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Diffusion of Gender Norms: Evidence from Stalin's Ethnic Deportations

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Diffusion des normes de genre : les conséquences des déportations à l'ère stalinienne[1]

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Résumé : Nous étudions la transmission culturelle horizontale entre groupes à l'aide d'un contexte historique unique, qui combine l'exposition à un groupe exogène sans contrôle de l'interaction entre les représentants des différents groupes. Les déportations ethniques de Staline pendant la Seconde Guerre mondiale ont déplacé plus de 2 millions de personnes - dont la majorité étaient des Allemands et des Tchétchènes - des régions occidentales de l'URSS vers l'Asie centrale et la Sibérie. En conséquence, la population indigène des lieux de déportation a été exposée de manière exogène à des groupes aux normes de genre radicalement différentes. En combinant des données d'archives historiques et des enquêtes contemporaines, nous démontrons que les normes de genre se sont diffusées des déportés vers la population locale, entraînant des changements d'attitudes et de comportements. Les normes d'égalité des sexes se sont diffusées davantage que les normes de discrimination sexuelle.
Mots-clés : Transmission culturelle horizontale, Normes de genre, Déportations, Staline

Fiscal incentives for conflict: Evidence from India's Red Corridor

Abstract : We study horizontal between-group cultural transmission using a unique historical setting, which combines exogenous group exposure with no control over whether and how the representatives of different groups interact. Stalin's ethnic deportations during WWII moved over 2 million people—the majority of whom were ethnic Germans and Chechens— from the Western parts of the USSR to Central Asia and Siberia. As a result, the native population of the deportation destinations was exogenously exposed to groups with drastically different gender norms. Combining historical archival data with contemporary surveys, we document that gender norms diffused from deportees to the local population, resulting in changes in attitudes and behavior. Norms of gender equality diffused more than norms of gender discrimination.
Keywords : Horizontal cultural transmission, Gender norms, Deportations, Stalin

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1 Introduction

The last two decades mark the emergence of a consensus in social sciences that culture is an important driver of human behavior, and is distinct from environment, institutions, or genes (Richerson and Boyd, 2006; Spolaore and Wacziarg, 2013; Alesina and Giuliano, 2015). Cultural traits can be transferred both "vertically" across generations within families and "horizontally" across groups (Richerson and Boyd, 2006; Bisin and Verdier, 2010). There is a large and growing body of empirical research in economics documenting cultural persistence and cultural barriers to social learning (e.g., Bisin and Verdier, 2010; Spolaore and Wacziarg, 2009). There is also vast anthropological evidence on the horizontal transmission of cultural traits (Henrich, 2017). In contrast, economic research on between-group cultural transmission is rather scarce and yields mixed results about whether exposure to a group with different cultural norms leads to cultural diffusion. When exposed, people may embrace new alien cultures (Clingingsmith, Khwaja and Kremer, 2009; Tuccio and Wahba, 2018) or reject them and increase identification with their own (Grosfeld, Rodnyansky and Zhuravskaya, 2013; Sakalli, 2018).

Well-identified studies of interactions between different groups use quasi-natural experiments to ensure exogenous sources of variation in exposure. Such experiments randomly assign people of different cultural backgrounds to the same locations. For example, the literature studied the random allocation of children to classes, students to dorms, migrants to social housing, and soldiers to regiments.[1] Typically, however, in many controlled experiments, representatives of different groups are incentivized to cooperate (e.g., students and soldiers are often assigned common tasks). Alternatively, they are united by a common goal, as is the case in the setting considered by Clingingsmith, Khwaja and Kremer (2009) who demonstrate a change in attitudes among Hajj participants after being exposed to representatives of other cultures during their pilgrimage. In many real settings, however, people choose freely whether to interact with members of other ethnic groups, and groups often have conflicting objectives. Even when groups coexist in close proximity, people may self-segregate and avoid contact with representatives of other groups.

Therefore, to study cultural diffusion one needs to combine an experimental setting of cultural exposure with having no control over interactions between individuals. Stalin's ethnic deportations during WWII have both of these features. We use these

[1] Most of these studies focus on testing the contact hypothesis (Allport, 1954) by examining the effect of group exposure on inter-group prejudice and discrimination (Boisjoly et al., 2006; Carrell, Hoekstra and West, 2015; Finseraas and Kotsadam, 2017; Scacco and Warren, 2018; Burns, Corno and Ferrara, 2019; Rao, 2019). Some test how diversity affects the provision of a common good (e.g., Algan, Hémet and Laitin, 2016). Only few, such as Burns, Corno and Ferrara (2019) and Rao (2019), also find imitation of behavior across groups.

deportations as a historical experiment to study how gender norms, a cultural trait that differed sharply across deported groups, diffused from deportees to the native population at the destination locations through social learning and imitation.

2.16 million people from several different ethnic groups, including the entire German and Chechen populations of the USSR, were deported from the Western parts of the USSR to Siberia and Central Asia between 1939 and 1944. The sole reason for their deportation was suspicion by Soviet authorities of (potential or actual) collaboration of some members of these ethnic groups with the Nazis during WWII. The largest four groups of ethnic deportees were: Soviet Germans (over 1 million of them were deported), Chechens (over 450 thousand were deported), Crimean Tatars (almost 185 thousand were deported) and Meskhetian Turks (over 75 thousand were deported). Germans and Chechens constituted over 70% of all ethnic deportees and together with Crimean Tatars and Meskhetian Turks – 84%. These deportations were indiscriminate: all members of these ethnic groups, including men, women, and children, were brought to remote locations in the eastern parts of the USSR, far from the WWII front. Unlike Gulag prisoners, they were not confined to camps and were not guarded. Deportees were free to interact with the local population. Upon arrival, they typically were instructed to find accommodation among the locals and send their children to the same schools as locals, particularly when their size as a group was not overwhelming relative to the size of the local population. Deportees worked in the same places as locals; they, however, were restricted to blue-collar occupations, irrespective of their skills.

Deportees were not allowed to leave their destination localities and had to report regularly to the local special police (NKVD, *People's Commissariat for Internal Affairs*) to verify their physical presence in the destination locality. This restriction was binding until the fall of the Soviet Union in 1991 for three out of four largest groups of deportees: Soviet Germans, Crimean Tatars, and Meskhetian Turks. For the rest, and notably, for the second largest group of ethnic deportees, Chechens, the restriction was lifted in 1956-1957 during the Khrushchev Thaw. The vast majority of deportees and their descendants left the deportation locations after they were allowed.

