

³The number of inmates in Soviet concentration camps reached well over a million in 1938 as compared to the German concentration camps that held 20,000 German citizens at the time (Snyder, 2012). The quantity of camps grew in tandem with the number of inmates, increasing from fifteen in 1932 to seventy-six in 1941 and to one hundred fifty-eight in 1953 (Gregory and Lazarev, 2013; Ivanova, 2000).

pose of interrogation, followed by an expedited trial and conviction by a “special troika” – comprising an NKVD officer, party secretary and prosecutor – and transfer to a labor camp or colony. According to a 1953 statistical report, of 1.5 million individuals the NKVD arrested in 1937-1938, troikas convicted 85.4 percent.⁴ During this period, average life expectancy in the Gulag was between two and five years, despite an average length of sentence of 10-25 years (Adler, 1958; Brunet, 1993). This high mortality was a consequence of the camps’ environment, particularly harsh climate, malnutrition, and 12-14 hour daily heavy labor shifts – on railroad and canal construction works, gold, metal and coal mining, logging and other engineering projects (Rummel, 1996). At its peak, the Gulag accounted for two percent of all laborers in the Soviet Union (Gregory and Lazarev, 2013).

Those fortunate enough to survive the Gulag returned to a life of permanent political disenfranchisement and social alienation (Bahry and Silver, 1987). Although by 1960 amnesty commissions rehabilitated over 715,120 victims, many of them were no longer alive (Dobson, 2009).

Many of the punishments that befell Soviet political prisoners also extended to their family members. The wives, children and siblings of those convicted as ‘traitors of the Motherland’ were subject to prosecution and imprisonment under Article 58 of the Soviet criminal code and NKVD Order 00486. Children of the repressed automatically lost voting rights, paid higher taxes, and had difficulty obtaining university education and professional advancement in most industries (Rusina, 2009).

After Stalin’s death in 1953, the new General Secretary of the Central Committee Nikita Khrushchev condemned Stalin’s repressive policies and denounced his “cult of personality.” Soviet authorities dismantled the Gulag labor camp system, renamed cities and landmarks bearing Stalin’s name, and removed references to Stalin from the Soviet national anthem.

⁴Only 2.1 percent of all sentenced in this period were exiled (Getty, Rittersporn and Zemskov, 1993). More than half a million of those indicted were executed, with the rate of daily executions reaching a thousand in Moscow alone (Medvedev and Shriver, 1989).

These political reforms were short-lived, and repression re-emerged under Khrushchev's successor Leonid Brezhnev (Tompson, 2014). Brezhnev praised Stalin's war record, promoted Stalin's generals and purged the institutions of the intelligentsia. This reversal reached its height in the late 1960s and early 1970s, with the emigration or exile of numerous Soviet academics and writers (Adler, 2010; Abraham and Kochan, 1983).

The political legacy of Stalin's repression in contemporary Russia is ambiguous. The post-Soviet period witnessed some coming to terms with the terror (Murphy, 2006). The KGB archives opened their doors to the public in the early 1990s. In October 1991, the Supreme Soviet of the Russian Federation decreed October 30 to be Memorial Day for victims of the terror, and established a Presidential Commission for the Rehabilitation of Victims of Political Repression. Multiple monuments to political prisoners appeared across the country, with state financial support.

Since Vladimir Putin's ascendance to power in 1999, Russia has seen a gradual restoration of Soviet symbols. On the tenth anniversary of the USSR's collapse, the Russian Duma voted overwhelmingly to restore the Soviet national anthem, albeit with different lyrics, and restore a modified Soviet banner as the official flag of the armed forces (Baker and Glasser, 2005). In 2007 and 2008, a new teachers' manual called Stalin an "effective manager," and an updated school history textbook depicted the Great Terror as a rational economic necessity (Korostelina, 2010). In June 2015, the Moscow City Legislature voted to restore a statue of Feliks Dzerzhinsky, founding director of the Soviet secret police, to its former location before the FSB Headquarters in Lubyanka Square (Harvey and Sanaei, 2015). Similar initiatives have proliferated at the local level, with regional and municipal officials eager to signal their own patriotism through Soviet nostalgia.

Social science research on the political effects of Soviet repression is limited. Several macro-level studies have found that communist rule – though not repression specifically – can have lasting effects on political preferences and behavior (Pacek, Pop-Eleches and Tucker, 2009; Pop-Eleches and

[Tucker, 2011](#)). A handful of papers have more directly studied the legacy of repression in Russia, but mostly on support for communism, rather than political participation in general. Evidence on this relationship has been mixed, ranging from decreases in support for communist ideas and trust in central authority ([Kapelko, Markevich and Zhuravskaya, 2010](#); [Levkin, 2014](#)) to a null effect on loyalty toward the Communist Party ([Adler, 2010](#)). A few recent studies have found reduced support for pro-Russian political parties among repressed communities and individuals in other ex-Soviet states ([Lupu and Peisakhin, 2016](#); [Rozenas, Schutte and Zhukov, 2016](#)). Although this literature has yielded preliminary evidence of long-term political backlash from Soviet repression, the effect of this repression on political participation in Russia – the legal successor to the Soviet state, and home to the majority of its victims and their families – remains largely unknown.

DATA

In the remainder of this article, we examine the effect of Stalin’s terror on political participation in contemporary Russia. To investigate this relationship, we draw on several types of data, including declassified archival materials released by the Moscow-based NGO Memorial, Soviet administrative documents, and polling station-level statistics on voter turnout.

Our data on the local intensity of Soviet repression draw on Memorial’s ‘Victims of Political Terror’ archive ([Memorial, 2014](#)). In development since 1989, this resource relies on regional interior ministry archival materials and the individual reports and memoirs of Gulag survivors ([Memorial, 2014](#)). The Memorial archive is the single most comprehensive open source of information available on the victims of Stalin-era repression, with over 2.65 million records of individuals executed, exiled and sent to forced labor camps by the secret police. Individual records include biographical data, education level, nationality, employment records, orders for arrest, sentences, death certificates and information on release and rehabilitation.

The original sources of these records are Russian Interior Ministry documents, declassified and released by the State Archive of the Russian Federation, regional archives, the Moscow Prosecutor’s Office, and the Commission for the Rehabilitation of Victims of Political Repression. Other sources include newspapers, regional human-rights NGOs, “Memory Books,” and individual materials from survivors and their families. We provide a comprehensive list of these sources in the Supplemental Appendix (Table 1).

While it is the largest database on Soviet terror that currently exists, Memorial’s archive still accounts for only 20 percent of the total victims of repression in the USSR. Notably under-represented are former Soviet republics other than Russia.⁵ Because these data comprise only individual arrests, they also exclude victims of Soviet famine, and the mass resettlement of Chechens, Crimean Tatars and other ethnic groups in World War II. This limitation narrows our scope to a particular form of state repression – the persecution of individuals for alleged political dissent – rather than the broader effects of Soviet social engineering and ethnic cleansing.

We geocoded the victims’ pre-arrest residential addresses and classified each record by sentence, nationality, profession, and whether the subject subsequently received amnesty. Where addresses were missing, we used locations of birth. We were able to geocode 2.3 million (87 percent) records to the municipal or district level, using APIs from Google and Yandex.

For data on voting, we rely on polling-station level results released by Russia’s Central Election Commission. These include vote shares and turnout statistics for the 2003, 2007 and 2011 Duma (parliament) elections, and the 2004, 2008 and 2012 presidential elections. We geocoded the physical address of each polling station, using the same APIs as above.

The challenge of matching the locations of arrests to polling stations is that Russia’s contemporary administrative boundaries do not always align

⁵90 percent of Memorial’s entries reflect repressions carried out on the territories of present-day Russia. Remaining documents are from Kazakhstan (100,000), Belarus (80,000), Ukraine (40,000), Kyrgyzstan (12,000) and Uzbekistan (8,000) ([Memorial, 2014](#)).

with earlier, Soviet ones. As a result, many locations have changed jurisdiction over time. We addressed this issue in two ways. First, we created synthetic geographic units, based on a uniform 25×25 km² grid. The advantage of this approach is that the locations of unit boundaries are exogenous and constant over time. Second, we replicated all analyses with units based on contemporary Russian district (*rayon*) borders. These results, omitted here for space, were substantively the same.

For each geographical unit, we calculated the total number of individuals Soviet authorities arrested and sent to the Gulag (normalized by area of territory). We also tallied the proportion of local eligible voters who cast a ballot in the six national elections, and vote shares received by each candidate and party. The maps in Figure 1 show the geographic distribution of (a) Soviet repression and (b) voter turnout in 2012.

To measure the logistical costs of resettlement, we use data on the topography of mid-century Soviet railroads ([Main Military Communications Directorate of the Red Army, 1943](#)), the locations of 618 major Soviet railroad junctions, travel distances between them ([Military-Topographical Directorate of the General Staff of the Red Army, 1945](#)), and the locations of Gulag camps ([Smirnov, 1998](#)). We also collected data on other factors affecting voting, including local ethnicity (based on the 1964 Soviet *Atlas Narodov Mira*), population density, terrain, and economics. Table 1 reports summary statistics, with additional details in the Appendix (Tables 1-4).

Before we proceed to the analysis, there are several potential sources of error to consider. The first is related to our substitution of locations at the time of arrest with birth locations, where residential address information is missing. Birth locations are not necessarily same as arrest sites and, given the vast Soviet landscape, distances between them can be great. Although a problem for geocoding accuracy, these more tenuous links between birth and arrest locations should bias our results toward zero – since repression’s impact on birth communities should in theory be more indirect.

The second potential source of error is Memorial’s occasionally impre-

cise and inconsistent recording of place names. While, in general, the archive lists addresses at the village, district, and province levels, in some cases, one or two of these may be missing. In addition, the territorial-administrative division of the Russian Federation has changed from that of its Soviet predecessor, as have the names of many municipalities. To identify and correct systematic geocoding errors, we iteratively took random subsets of the arrest data, manually compared geocoded locations to original records, and cross-checked them against a list of name changes from Soviet administrative documents and directories ([Presidium of Supreme Soviet of USSR, Information-Statistical Division, 1941/1946/1954](#)).

A third complicating factor is migration. Many decades separate contemporary voting from Stalin-era repression, and – in the intervening period – the communities historically exposed to violence have seen vast demographic changes. We cannot assume that the people who now live in these communities are necessarily descendants of those repressed under Stalin. While there is little we can do to empirically address it, migration is not as critical a barrier to inference as one may initially assume. Voluntary population movement was severely limited in Soviet times, after the institution of internal passports and residency permits (*propiski*) in 1932. These permits, which local police issued on a limited basis, tied Soviet citizens to “permanent places of residence.” Soviet law proscribed individuals from seeking housing, employment and education where they had no such permit, under penalty of a fine and up to two years in prison.

To the extent that significant migration did take place – either voluntarily in the post-Soviet period, or as a direct result of displacement and arrests – the direction of this bias is likely toward zero. The intuition here is straightforward: if the people currently residing in these communities have fewer personal or family connections to those who witnessed Soviet repression first hand, the effect of Soviet repression on the population’s contemporary political participation should be weaker.