Deportee groups differed along many dimensions, such as traditional religion, education, occupation, place of origin, and gender norms. For example, before the Soviet anti-religion campaigns of the 1920s and 1930s, the vast majority of Soviet Germans identified themselves as Protestant Christians; whereas Chechens, Crimean Tatars, and Meskhetian Turks practiced Sunni Islam. Literacy rates and education levels were highest among Germans compared to other deportee groups.

We focus on one dimension of these differences: gender norms. The Soviet government tried to impose gender equality on all ethnic groups in the USSR starting with

the 1917 Bolshevik revolution. Some groups resisted this policy more than others, and pre-1917 differences in gender norms among ethnic groups within the USSR were large. In the background section (below), we present anthropological evidence at the time of the deportations and systematic evidence from a pre-deportation census, both of which suggest that: (1) Soviet Germans had the most progressive (i.e., egalitarian) attitudes toward the role of women and men in the society and in the family compared to any other large deportee group or any group that constituted the local population at the destination locations in Central Asia and Siberia. (2) Generally, all groups of deportees with Protestantism as traditional religion had more progressive gender norms compared to all groups of deportees who traditionally were Sunni Muslims.[2]

As far as the native population of deportation destinations is concerned, in Siberia, the locals were predominantly ethnic Russian, who at the beginning of WWII had substantially more egalitarian gender norms than the Muslim deportee groups, but did not have as long a tradition of gender equality as German deportees.

In Central Asia, the majority of the local population belonged to Central Asian ethnic groups: Kazakhs, Uzbeks, Kyrgyz, Tajik, and Turkmen. Their traditional religion was Sunni Islam and their traditional gender norms were either similarly backward or, at times, even more regressive than those of Muslim deportees. Polygyny, veils for women, female illiteracy, and child marriages were widespread among Central Asians (Northrop, 2004). Only some of these norms were present among Muslim deportee groups.

We test whether gender norms transferred horizontally from deportees to the local native population. In particular, we study how gender-related attitudes and behavior of natives depend on the group composition of deportees in the destination localities. The way destination localities were determined allows us to overcome potential endogeneity problems. Central authorities determined the quotas of each deportee group in every subnational-region (the first-tier administrative division within Soviet Republics) possibly depending on factors correlated with the cultural traits of the native population. In contrast, within regions, the allocation of deportees across localities was unrelated to their culture or the culture of natives. First, within regions, the local native population was fairly homogeneous. Second, the assignment of deportees to a particular locality within regions was driven by local needs for manual labor—the main occupation of ethnic deportees at their destinations—and was orthogonal to the skills, ethnic identity, and culture of deportees.

Consistent with the historical narrative about the choice of destination locations, a

[2]Soviet Germans constituted 96.5% of all deported Protestants. Chechens constituted 60%, Crimean Tatars 25%, and Meskhetian Turks 10% of all deported Sunni Muslims. Ethnic groups with traditional religion other than Protestantism or Sunni Islam represented less than 13% of all ethnic deportees.

large list of observables measured at deportation destinations is balanced with respect to within-region group composition of ethnic deportees. In particular, we show that the relative share of Protestant vs. Muslim deportees at deportation destination localities is uncorrelated with local ethnic and religious composition as well as with other population, economic, and geographical characteristics, conditional on the number of ethnic deportees at the destination and region fixed effects. In contrast, the destinations of ethnic deportations differed from the places that did not receive deportees by a number of important aspects. For example, they were closer to railroads, as deportees arrived to destination regions by rail, and were closer to Gulag camp sites, as some massive construction projects required the work of Gulag prisoners, free local workers, and deportees. This is why, for identification, we rely exclusively on the variation in the group composition of the deportees, conditional on their presence in the locality and their size.

We combine historical and contemporary data for our analysis. Data on the number of deportees of each ethnicity at each destination location come from the 1951 census of all deportees conducted by NKVD available from the Russian national archives. We cross-checked these data with 1946 NKVD census of all deportees, also available from the Russian national archives. As outcome variables, we use attitudinal questions on gender roles and on gender-specific behavior, such as education and entrepreneurship, from the 2016 wave of the Life in Transition Survey (LiTS). We focus on respondents from the five countries that received ethnic deportees: Russia, Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan.[3] To describe the native population at destinations of deportations, we use data from the 1939 Soviet and 1897 Russian-empire population censuses. We also collected a number of geographical and other historical characteristics of deportation destinations.

Our empirical strategy is straightforward. We compare attitudes and behavior of respondents within the same regions between localities that hosted ethnic deportations comprised mostly of Muslim deportees and localities with deportations consisting mostly of Protestant deportees. We use traditional religion of deportees as a proxy for their gender norms. To make sure that descendants of deportees are not in our sample, we only consider respondents who belong to the local native majority group: ethnic Russians in Siberia, and Kazakhs, Uzbeks, Kyrgyz, and Tajiks in Central Asia.

Figure 1 illustrates the main pattern in the data: it presents the mean difference in progressive gender attitudes and in female entrepreneurship rates between respondents from localities that hosted ethnic deportees and all respondents from the regions of these localities, by tercile of the local share of Protestants among deportees. The figure

[3]Turkmenistan is the only country that received ethnic deportations and is not in our sample because the LiTS survey did not cover it. Only 0.1% of all ethnic deportees were sent to Turkmenistan.

shows that progressive gender attitudes and female entrepreneurship rates are below regional averages in localities with the lowest share of Protestants among deportees and are above regional averages in localities with the highest share of Protestants among deportees. This is evidence of horizontal cultural transmission from deportee groups to the native population.[4]

The results of the regression analysis confirm this pattern. We find that respondents have more progressive attitudes toward the role of women in society and in the family if the ethnic deportees who lived in their locality were Protestants (equivalent to saying that they were Germans), compared to respondents from localities, in which the deportees were Muslims (mostly Chechens). Furthermore, female entrepreneurship rates are significantly higher today in localities in the vicinity of Protestant deportations compared to Muslim deportations. As we find no difference in entrepreneurship rates among men between locations of Protestant vs. Muslim deportations, it is unlikely that environment rather than social norms drives the differences in female entrepreneurship rates. Importantly, we also find that mothers of respondents from localities that were the destinations of Protestant deportations (compared to mothers of respondents from localities that were the destinations of Muslim deportations) have significantly higher educational attainment, but only for cohorts that completed compulsory schooling after deportees arrived to destination localities. This evidence also suggests that our results are not driven by unobserved heterogeneity between localities within regions.

We show that the effect of exposure of locals to deportees on gender attitudes of locals depends on the relative sizes of the deportee and native population. There is an inverted U-shape relationship: the effect increases with the number of deportees relative to the local population until the number of deportees becomes overwhelmingly large (i.e., the top quarter of deportation localities), at which point the gender attitudes of locals stop being affected by the group composition of deportees. Yet, we do find the effect of the group composition of deportees on female entrepreneurship even in localities where the ratio of deportees to local population is the top quarter of the distribution.