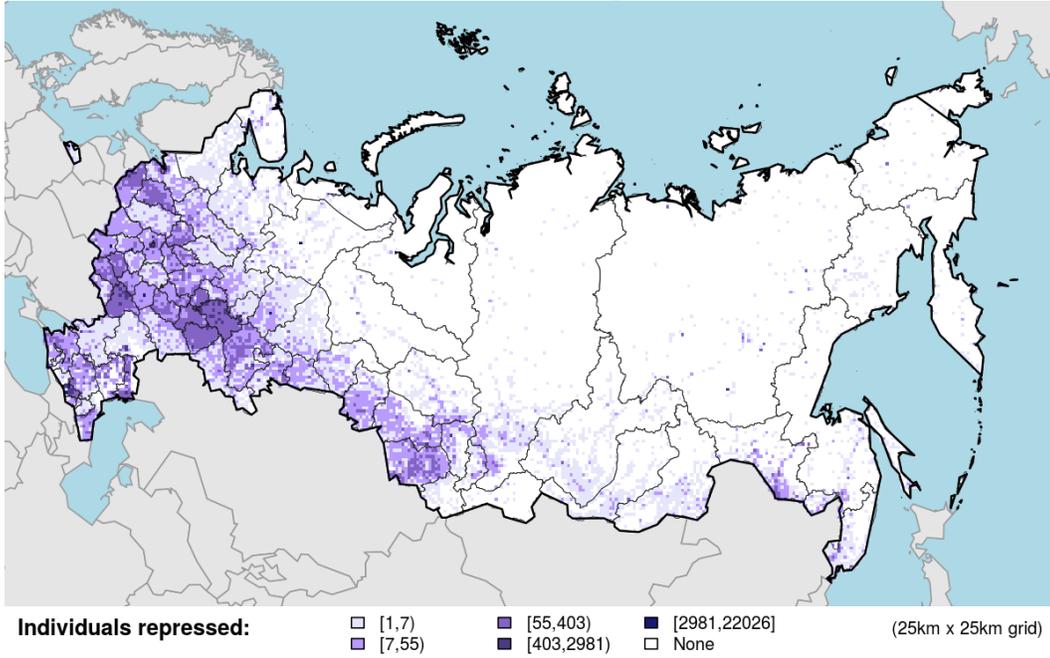
Table 1: SUMMARY STATISTICS (25×25 km² grid)

Name	Mean	Median	Std.Dev.	Range	N	Source
<i>Stalin-era repression</i>						
Resettled (per cell)	34.16	4.00	235.41	[0, 13630]	8,336	Memorial
Nearest station (km)	765.08	436.63	790.64	[0, 3533.4]	29,279	GSRA
Nearest railroad (km)	753.52	432.10	799.98	[0, 3533.4]	29,279	GSRA
Distance to Gulag (km)	387.60	245.95	836.32	[4.9, 22562.8]	8,336	GSRA & Memorial
<i>Contemporary voting</i>						
Turnout (2003)	0.64	0.63	0.13	[0.3, 1]	7,126	CEC RF
Turnout (2004)	0.73	0.73	0.13	[0.3, 1]	7,134	CEC RF
Turnout (2007)	0.72	0.71	0.13	[0.3, 1]	7,695	CEC RF
Turnout (2008)	0.78	0.79	0.12	[0.3, 1]	7,234	CEC RF
Turnout (2011)	0.66	0.65	0.15	[0.2, 1]	8,065	CEC RF
Turnout (2012)	0.70	0.68	0.13	[0.3, 1]	8,076	CEC RF
<i>Covariates</i>						
Mean elevation (m)	357.17	197.30	405.62	[-2633.1, 3212.4]	29,279	ETOPO30
Num. ethnic groups (1964)	1.28	1.00	0.61	[0, 7]	29,279	GREG
Proportion Russian (1964)	0.38	0.00	0.43	[0, 1]	28,382	GREG
Pop. density (2000)	8.42	0.36	78.49	[0, 6147.7]	29,191	GPW
Unemployed (2003)	9.61	9.45	2.89	[1.3, 55.8]	25,796	Rosstat
GRP (2003)	139.53	114.90	133.03	[3.8, 960]	29,222	Rosstat
Unemployed (2004)	8.80	8.82	2.92	[1.6, 43.5]	25,796	Rosstat
GRP (2004)	169.73	133.10	168.04	[4.8, 1194.1]	29,222	Rosstat
Unemployed (2007)	7.21	7.60	2.99	[0.8, 52.5]	25,836	Rosstat
GRP (2007)	322.12	205.80	370.94	[8.6, 5145.9]	29,279	Rosstat
Unemployed (2008)	7.70	7.35	2.48	[0.9, 53.3]	25,836	Rosstat
GRP (2008)	392.17	246.50	412.08	[14.8, 6731.2]	28,660	Rosstat
Unemployed (2011)	7.44	6.89	2.34	[1.4, 48.1]	25,836	Rosstat
GRP (2011)	531.98	384.70	500.72	[21.5, 8401.9]	28,660	Rosstat
Unemployed (2012)	6.56	6.23	2.23	[0.8, 47.7]	25,836	Rosstat
GRP (2012)	635.38	483.00	603.81	[26.1, 10021.5]	28,660	Rosstat