Our results are robust to limiting the sample to respondents from Central Asia. As inter-marriages were extremely rare between deportees and the local population of Central Asia due to pre-existing racial animosity, we conclude that inter-marriages cannot be the primary mechanism behind the results.[5]

[4]As the outcome variables are measured in 2016, whereas some deportees were allowed to leave as early as 1956 and others stayed as late as 1991, our results also point to vertical transmission of cultural norms. We take this vertical transmission as given and focus on the horizontal transmission because the former, unlike the latter, constitutes a well-established fact in the literature (see, e.g., the survey by Giuliano, forthcoming).

[5]There is some evidence consistent with the hypothesis that higher cultural distance between deportees and the local population resulted in a larger adjustment of norms among the locals. This

The results are not driven by selective in-migration of the local population: We use information on the place of residence of respondents' ancestors before WWII to establish robustness to restricting the sample to respondents whose families lived before WWII in the same region as the respondent. We also provide evidence that the decision of natives to migrate out of the deportation regions was not related to the differences in gender norms between the locals and the deportees suggesting that selective outmigration of the local population is unlikely to drive the results. Overall, we conclude that our results provide evidence of between-group cultural transmission of gender norms.

Controlling for region fixed effects and the presence of an ethnic deportation in the vicinity of a respondent's locality are crucial for our identification strategy because the group composition of deportees is expected to be unrelated to pre-existing cultural attributes of the native population only after conditioning on these covariates. Once we control for region fixed effects and the presence of an ethnic deportation, our results are robust irrespective of whether we control for a battery of geographic, climate, and historical variables (such as the size of the municipal population in 1939, average summer and winter temperature and precipitation, ruggedness, distances to the closest railroad, to Gulag camp site, to past or present capital city, and to evacuated enterprises, and the urban/rural/capital status of a location), or for the respondent's demographics and socio-economic status. To understand whether variation in unobservables could drive our results, we use tests developed by Altonji, Elder and Taber (2005) and Oster (2017). These exercises suggest that the results are unlikely to be driven by confounding factors. In our baseline specification, we correct standard errors for spatial correlation within a 150km radius following Conley (1999), and we establish robustness to alternative assumptions about variance-covariance matrix.

The magnitude of the effects is substantial. If we compare two respondents today, who live in the same region but in different localities, which were the destinations of ethnic deportations (of an average size), such that one locality had only Protestant deportees and the other—only Muslim deportees, we find that those female respondents who live near the site of Protestant deportations are 20 percentage points more likely to disagree with the statement: *"A woman should do most of the household chores even if the husband is unemployed"*, 19 percentage points more likely to disagree with the statement: *"Men make better political leaders than women do"*, and 10 percentage points more likely to disagree that *"It is better for everyone involved if the man earns the money in the family"* than female respondents who live next to the site of only Muslim deportations. For male respondents, these differences are: 23, 20, and 10

evidence, however, is not robust to using different measures of cultural distance and, thus, should be interpreted with caution.

percentage points, respectively. Women, who today live near locations of Protestant deportations, are 13 percentage points more likely to have tried to open their own business than their counterparts from locations of Muslim deportations. We also find a 8.8 percentage point difference in the attainment of tertiary education among women young enough to attend compulsory school after the deportees had arrived between sites of only-Protestant and only-Muslim ethnic deportations.

Our paper relates to several strands of economics literature. By providing evidence on the between-group diffusion of a cultural trait–gender norms–our main contribution is to the literature on between-group cultural transmission (Clingingsmith, Khwaja and Kremer, 2009; Bisin and Verdier, 2010; Spolaore and Wacziarg, 2013; Alesina and Giuliano, 2015; Tuccio and Wahba, 2018).

Our analysis is also related to the literature on social contact (e.g., Angrist, 1995; Boisjoly et al., 2006; Carrell, Hoekstra and West, 2015; Algan, Hémet and Laitin, 2016; Chetty, Hendren and Katz, 2016; Finseraas and Kotsadam, 2017; Scacco and Warren, 2018; Burns, Corno and Ferrara, 2019; Rao, 2019). Most of the papers in this literature use (quasi-)experimental settings to estimate the effects of group exposure on a variety of outcomes, including inter-group prejudice and educational performance. In contrast to our study, however, these papers do not consider cultural traits as outcomes.

We also contribute to a burgeoning literature on the determinants of gender roles, see Goldin (1990), Giuliano (2017), and Giuliano (forthcoming) for excellent reviews of this literature.[6] In particular, our work is related to papers documenting peer effects in gender norms (e.g., Maurin and Moschion, 2009; Anelli and Peri, 2017; Nicoletti, Salvanes and Tominey, 2018; Schmitz and Weinhardt, 2019; Olivetti, Patacchini and Zenou, 2020). Schmitz and Weinhardt (2019), for instance, show that West Germans in localities exposed to higher levels of in-migration of East Germans after the unification of Germany exhibit more progressive gender norms, using the distance to the border between East and West Germany as a source of variation. They interpret the results as evidence of cultural transmission from East Germans to West Germans. Our paper focuses on horizontal transmission of gender norms *across ethnic boundaries* and uses forced migration for identification.

Our paper is also related to the literature on peer effects in education (surveyed in Epple and Romano, 2011; Sacerdote, 2011, 2014). Algan et al. (2018) document a convergence in the political views of students who formed friendships after being randomly allocated into classes during a university initiation program. A key difference between our analysis and any estimates of the effects of the random allocation of

[6] Fernández, Fogli and Olivetti (2004); Becker and Woessmann (2008); Fernández and Fogli (2009); Fogli and Veldkamp (2011); Alesina, Giuliano and Nunn (2013); Giavazzi, Schiantarelli and Serafinelli (2013); Fernández (2013); Hiller (2014); Giuliano (2017); Campa and Serafinelli (2018); Lippmann, Georgieff and Senik (2020) are among particularly important contributions.

students to classes is that interactions between students are encouraged and regulated, whereas this was not the case for ethnic deportees and the native population in our setting.[7]

The paper proceeds as follows. In Section 2, we provide historical background. In particular, we present details on how the destinations of ethnic deportations were determined and discuss the differences in gender norms among deportee groups and between deportees and the local population at the destination locations. Section 3 presents data sources. In Section 4, we describe the empirical strategy and discuss the main identification assumptions. Section 5 reports the results. In Section 6, we explore heterogeneity with respect to the relative size of deportees to the local population at destinations and to the cultural distance between deportees and locals. In Section 7, we provide evidence against alternative explanations related to selective in-migration and to outmigration of locals. Section 8 concludes.