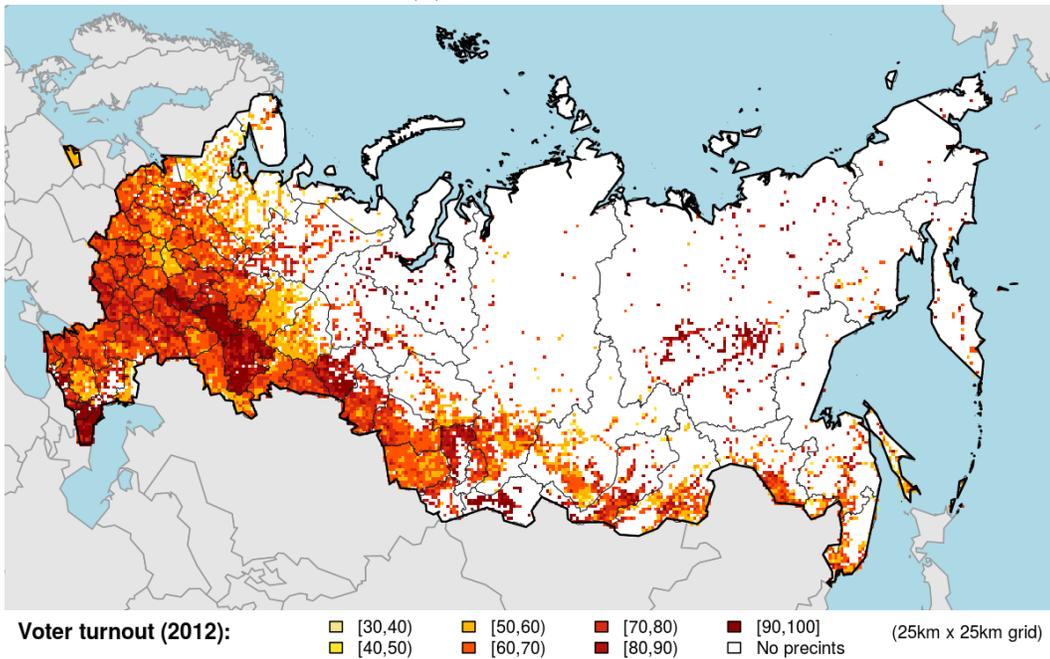
Memorial: Memorial (2014); Smirnov (1998); GSRA: Main Military Communications Directorate of the Red Army (1943); Military-Topographical Directorate of the General Staff of the Red Army (1945); CEC RF: Central Election Commission of the Russian Federation (2003-2012); GTOPO30: U.S. Geological Survey (1996); GREG: Weidmann, Rød and Cederman (2010); GPW: CIESIN and Columbia University (2005); Rosstat: *Russia in Figures: Statistical Handbook* (2004-2012)

Figure 1: DISTRIBUTION OF SOVIET REPRESSION AND POLITICAL PARTICIPATION.

(a) Scale of Soviet repression.



(b) Voter turnout.



DATA ANALYSIS

Empirically identifying the effect of repression on voting is challenging. It is possible that Soviet authorities were more likely to repress in areas that were already mistrustful of state institutions, and these areas continue to mistrust the government today. To address this concern, we use the structure of mid-century Soviet railroads, and particularly travel distances to Gulags, as instruments for resettlement. Although ironclad causal identification is virtually impossible in this kind of work, the goal of our analysis is to show – at the very least – that the relationship is not spurious.

RAILROADS AND THE LOGISTICS OF STALIN’S TERROR

To obtain an unbiased and consistent estimate of the effect of mass terror, we exploit exogenous variation in repression due to access to mid-century Soviet railroads and travel distance to the nearest Gulag camp. Repression on an industrial scale is not possible without the means to transport prisoners. In the course of Stalin’s three waves of terror, the NKVD relocated millions of Soviet citizens from their homes to often-remote labor camps. Railroads were the primary means by which they did so ([Kokurin and Petrov 2000](#), 525, [Conquest 2008](#), 311, [Snyder 2012](#), 137).

Figure 2 shows the structure of the Soviet railroad network in 1945 – the earliest year for which we were able to find detailed data on stations, routes and travel distances. The map also displays arrest locations (points), rail stations (squares), and the locations of Gulag camps (triangles). We use these data to construct three instrumental variables for repression: (1) the Euclidean travel distance from each locality to the nearest rail station, or (2) nearest point on the railway line, and (3) the travel distance to the median Gulag camp. Since most arrest sites and Gulags were not directly adjacent to the railroad, we calculated distances to Gulags as the sum of the Euclidean distance from arrest site to the nearest rail line, the railroad travel

distance from there to the point on the network closest to the Gulag, and the Euclidean distance from the second point on the railroad to the Gulag.

An underlying assumption behind our first two instrumental variables is that the proximity of railroads influenced the local supply of Gulag prisoners, but the supply of prisoners did not influence railroad access. On a historical level, this assumption is not unreasonable: the bulk of the Soviet railroad system was in place before Stalin rose to power. The Trans-Siberian railway was built between 1891 and 1916, initially for the purpose of transporting grain to markets in the West, and later to facilitate eastward migration, military mobilization and resupply. The construction of other key arteries, like the Moscow-St. Petersburg line and the Baikal-Amur line in eastern Siberia, also began in the 1800's. Rail construction continued in Soviet times, but its focus was primarily on expanding the capacity of existing major routes. Because railways facilitated mass movement, they were instrumental in the growth of the Gulag system. The network structure, however, predated the Gulags by several decades.

Another assumption, which motivates our use of distance to Gulags as an instrumental variable, is that prisoners' destination locations influenced their locations of origin, but not the other way around. If Soviet authorities purposefully built the camps in close proximity to population centers, the instrumental variable would not be valid. This scenario, however, is at odds with both anecdotal and statistical evidence. Many camps were so remote that they lacked fences – an unnecessary investment in the Taiga and Siberian wilderness, where prisoners had nowhere to run for hundreds of miles. There is also little to suggest that labor camps were any closer to population centers than other destination on the rail network. The average distance from arrest sites to camps was 3191 km, while the average distance between two randomly selected Russian localities is 3205 km. The average arrest location was 437 km away from the nearest Gulag.

A potentially important concern is that railroads have many effects on a country's political economic development, beyond facilitating repression.

If alternative channels exist between Soviet transportation infrastructure and voting today, the exclusion restriction may not be valid.

Although it is difficult to imagine that railroads did not affect voting in other ways, there are at least three reasons why – in the current case – these alternative pathways are more likely to attenuate the terror effect than to inflate it. First, railroads were arteries of economic development in the USSR, and towns strategically positioned were among the beneficiaries of Soviet industrialization. If railroad towns were more prosperous than those located off the grid – and if this economic advantage still exists today – research on the role of economic performance in Russian elections should lead us to expect greater participation and regime support in these areas (Colton and Hale, 2009; Konitzer-Smirnov, 2003; Panov and Ross, 2013; Treisman, 2011).

Second, railroad access gave local residents more mobility, particularly after the Soviet collapse removed the most onerous restrictions on migration. Due to these opportunities for population movement, the same logistical convenience that made local communities more exposed to repression should also have made these communities less likely to remain intact. This turnover should make it more difficult to detect a repression effect.