2 Historical Background

2.1 Ethnic deportations during WWII

The timing of deportations.—Ethnic deportations were decided by decrees issued by Soviet authorities. The official goal of the ethnic deportations was the purge of "anti-Soviet, alien, and suspicious elements" as stated by Lavrentiy Beria, the head of NKVD at that time (Polian, 2004, p. 139). Ethnic deportations took place in three waves. First, in 1939-1941, several selective deportations took place from the annexed territories in Poland, the Baltics, and Romania, with the goal of suppressing local resistance against the Soviet occupation, following the Ribbentrop-Molotov Pact. The second wave took place in 1941-1942, after the Nazis and Soviets became enemies. The deportations of this wave were called "preventive," i.e., they claimed to prevent the deported groups from collaborating with the Nazis. These deportations were indiscriminate, i.e., all Soviet citizens, including women and children, that belonged to the suspected ethnic groups were deported. The largest deported group during these years was the Soviet Germans. The third wave took place in 1943-1944. It was so-called "retributive," i.e., it was a punishment for the actions of a few individuals from these groups who actually collaborated with the Nazis. This deportation wave included

[7]We also contribute to the literature on the consequences of Stalin's punitive policies. For instance, Toews and Vezina (2019) and Kapelko and Markevich (2014) study the long term effects of Gulag camps. Levkin (2016) studies the effect of Stalin's ethnic deportations on distrust in central authority. He compares places that were the destinations of ethnic deportations with places that were not destinations of ethnic deportations. In contrast, we explore an exogenous variation in the ethnic composition of deportations focusing only on those places that were the destinations of ethnic deportations. Becker et al. (2020) estimate the effect of forced migration on the educational attainment of descendants of the forcibly displaced as a result of a change in European borders after WWII.

Chechens, Crimean Tatars, and Meskhetian Turks. The deportations of the third wave were also indiscriminate. The deportations happened very rapidly so that, in many cases, there were only a few days between the decree against a certain ethnic group and their actual deportation. There was no selection at the origin: practically all representatives of the groups destined for deportation were actually deported. People who tried to resist were shot (Nekrich, 1978 and Polian, 2004, pp. 147, 151). Figure A1 in the online appendix presents photos of Chechen and German deportees. We focus on the effect of the indiscriminate deportations that took place between 1941 and 1944, but control for the presence and size of other deported groups at their deportation locations.

The destination locations.—A historian of ethnic deportations, J. Otto Pohl, describes the purpose of the deportations as follows: *"it [the deportation] sought to use the deportees as a caste of helot labourers to provide a captive workforce to develop the economy of Kazakhstan, Central Asia, Siberia and other remote areas of the USSR. To these ends it imposed a special legal status upon the exiles aimed at excluding them from mainstream Soviet society while at the same time integrating them into the local economy as a source of menial labour* (Pohl, 1999, p. 13).

For each ethnic deportation, NKVD in Moscow issued a directive listing the regions of destination (i.e., the *oblasts*, the first administrative division within Soviet Republics) together with quotas of deportees assigned to each region. Typically, deportees were transported to train stations on horse-drawn carriages or trucks and then by rail to the main train station of the destination region.

Historians describe that the localities where deportees ended up within the assigned region were decided only upon arrival to the destination region (Koustova, 2015; Blum and Koustova, 2018*a*,*b*). The local authorities, such as the heads of the *sovkhoz* and *kolkhoz*, the state-owned and collective farms, and the administration of local state-owned enterprises came to the main regional town to choose deportee families to work for them in their locality within the region. Families, for the most part, were left intact. The representatives of local administrations were primarily interested in recruiting young and healthy adults capable of carrying out manual labor, in what had some resemblance to a slave market. Apart from the local demand for manual labor, there were also restrictions imposed by central authorities on employing deportees in non-manual occupations.[8] Other characteristics of deportees, unrelated to their physical strength, such as ethnicity, religion or cultural background, did not play a role in their

[8]For example, Mukhina (2005) writes about such restrictions on German deportees: *"[There] were numerous orders which did not allow the use of labour of ethnic Germans for anything except the heaviest work, most often meaning timber felling and loading and unloading cargo of freight wagons. Special prohibitions had been issued against the use of Germans on lighter jobs in sovkhozy, offices or in the service sector"* (p. 740).

allocation to their final destinations within the assigned regions. The reason for this was that within regions the local native population was fairly homogeneous and natives in different localities had similar preferences with regard to accepting different deportee groups. Below in Section 4.2, we present a battery of balance tests documenting the absence of within-region correlation between deportation destinations' characteristics and the local group composition of deportees.

Figure 2 in the main text and Figures A2 and A3 in the online appendix present maps of the destinations of ethnic deportations and their group composition at those destinations. Table A1 in the online appendix presents the total number of ethnic deportees by religion, ethnic group, and Soviet Republic of destination in 1951.[9] Figure 2 and Table A1 illustrate several historical facts: (1) The majority of ethnic deportees were brought to eastern Siberia and Kazakhstan. (2) The majority of Protestant deportees were deported to Siberia, while the majority of Muslim deportees were deported to Central Asia. (3) Despite these differences across countries, there is a lot of within-country within-subnational-region variation in the group composition of deportees. We rely on this variation in our empirical analysis.

Life at destination.—The deportees constituted a new category of Soviet subjects, so-called Special Settlers (*spetsposelentsy*), who had a status "somewhere between being a citizen and a prisoner" (Blum, 2015). Once at their final destination, deportees were given work, usually on the same sites as the local population. Depending on the number of arriving deportees, they were either instructed to find accommodation to rent from the locals or to build their own (temporary) shacks. They were not allowed to leave from the assigned settlement and had to report frequently (in the beginning, as often as every three days) to the local branch of the NKVD apparatus as a check on their physical presence. Attempts to flee were severely punished (Zemskov, 2003; Westren, 2012).

In sharp contrast to Gulag camp prisoners, deportees were not guarded and were not put behind bars. They were free to move in the vicinity of their assigned settlements and could interact freely with the local population. As entire families (men, women, and children) were deported, deportee children were sent to local schools together with the children of local natives. The language of instruction was of the local majority, the deportees were not allowed to set up schools in their own languages (Pohl, 2000).

The return.—Different groups of ethnic deportees were allowed to leave the depor-

[9]These numbers are a poor indication of how many people were deported from their homelands, as the death toll during the journey to the destination places and shortly after arrival to the destinations was very high (Polian, 2004). There is a systematic account of how many children were born to deportees at their destinations. Westren (2012) argues that up to 1950, the death rate among deportees exceeded the birth rate (p. 149). Thus, 1951 data are better suited to analyze exposure of the local native population to deportees as the mortality rates among deportees declined after 1950.

tation destinations at different points in time between 1956 (as a result of Khrushchev's Thaw) and 1991 (as a result of the fall of the Soviet Union). The timing and terms of the "pardon" varied between different ethnic groups of deportees. Chechens were rehabilitated during Khrushchev's Thaw with respect to their civil rights and administrative status, and their pre-deportation homelands were returned to them, albeit only partially (Polian, 2004, p. 197).[10] Deportees rehabilitated during Khrushchev's Thaw progressively left their destination locations during the 1960s. In contrast, Germans, Crimean Tatars, and Meskhetian Turks, even though acquitted of the "crime" charges in 1964, were never fully "pardoned." Their pre-deportation homelands were not returned to them, and they were not allowed to leave deportation locations. While they no longer had a duty to report to the local security apparatus every third day in the 1960s, they continued to be obliged to report their presence in the deportation location once a year. A number of key restrictions on these deportees remained intact until the fall of the Soviet Union (Polian, 2004; Blum and Koustova, 2018*a*). Almost all Germans, Crimean Tatars, and Meskhetian Turks left their deportation settlements after the disintegration of the Soviet Union. Germans moved to Germany (as they were given German passports), Meskhetian Turks moved to Georgia, Azerbaijan, Turkey, and Russia, whereas Crimean Tatars mostly moved back to Crimea (Polian, 2004).

2.2 Gender norms among deportees and the native population

At the time of ethnic deportations, there were no quantitative studies of gender norms of ethnic or religious groups. However, there is abundant anecdotal evidence from that period collected by Soviet anthropologists. We summarize their findings in this subsection and present systematic quantitative evidence about the differences in gender norms between deportee groups and the local native populations at deportation destinations before deportations took place. All pieces of evidence strongly suggest the following two conclusions. First, gender norms were substantially less egalitarian among Muslim deportees than among Protestant deportees (vast majority of whom were Soviet Germans). Second, gender norms of the local native populations at the deportation destinations, i.e., Russians in Siberia and the local native Muslim population of Central Asian Soviet Republics, were more regressive than gender norms of German deportees.[11]

Official Soviet policy.—Gender equality was the official policy of the USSR. Proclaimed part of the Soviet ideology, it encompassed the spheres of education, work

[10] A number of less numerous deportee groups, such as Kalmyks, Ingush, Karachais, and Balkars, were also rehabilitated (at least formally).

[11] Gender norms of ethnic Russians were closer to those of Soviet Germans, whereas gender norms of Central Asians were similar to those of Muslim deportees.

and family. Polygamy, child marriage, and wearing the veil were forbidden throughout the USSR. Campaigns for "the liquidation of illiteracy" (*Likbez*) of the 1920s and 1930s targeted equally men and women. Boys and girls had the same schooling obligations (e.g., Clark, 1995).

Atheism, just as gender equality, was proclaimed one of the ideological goals of the revolution. Initially, the Soviet state allowed some religious freedom for Muslims in contrast to Orthodox Christians and Protestants (as the state was not able to cope with resistances on several fronts), but this policy was overturned in 1927. At this point, all religious expression was officially forbidden until 1941, and the brutal anti-religious campaigns of the 1930s cracked down on all religious denominations (Pospielovsky, 1988).

Soviet ideological goals, however, were not equally enforced everywhere. The differences in resistance to forced gender equality and forced secularization were stark among different ethnic groups of the USSR.

Anthropological and historical evidence.—Soviet Germans held the most progressive gender norms not only among deported ethnic groups, but among all groups residing in the Soviet Union. They were the descendants of Germans, who immigrated to Russia in the late 18th century and settled mostly in the Volga region on the invitation of Catherine the Great.[12] In the Russian empire, Germans were granted unprecedented freedoms. Their culture and religion were tolerated, and they were exempt from military service and serfdom (Miller, 1987). According to the 1897 Imperial Census, 81% of Volga Germans were Protestants. Historians point out that Volga Germans instituted schools for girls as early as the 18th century (Wiens, 1997; Dietz, 2005).

After the revolution, Volga Germans continued to enjoy a special degree of autonomy, which since 1924, took the form of their own administrative region, the Volga German Autonomous Soviet Socialist Republic. Soviet Germans considered themselves the carriers of the culture of their ancestors and tried to preserve their religion, mother tongue, and folklore during the first decades of the USSR, which also meant that gender equality and the level of female education were exceptionally high among this group. Many Volga Germans assimilated fully and moved out of the Volga region to other parts of the Russian Empire and of the USSR. Before WWII, ethnic Germans lived throughout the country and, particularly, in large cities. In 1941, they were deported irrespective of place of residence (Polian, 2004).

Before the revolution, polygamy and arranged marriages of female children were common practices among the Muslim population and in Central Asia (the destination of 58% of all ethnic deportees). In contrast, such practices were practically absent

[12]Most Germans who came to the Russian empire were from the Hesse and Palatinate regions.

among non-Muslim population of the Russian Empire, particularly, among ethnic Germans and Russians. After the revolution, the official campaigns of female emancipation were opposed by the Muslim population of Central Asia as well of the North Caucasus, Crimea, and Georgia, the origin of most Muslim deportees. Adherence to the traditional norms proclaimed illegal by the Soviet state was considered an act of resistance against the Russian-Soviet colonizers (Northrop, 2004).[13]

Historians and anthropologists disagree about the relative position of Central Asian native population and Muslim deportees to Central Asia in terms of their gender norms. Some (e.g., Ro'i, 2000; Pohl, 2008) argue that, during and after WWII, deported groups, and in particular Chechens, resisted Soviet policies of female emancipation and secularization more than the local Muslim population at the deportation destinations in Central Asia. More generally, *"the Chechens demonstrated a propensity for insubordination during deportations"* (e.g., Pohl, 2008). Being deported on the basis of ethnicity strengthened the ethnic identity of deportees and reinforced beliefs and practices that the Soviet state tried to eradicate. For instance, adherence to Sufism increased among Chechens during the time of deportation *"possibly to demonstrate protest against deportation and to ensure group solidarity"* (Ro'i, 2000, p. 407). Ethnic deportees from the North Caucasus observed Ramadan more strictly and celebrated Muslim festivals more actively compared to the native population (Ro'i, 2000, p. 408). Ro'i (2000) documents that *"Chechen adults were 'believers,' some of them to the point of fanaticism, and there was evidence that both Chechens... were far more religiously observant than most of the indigenous inhabitants in their areas of 're-settlement'."*[14] Other scholars, and most notably Deweese (2002), argue that, despite bringing to light important archival data about Muslims in the USSR, including those deported during WWII, Ro'i (2000) significantly overstated the extent of backwardness of gender norms among Chechens.[15] Irrespective of how gender norms of Muslim deportees compare to those of the native population of Central Asia, historians agree that there is very sharp contrast between gender norms of Muslim and Protestant deportees; and this is the variation we explore in this paper.