Third, even if there are potential alternative pathways linking railroad access to contemporary politics, there are very few pathways other than repression linking voting to the proximity of Gulags. Gulags were generally not located in densely populated places, and Soviet citizens rarely traveled on these paths, except while heading to or from these prisons.

We can further assess this concern by looking at the reduced form relationship between our instruments and voting. These correlations are relatively small. Pairwise Pearson coefficients between our instruments and voter turnout range between .06 and .1.

MODEL SPECIFICATION

Our first- and second-stage model specifications, respectively, are

$$\ln(\text{Repression}_i) = Z_i\zeta + X_i\delta + R_i\eta + u_i \quad (1)$$

$$\text{Turnout}_i = \ln(\text{Repression}_i)\theta + X_i\beta + R_i\gamma + \epsilon_i \quad (2)$$

where the second-stage dependent variable, Turnout_i , is the proportion of registered voters in locality i who voted in national elections. The main explanatory variable, $\ln(\text{Repression}_i)$, is the natural log of individuals arrested and resettled from locality i to Gulag camps under Stalin. Because the $25 \times 25 \text{km}^2$ cells are of equal size, this measure automatically normalizes repression levels by geographic area. Our primary quantity of interest is θ , the 2SLS coefficient on resettlement.

The instrumental variable, Z_i , can be either (1) Euclidean distance from i to the nearest rail station, or (2) to the nearest rail line, and (3) distance from i to the nearest Gulag camp, including Euclidean distance to and from the railroad, and travel distance on the railroad network itself. We estimate the model separately for each of these measures.

Also on the right hand side are a vector of dummy variables, R_i , that indicate the administrative unit (*oblast*) to which locality i belongs, and represent fixed regional differences in voter turnout. X_i is a vector of control variables that account for locality i 's geographic conditions (average elevation), demographics (population density) and Soviet-era ethnic balance (number of unique ethnic groups, proportion Russian population).

RESULTS

Figure 3 reports standardized instrumental variable estimates of the resettlement effect. Table 2 reports a full set of estimates and model diagnostics, for the 2012 presidential elections. First stage coefficients for all three instruments are negative, suggesting that the scale of resettlement was de-

creasing in distance to both railroads and Gulags. The weak instrument test statistic is large and highly significant, suggesting that all instrumental variables are strongly correlated with repression. The Wu-Hausman test, which compares 2SLS estimates to OLS, further suggests that the instrumental variable estimates are consistent and OLS estimates are not.

Our results confirm that exposure to Stalin-era repression depresses voter turnout. The second-stage estimates of the repression effect on voting are all negative and highly significant. In areas where logistics drove variation in resettlement, a standard deviation increase in resettlement produced a .73 standard deviation decline in turnout – equivalent to 8.5 percent of the electorate in 2012. As Figure 3 shows, this negative effect has appeared in every presidential and parliamentary election between 2003 and 2012.

While the relationship appears negative, it is possible that some unobserved or latent characteristic shared by neighboring localities is driving this result. Indeed, Figure 1 clearly shows that neighboring localities tend to vote in similar ways. To gauge whether spatial dependence is a problem for inference, we calculated the Moran’s I statistic of spatial autocorrelation, on the residuals of our instrumental variable models. The Moran test statistics, reported at the bottom of Table 2, are large and highly significant for Models 1-3, confirming that locations with high voter turnout tend to cluster around each other, and that our models overlook this fact.

To account for spatial dependence, we re-estimated Models 1-3, adding Moran Eigenvectors as synthetic covariates capturing residual autocorrelation (Dray, Legendre and Peres-Neto, 2006).⁶ Models 4-6 in Table 2 report the results for 2012 elections, while the Supplemental Appendix (Figure 1) also includes a replication of Figure 3, using the Moran eigenvector

⁶The Moran eigenvector method diagonalizes the $N \times N$ connectivity matrix \mathbf{C} (where $c_{ij} = 1$ if localities i and j share a border, and 0 otherwise) to select the set of m eigenvectors with the largest achievable Moran’s I coefficient of spatial autocorrelation. To eliminate potential multicollinearity, the algorithm extracts the eigenfunctions of the matrix $[\mathbf{I} - \mathbf{X}(\mathbf{X}'\mathbf{X})^{-1}\mathbf{X}']\mathbf{C}[\mathbf{I} - \mathbf{X}(\mathbf{X}'\mathbf{X})^{-1}\mathbf{X}']$, where $\mathbf{X} = [I_n \ X \ L]$ is the $N \times (k + 1)$ matrix of covariates. After extracting the matrix of eigenvectors, \mathbf{v}_{ij} , we include it in the model specification as an additional set of covariates.

Figure 2: SOVIET RAILROAD NETWORK AND GULAG SYSTEM.



approach.⁷ As before, across all election cycles, Russians' political participation is consistently lower where Stalin-era repression was more intense.

ALTERNATIVE EXPLANATIONS OF POLITICAL PARTICIPATION

Stalin's terror is neither the sole nor principal driver of voter turnout in contemporary Russia. In the current section, we consider several alternative explanations, including urban-rural differences, ethnic differences and economic performance. As we show, the repression effect remains strong after we account for these potential confounders.

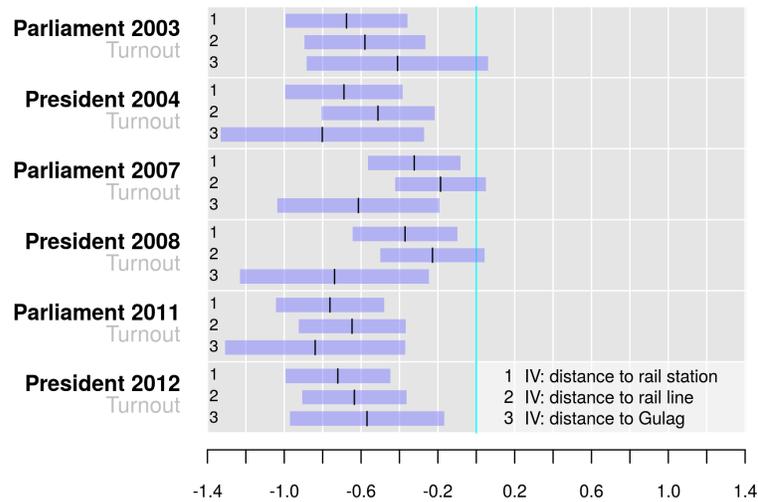
⁷Due to the computational costs of inverting a $29,279 \times 29,279$ matrix, we lowered the spatial resolution from 25×25 km² to 200×200 km². This reduction in statistical power, combined with the eigenvectors, should make it more difficult to detect a significant effect.