[13] Nekrich (1978) reports sixty-nine acts of violent resistance against the imposition of new Soviet norms in 1931-1933. Traditional governance structures of the North Caucasus continued to play an important role for a long time after the revolution. Ro'i (2000) reports that some religious Muslim sects within the Chechen population were powerful enough to reject *kolkhoz* directors nominated by the local Communist party administration (*raikom*) and appoint their own nominees (p. 407). Everyday disputes were often resolved in accordance with Sharia law.

[14] Ro'i (2000) also argues that polygyny remained common among Chechens during the time of deportations (in 1950s and 60s) and even after they returned to the North Caucasus from the deportation destinations (p. 539). Child marriages among Chechen deportees precluded girls from going to school: *"In one village, out of seventy-five girls who should have been in school in the fourth to the seventh grade, only four attended school"* (p. 541).

[15] See also Tishkov (2004); Khasbulatova (2007); Nanayeva (2012); Lazarev (2019) for the description of gender roles among Chechens.

After the end of the Civil War, ethnic Russians adhered to Soviet policies, including those promoting the emancipation and education of women, without much resistance, in contrast to Muslim groups residing in the USSR. Before the revolution, gender discrimination and female illiteracy were widespread among Russians, particularly in rural areas; and Russia was predominantly rural before Stalin's industrialization. The first two decades of Soviet rule marked great progress, both in education overall and in closing the literacy gap between Russian men and women. For instance, by 1939, literacy rates among women in the Russian Soviet Federative Socialist Republic (RSFSR) reached 54% in rural areas and 73% in urban areas (the corresponding figures for male literacy in 1939 were 70% and 81%, respectively).

Evidence from the 1897 Russian empire census.—We use the 1897 Russian empire census, to illustrate the pre-existing differences in labor force participation and in education levels between men and women for the four largest subsequently-deported ethnic groups—Germans, Chechens, Crimean Tatars, and Meskhetian Turks—and the groups that constituted the native populations at the destinations of deportations—Central Asians (in Central Asia) and Russians (in Siberia).

Figure 3 compares labor force participation (Panel A) and rates of schooling above primary and literacy in Russian—the main imperial language—(Panel B) for these ethnic groups, separately in rural and urban areas. The figure illustrates that, for both outcomes, Germans, on average, were the most gender equal among these groups, following by Russians. Muslim deportee groups were as gender unequal as Central Asian local population.[16]

To sum up, in 1897, Germans had the lowest gender gap in literacy among the four considered groups.

3 Data

In this section, we describe all datasets used in the analysis and present the spatial variation in the data.

3.1 Data sources and variable definitions

Ethnic deportations.—Our main treatment variable comes from a dataset on the destinations of ethnic deportations from declassified archives in the State Archive of

[16]In Figure A4 in the online appendix, we verify that the smaller gender gap in education among Germans was not a mere function of the *level* of education, which was the highest among Germans. The figure shows that the gender gap, on average, did not close with education level across Russian empire provinces for all considered ethnicities, suggesting that it is cultural norms that explain the low gender gap in education among Germans.

the Russian Federation (GARF) in Moscow.[17] The data represent a 1951 snapshot of the entire surviving deportee population at destination locations originally recorded by NKVD. The dataset contains the locations and the number of deportees by ethnic group. 1,131 localities across 59 regions hosted ethnic deportations. The dataset also contains information on nonethnic deportees: *kulaks* (wealthy farmers expropriated during the collectivization), "bandits," and "anti-Soviet elements," all of whom were deported before WWII. In our analysis, we control for these nonethnic deportations.

As mentioned above, Figure A2 in the online appendix presents the destinations of ethnic and nonethnic deportees in the data. Many of these locations hosted few deportees, however. To account for the number of deportees at destination, in Figure 2, we present the density of ethnic deportees per grid cell area. Figure A3 zooms into the geographical area with the most sizable ethnic deportations and shows the size and composition of ethnic deportations by traditional religion of the deported ethnic group for all ethnic deportees. This map also presents regional boundaries, which are important for our analysis because, for identification, we rely on within-region variation in the composition of ethnic deportations.

We perform two checks on the deportations data using archival information about the number of ethnic deportees at destination in 1946, originally collected by NKVD (which we collected from the State Archive of the Russian Federation and digitized) and the 1970 Soviet census (from `http://www.demoscope.ru/`, accessed on March 23, 2020), both available at the regional level. These reality checks reveal a strong persistence in the spatial distribution of deported groups across deportation destinations over a quarter of the century. The results are presented in Figure A5 in the online appendix. Panel A compares the numbers of ethnic deportees recorded by NKVD in 1951 and 1946 by destination region. In Panel B, we compare the numbers of deportees in 1951 by destination region with the number of people who belong to the deported ethnicities in the same region according to the 1970 USSR census, excluding Chechens, the majority of whom left the deportation destinations before 1970. There is a strong positive correlation between the numbers of Protestant and Muslim deportees by region over time.

Life in Transition Survey.—Our outcome variables come from the Life in Transition Survey (LiTS) conducted by the European Bank for Reconstruction and Development in the fall of 2015 and the spring of 2016.[18] The survey covered 34 countries in Eastern and Central Europe and Central Asia. We focus on five countries included in LiTS that were the destinations of ethnic deportations during WWII: Russia, Kaza-

[17] These data were collected by Alain Blum.

[18] The description of the survey, its methodology, and summary statistics can be found at: `https://www.ebrd.com/publications/life-in-transition-iii` (accessed on April 22, 2019).

khstan, Uzbekistan, Kyrgyzstan, and Tajikistan. About 1,500 households were sampled at random from 75 primary sampling units (PSUs) in each of these countries. An adult member of each household was chosen at random to answer a broad set of attitudinal questions, as well as questions about his or her socioeconomic and demographic characteristics.

Our main focus is on the questions about attitudes toward gender roles in society and in the family.[19] In particular, we measure gender attitudes using responses to the following three questions: (a) *"A woman should do most of the household chores even if the husband is unemployed. Do you agree?"*; (b) *"It is better for everyone if the man earns the money and the woman takes care of home. Do you agree?"*; (c) *"Men make better political leaders than women do. Do you agree?"*. The response options were on a 4-point-Likert scale. We create dummies coding "strongly disagree" and "disagree" as 1, and "strongly agree" and "agree" as 0, so that higher values mean more progressive attitudes. As there was no response option "neither agree, nor disagree," our coding encompasses all response options. We also aggregate the three dummies into a single measure by calculating their first principal component, in which all factor loadings turn out to be positive, and by normalizing the resulting measure to be between 0 and 1.

To test whether self-reported gender attitudes translate into behavior, we also consider the following behavioral characteristics: dummies indicating whether female respondents tried to start a business, whether respondents of both genders take part in a women's rights advocacy association, and whether respondents' mothers obtained tertiary education. The information on the educational attainment of respondent's mothers allows us to test for pre-treatment differences between treated localities. We use mothers' education as an outcome separately for cohorts of respondents' mothers who finished compulsory schooling before and after deportees arrived to their localities. As there is no age of mothers in LiTS, we predict the birth year of the mother of each respondent using respondent's age and aggregate data on the average age of women at the time of birth of each of their children by women's birth cohort in the USSR. These data come from The Human Fertility Collection (HFC).[20]

Historical variables.—We construct proxies for the demographic characteristics of the local native population using the 1939 USSR census, which gives the size and ethnic composition of the population at the municipality (*rayon*) level in 1939.[21] Importantly, this is a noisy proxy for local population after WWII, because the Soviet Union lost over 15% of its population in WWII. Yet, this is the best proxy available,

[19] These questions were asked in the 2016 wave of LiTS for the first time.

[20] These data are available at https://www.fertilitydata.org/cgi-bin/country.php?code=rus (accessed on April 24, 2019).

[21] These data are made available by Demoscope (http://www.demoscope.ru/, accessed on March 23, 2020).

as the first post-war census was conducted only in 1959, i.e., eighteen years after the German deportation. To match 1939 population data with deportation locations and the rest of the data, we have built a digital map of the 1939 USSR at the municipality level. We use 1939 population statistics both to control for the size of the local population at deportation destinations and to check the balance in our main treatment variable.

We also use the 1897 Russian empire census to check the pre-deportations balance in our main treatment variable. Data from the 1897 Russian empire census were published at a county (*uezd*) level. Castañeda Dower and Markevich (2020) digitized these data for Russia and we digitized them for Central Asia. In particular, we collected the following variables: population density, urbanization, religious composition, the shares of Russian and German minorities, the shares of those working in agriculture, in industry, and in services and trade, the share of the population employed in white collar jobs, the share of the literate population, and the share of literate women. We use a digital map from Castañeda Dower and Markevich (2018) to match the 1897 population statistics with the rest of the data.

To check for potential confounding factors, we use data on the locations of Gulag camps from the Political Repression Victims Database collected by the historical and human rights association Memorial.[22] Similarly, we also use data on the destination locations of Soviet enterprises evacuated to the east of the USSR during WWII, collected by Markevich and Mikhailova (2013).

Geographical variables.—We also assembled a broad set of geographic characteristics for the destinations of ethnic deportations. We use these variables for the balancing tests and some as controls in regressions. The information about inland water areas and railroads comes from DIVA-GIS.[23] The data on temperature and precipitation come from the Geography Department at the University of Delaware.[24] The information on soil suitability for high and low inputs and the measure of ruggedness come from the FAO GAEZ dataset.[25] We also collected data on the location of historical and present-day capital cities. Using digital maps, we calculate distances to water areas, to railways, to past and present capitals, to Gulag camps, and to the destination locations of enterprises evacuated during the war.

Table A2 in the online appendix presents summary statistics of all variables used in the analysis.

[22]The data are visualized here: http://old.memo.ru/history/nkvd/gulag/maps/ussri.htm (accessed on April 24, 2019) and the information about Memorial can be found here: https://www.memo.ru/en-us/memorial/ (accessed on April 24, 2019).

[23]http://www.diva-gis.org, accessed on April 24, 2019.

[24]http://climate.geog.udel.edu/~climate/html_pages/download.html, accessed on April 24, 2019.

[25]http://www.gaez.iiasa.ac.at, accessed on April 24, 2019.

3.2 Variation in the group composition of ethnic deportees at destination

Panel B of Figure 2 maps the spatial variation that we exploit. It shows the share of Protestants among all Protestant and Sunni Muslim deportees (over 87% of all ethnic deportees) by municipality (district, *rayon*). For presentation purposes, the figure zooms into the geographic area which was the destination of the largest number of ethnic deportees. Thick lines on the figure represent regional boundaries. The map shows that the largest differences in the composition of ethnic deportees were across regions. This is consistent with the historical narrative as the central authorities determined the destination region for each deportee group. However, it is also evident from the figure that there is a lot of within-region differences in the composition of ethnic deportees across municipalities, which is important for our analysis.[26]

We match the destinations of ethnic deportations to the location of residence of respondents in the Life in Transition survey. In order to do this, we calculate the number of deportees of each ethnic group deported to localities within a 30-kilometer travel distance from each LiTS Primary Sampling Unit (PSU). Out of 375 LiTS PSUs in the five considered countries, Russia, Kazakhstan, Uzbekistan, Kyrgyzstan, and Tajikistan, 233 PSUs had an ethnic deportation within a 30-kilometer travel distance. We use a 30km travel distance to match LiTS PSUs to deportation locations for the following reasons. For many deportations, we could determine their destination at the level of municipality, rather than the exact settlement. The NKVD deportee census provides information on the distances between village settlements of deportees and the local NKVD offices, which kept their record (*spetskommendatura*), and between the local NKVD office and the center of the municipality. The median of both of these distances is about 30 kilometers. To construct 1939 population statistics in the 30-kilometer radius around each PSU, we use a 1939 digital map to calculate population density in each 1939 municipality and then multiply these densities by the area of a 30-kilometer radius circle. As reported below, our results are robust to using alternative buffer thresholds with radii between 20 and 40 kilometers.

Figure A6 in the online appendix presents the religious composition of deportees in each of these 233 PSUs with an ethnic deportation in its vicinity. 56 of these PSUs are in Kazakhstan, 62 – in Kyrgyzstan, 59 – in Uzbekistan, 31 – in Tajikistan, and 25 are in Russia. In Figure A7, we summarize the variation in the data at the level of LiTS respondents. The figure presents the distributions of the number and of the share of Protestant deportees across observations in our sample.

[26] Figure A3 in the online appendix presents the map showing the composition of deportation destinations by traditional religion of ethnic deportees, i.e., including non-Protestant and non-Sunni Muslim deportees.