Table 2: EFFECT OF SOVIET REPRESSION ON VOTER TURNOUT. Instrumental variable estimates.

Second stage results		Dependent variable: Turnout (2012)					
	(1)	(2)	(3)	(4)	(5)	(6)	
log(Repression)	-0.72*** (-0.99, -0.45)	-0.64*** (-0.91, -0.36)	-0.57** (-0.97, -0.17)	-0.34*** (-0.50, -0.17)	-0.33*** (-0.50, -0.16)	-0.24** (-0.41, -0.08)	
First stage results		Dependent variable: log(Repression)					
Distance to station	-0.73*** (-0.91, -0.56)			-0.65*** (-0.84, -0.45)			
Distance to railroad	-0.69*** (-0.87, -0.52)			-0.64*** (-0.83, -0.44)			
Distance to Gulag	-0.12*** (-0.17, -0.08)			-0.11* (-0.20, -0.01)			
Oblast FE	Y	Y	Y	Y	Y	Y	
Observations	7,026	7,026	7,026	391	391	391	
R ²	0.24	0.31	0.35	0.70	0.70	0.70	
Adjusted R ²	0.23	0.30	0.34	0.62	0.62	0.63	
Residual Std. Error	0.82 (df = 6942)	0.79 (df = 6942)	0.76 (df = 6942)	0.59 (df = 312)	0.58 (df = 312)	0.58 (df = 312)	
Weak instruments	67.51***	60.79***	26.18***	13.57***	13.06***	9.47***	
Wu-Hausman	42.1***	29.15***	9.99**	4.74*	4.14*	0.46	
Moran's I (resid)	32.27***	32.78***	33.18***	-3.19	-3.2	-3.25	

Note: Standardized coefficients and 95% confidence intervals reported.
 / p<0.1; *p<0.05; **p<0.01; ***p<0.001

Figure 3: EFFECT OF SOVIET REPRESSION ON VOTING TURNOUT. Quantities represent standardized coefficient estimates of $\hat{\theta}$ from equation 2.



Urban-rural differences

Because there were more arrests in densely populated areas – where potential targets for repression were in greater supply – the negative relationship between terror and political participation could simply reflect lower voter turnout in urban areas. Historical evidence is mixed on this point. Voter turnout is indeed higher in the Russian countryside (Myagkov, Ordeshook and Sobyenin, 1997; Wegren and Konitzer, 2007), and the persistence of urban-rural divide remains a determining factor in Russian electoral outcomes (Clem and Craumer, 1997; Gehlbach, 2000; McFaul, 1997). Yet the Soviet legacy is also more ambiguous in Russia’s urban areas. Soviet economic policy, particularly under Stalin, favored urban industrial development at the expense of the countryside. The human costs of collectivization, extraction of agriculture, famine and dekulakization disproportionately affected rural areas. If industrializing cities were among the beneficiaries of the Soviet experiment, then this experience should offset rather than compound the negative effect of repression.

To check whether Soviet-era repression continues to affect voting after we adjust for population density, we re-estimated the model in equation (1-2) with modern population density as a covariate in X_i . If the repression effect attenuates significantly after this post-treatment adjustment, we can conclude that urban-rural differences are a plausible alternative explanation of our results. To this end, we use data on local population density in the year 2000 – which are temporally prior to the 2003-2012 election cycles, but obviously not prior to Soviet repression.

The results, which we report in the Appendix (Table 5) due to space constraints, show that the direction, strength and significance of the resettlement coefficient remains the same: instrumented by distance to the nearest rail station, a standard deviation increase in repression yields a .74 standard deviation decrease in voter turnout. Net of repression, meanwhile, population density has no discernible impact on turnout.

Repressed minorities

A second alternative explanation is that the negative effect of repression may be driven by Stalin's mass resettlements of ethnic minorities, and it is backlash from ethnic cleansing, rather than political repression in general, that explains the effect. An extreme example of this phenomenon is Stalin's total deportation of Chechens to Central Asia in 1944. Dzhokhar Dudayev, who led Chechnya's separatist insurgency in 1994-1996, spent the first years of his life in a resettlement colony in Kazakhstan, and the deportation experience still casts a shadow over Chechnya's now-peaceful relations with Moscow. Chechens' experience was not unique. Leaders of the Crimean Tatar community, whose ancestors shared a similar fate under Stalin, urged a boycott of the 2016 Russian parliamentary elections.

Although anecdotal evidence suggests that the negative electoral consequences of repression should be most acute in ethnic minority areas, the data tell a different story. Localities where non-Russian minorities represented a bigger share of arrestees are neither more nor less likely to vote today. In a separate set of analyses, reported in the Appendix (Figure 2), we regressed turnout on the proportion of arrestees who belonged to each of 18 ethnic groups most heavily victimized by Stalin's terror.⁸

We failed to find a consistent relationship between the ethnicity of the repressed and contemporary political participation. For most ethnic groups, the standardized coefficient on repression was statistically insignificant. For some groups – like Russians, Estonians and Poles – voter turnout was lower following repression. Yet for territorially concentrated minorities – like Ossetians and Tatars – the relationship was positive. In Chechnya, for instance, authorities reported turnout at 99.59 percent in 2012, with 99.82 percent backing Putin. In one precinct (#451), Putin received 1,482 votes from 1,389 registered voters, placing official turnout at 107 percent.

⁸These include Armenians, Belarusians, Chechens, Chinese, Estonians, Germans, Greeks, Jews, Kabardins, Kalmyks, Koreans, Latvians, Lithuanians, Ossetians, Poles, Russians, Tatars, and Ukrainians.

Electoral returns like these highlight the larger problem of electoral fraud in Russia, and question whether voting results can be trusted at all. By any standard, Russia's official vote tallies are deeply flawed indicators of political participation. Yet the direction of bias should be toward zero. If inflated turnout figures are more likely where risk of rebellion is higher – due in part to the legacy of Soviet-era repression – then Stalin's terror should have a positive effect on turnout. That is the opposite of what we find.

Economic conditions

If perceptions of economic performance are indeed “the single most influential variable” in Russia's contemporary electoral outcomes – as past research suggests (Rose, 2007; Colton and Hale, 2009; Rose, 2007; White and Mcallister, 2008; Treisman, 2011) – then its omission from our models could bias estimates of the repression effect. Yet since past repression may have affected contemporary economic performance, controlling for this potential confounder presents a trade-off between omitted variable bias and post-treatment bias. This is a trade-off without a straightforward statistical solution, since the current application presents us neither with identifying information, nor options to redesign data collection to avoid the problem.

To account for the impact of economic performance on voting, we proceed in two steps. First, we examine the relationship between repression and contemporary economic performance in Russian regions. Because our economic data are at the level of the oblast-year, we aggregate our repression data to total number of individuals resettled to camps from each oblast. We then regress oblast-year economic indicators – unemployment rates, gross regional product (GRP) – on this aggregate measure of repression, along with fixed effects. We find no evidence of a relationship between Soviet-era repression and post-Soviet economic performance. In these results, which we report in the Supplemental Appendix (Table 6), the coefficient estimate on repression is effectively zero.

In the second step of our analysis, we directly control for the confounding influence of economic performance on voter turnout. To exploit variation in the economic variables over time, we pooled all election results from 2003 to 2014, and created a panel dataset at the level of a grid cell-year. We then regressed turnout on Soviet-era repression, while controlling for the unemployment rate (alternatively, GRP) and fixed effects at the oblast and yearly levels. As we report in the Supplemental Appendix (Table 7), the effect of repression on turnout – instrumented by railroads as before – remains negative and significant. The impact of unemployment on turnout is negligible, but turnout is indeed greater where GRP is high.

EVIDENCE FOR LONG-TERM PREFERENCE FALSIFICATION

The analysis of the preceding sections shows that Stalin-era repression strongly affects political behavior in contemporary Russia. Localities exposed to higher levels of state terror are significantly less likely to vote today, even after accounting for several important contextual factors and econometric concerns. What is less clear is why repression has this effect, and why our negative finding is at odds with recent evidence that violence increases political participation ([Blattman, 2009](#); [Bellows and Miguel, 2009](#); [Bateson, 2012](#)). Although a direct examination of causal mechanisms lies outside the scope of our article, we briefly consider one such possibility here: Stalin’s terror caused long-term preference falsification.

A key difference between the Soviet Union and other perpetrators of violence is that the former was a strong autocratic regime, which held on to power for 70 years before loosening its repressive grip. This feature distinguishes the USSR from empirical contexts in which previous scholars had detected a positive violence-participation link – principally non-state actors and security forces in sub-Saharan Africa and other developing regions. Given the relative weakness of repressive agents in the latter case, it is hardly surprising that fears of a resumption of violence – and result-

ing preference falsification – would be short-lived. By institutionalizing repression, the USSR turned the latent threat of violence into a permanent feature of everyday life, allowing preference falsification to persist.

For Gulag survivors and their families, one of the long-term consequences of repression was exclusion from mainstream social and political life (Bahry and Silver, 1987). Former political inmates faced numerous obstacles to reintegration, including loss of voting rights, travel restrictions, difficulties obtaining residency permits, employment bans in many industries and sectors, and constant monitoring by the secret police. Many of these restrictions – particularly voter disenfranchisement – automatically applied to family members of the repressed. By applying the principle of “guilt by association” to the rest of the household, even after a prisoner had served his or her term, Soviet authorities ensured that Stalin’s terror would have an intergenerational effect on political participation. For other community members not directly victimized, but who potentially witnessed their repressed neighbors’ plight, the message was clear: political participation is dangerous; expressing the “wrong” political preferences can ruin your life; if you oppose the regime, it is better to keep quiet.

Despite the collapse of the Soviet state in 1991, historically repressed communities may see reason to extrapolate these same lessons to the current regime. The freedoms contemporary Russians enjoy would have been unfathomable to Soviet citizens even a generation ago. Yet leading measures of democracy and civil liberties all suggest that Russia is becoming politically less free.⁹ Amplifying matters is the fact that Putin is himself a former KGB officer, whose reign has seen the revival of Soviet symbols and the partial rehabilitation of Stalin.

To investigate the plausibility of this mechanism, we perform two sets of tests. First, we examine whether – when they do vote – historically repressed communities are more likely to vote for the political opposi-

⁹Russia is ranked ‘Not Free’ with a rating of 6.0 by the Freedom House and categorized as an “Open Anocracy” with a score of 4 by the Polity IV.

tion. Higher opposition support in repressed areas would indicate that decreased turnout is masking anti-regime political preferences, rather than simply a decreased interest in politics. Second, we compare the political consequences of repression to cases where individuals were arrested, convicted, and sentenced, but subsequently released and rehabilitated under an order of amnesty. A positive link between amnesty and turnout would also be consistent with the preference falsification mechanism.

Figure 4 reports standardized coefficient estimates from regressions of opposition and pro-Putin vote shares on repression, using the same specification as in equations (1-2).¹⁰ As expected, opposition support is consistently higher – and Putin’s is consistently lower – in historically repressed areas, across all elections. Since these same communities are also less likely to vote in the first place, we can interpret low turnout as a form of preference falsification: voters stay home rather than express their anti-regime preferences at the ballot box.

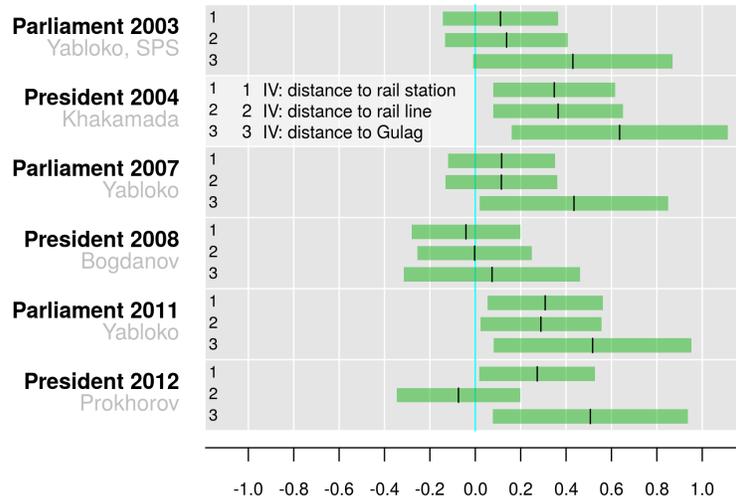
Figure 5 reports the results of the second test: a regression of voter turnout on the proportion of local arrestees who were sent to the Gulag (red) or granted amnesty (blue). These results also support the preference falsification story. The greater the proportion of local arrestees granted amnesty, the greater the political participation. By contrast, the effect of repression (without amnesty) is consistently negative.

Of course, Soviet authorities did not grant amnesty at random, and may have only done so in cases where they had reason to expect political loyalty. This potential selection bias prevents us from interpreting the estimates in Figure 5 as anything other than a correlation. Further research is needed to establish the direction of the amnesty effect. Our preliminary analysis, however, opens the possibility that amnesty of political prisoners not only dampens the negative repression effect, but may even reverse it.

¹⁰Our definition of Russian opposition parties extends to liberal parties (e.g. Yabloko, SPS), but excludes the “loyal opposition” to United Russia (e.g. LDPR, CPRF, Just Russia).

Figure 4: EFFECT OF REPRESSION ON VOTE SHARE.

(a) Opposition vote share



(b) Pro-Putin vote share

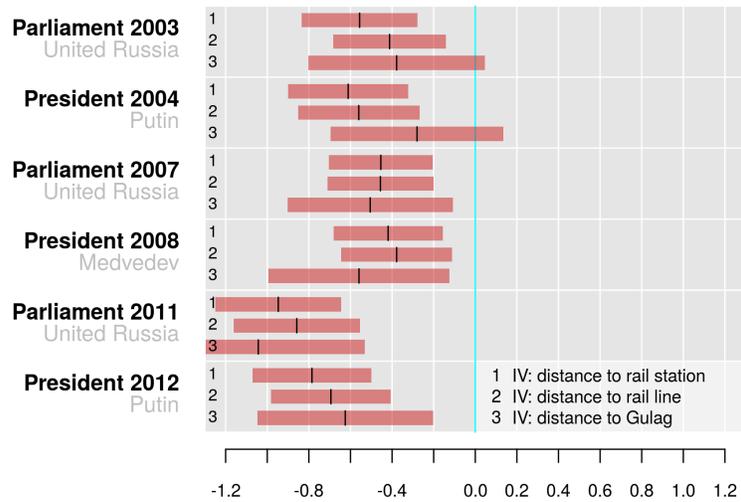
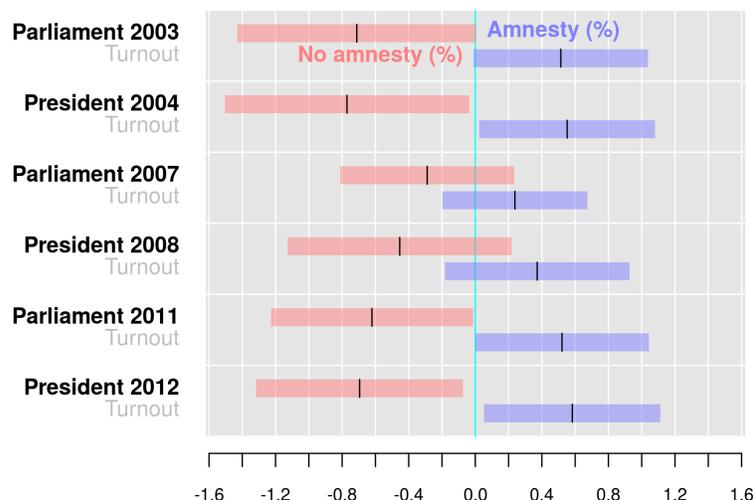


Figure 5: EFFECT OF AMNESTY ON TURNOUT.



CONCLUSION

Using data on contemporary voting in Russia and archival records on Stalin-era repression, we found a robust negative relationship between the number of people sent to Gulag camps and future political participation. To address the potential endogeneity of repression to political preferences, we employed an instrumental variable approach, exploiting exogenous variation in repression due to the accessibility of railroads and the proximity of Gulags. These results confirm that – where resettlement was driven by logistics – the effect of resettlement on turnout is consistently negative. In 2012, this decline in turnout was equivalent to 8.5 percent of the local electorate. We also considered a host of alternative explanations for the terror effect, and argued that these additional sources of error either bias our results toward zero, or do not significantly affect our estimates.

Our findings are consistent with anecdotal accounts about the lasting political trauma of Stalin’s terror, and contribute to an emerging research

program on the long-term effects of political violence. Even where repression is “effective” in the narrow sense of keeping a regime in power, such actions can result in a long-term distrust toward a country’s political institutions. This distrust, our data suggest, has outlived both Stalin and the Soviet Union, and remains a political challenge in contemporary Russia.

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