In Figure A8, we present the distribution of the ratio of the number of deportees to the 1939 population across LiTS PSUs. The mean of this ratio is 0.18 and the median is 0.042. As mentioned above, it is a very crude measure of the share of deportees in the total post-war population of deportation destinations because of the population losses during the war; yet, this is the best available measure.

4 Empirical strategy, identification assumptions, and balancing tests

In our empirical strategy, we link the gender norms of respondents in PSUs that were historically exposed to ethnic deportations to the religious composition of these deportations, controlling for region fixed effects, the size of the pre-war local population, and a variety of historical and geographical characteristics. We consider the traditional religion of deportee groups, Protestant vs. Muslim, as a proxy for their pre-deportation gender norms. The main identification assumption is that, conditional on region fixed effects and the presence of deportation near a PSU, the identity of deportees (e.g., their religion, ethnicity, and, as a consequence, cultural characteristics) was orthogonal to any unobserved determinants of the gender norms of the local population.

This identification assumption is untestable, as it concerns unobservables. However, both the historical narrative and the balancing tests which we present below provide strong support for this assumption. In addition, after presenting the main result in Section 5 below, we address identification challenges in two ways: (1) by using techniques developed by Altonji, Elder and Taber (2005) and Oster (2017) to show that it is very unlikely that variation in unobservables could drive our results; and (2) by showing that there are no pre-trends using the education of the mothers of respondents as the outcome of interest.

4.1 Historical rational behind the identification assumption

The between-region allocation of deportees to their destinations was designed by the central authorities and could have been guided by ideas of the authorities about the potential effects of mixing different ethnicities at deportation destinations. However, as historians argue, the within-region allocation of ethnic deportees across districts was determined by the need for manual labor at the time of the arrival of each group of ethnic deportees to the main railway station of each destination region. Local administrations were looking for healthy and strong men and women, as physical labor was the main occupation of ethnic deportees at destinations. Importantly, the local native population was fairly homogeneous within destination regions before the deportations (confirmed by the balancing tests, presented below), making it implausible that rep-

resentatives of different districts within regions had different preferences about which groups of deportees to accept into their localities.

4.2 Balancing tests

In Table 1, we present the results of three sets of regressions aimed to establish correlates of the main treatment variable. In the first column, we address the question of what observable characteristics correlate with the presence of an ethnic deportation in the vicinity of a particular LiTS PSU. The second and the third columns present the correlates of the share of Protestants among deportees across localities that were the destinations of ethnic deportations. In the second column, the sample is comprised of all such localities, and in the third column, the sample is restricted to localities that include LiTS PSUs with ethnic deportation in the vicinity and, therefore, are in our baseline sample.

In Panel A, we consider a wide range of geography and climate characteristics, such as distances to the closest water area, railroad, Gulag camps, and capital city, as well as local ruggedness, soil suitability, precipitation, and temperature. To check for a possible confounding policy, we also look at whether the district was also a destination location of evacuated industrial enterprises in 1941. In Panel B, we focus on population characteristics from the 1939 Soviet census: the size of the local population and of the local ethnic composition. In Panel C, we examine the balance in terms of locality population characteristics from the 1897 Russian empire census: population density, literacy rate, urbanization, and the shares of employed in agriculture, industry, and services, the share of employed in white collar jobs, religious composition, the literacy rate, and the literacy rate among women. In all regressions, we rely on the variation within subnational administrative units. In Panels A and B, we control for fixed effects at the level of a Soviet subnational region; in Panel C, we control for fixed effects at the level of 1897 Russian empire provinces, the analogue of the region in the Russian empire.[27]

In Column 1, we regress these characteristics one by one on the dummy indicating that the LiTS PSU was a destination of ethnic deportation. The results clearly indicate that the location of deportation destinations was not random: the majority of the geographical variables and many historical variables are strongly correlated with the presence of deportations even within regions. This is consistent with the historical narrative that deportees were assigned to localities with a higher demand for manual

[27] As the data from the 1897 Russian empire census are at the level of Russian empire counties (*uezd*), which are, on average, larger than Soviet districts, in Panel C, we cluster at *uezd*-level. In Panels A and B, the standard errors are corrected for spatial correlation within a 150km radius around the district centeroid, similarly to our baseline specification, described below.

labor.[28]

Columns 2 and 3 present specifications in which we regress these variables on the local share of Protestants among deportees controlling for the total number of ethnic deportees and the shares of the deportees with traditional religion other than Protestantism (the treatment) or Sunni Islam (the comparison group). In sharp contrast to the results from Column 1, there are few significant correlates of the share of Protestants among ethnic deportees across localities that were the destinations of ethnic deportations. In addition, in all cases where there is a significant correlation, it is not robust to the choice of sample: either all districts that were the destinations of ethnic deportations (Column 2) or only those districts that are in the vicinity LiTS PSUs (Column 3).[29]

Overall, we conclude that, conditional on subnational-region fixed effects, a battery of geographical, historical, and pre-deportation population characteristics are largely balanced across deportation destinations with different group compositions of deportees, just as the historical narrative suggests.

4.3 The main econometric specifications

We aim at estimating the effect of exposure of the local population to deportee groups with different gender norms, using the responses of LiTS participants about their gender attitudes and behavior as outcomes. Even though the vast majority of the deportees left when they were allowed to do so, some stayed. If there are any descendants of deportees still in the destination localities, we ensure that they are not in our sample by restricting the sample to respondents from the majority ethnic group in each country, i.e., Russians in Russia, Kazakhs in Kazakhstan, Uzbeks in Uzbekistan, Kyrgyz in Kyrgyzstan, and Tajik in Tajikistan. We also present robustness of the results to restricting the sample to respondents whose ancestors in 1939 lived in the same region as them.

We estimate two alternative specifications: the first one focuses on the effect of the numbers of deportees from different groups in the vicinity of the respondent's residence, and the second one—on the effect of the shares of deportees from different groups.

The first specification estimates the following cross-sectional equation on the sample

[28]For example, figure A9 in the online appendix illustrates one of determinants of the deportation destinations, proximity to railroads.

[29]Below, we show that our main results do not change if we include in the list of covariates the variables for which we found statistically significant correlations in Columns 2 and 3, or if we exclude them from our main specification.

of all localities (LiTS PSUs) in Russia and Central Asia:

$$Y_i = \beta_0 + \beta_1 \log(Protestant\_Deportees_{l_i}) + \beta_2 \log(Muslim\_Deportees_{l_i}) + \\ + \beta_3 \mathbb{1}\{Deportation_{l_i}\} + \beta_4 \log(Population\_1939_{l_i}) + \sigma' \mathbf{D_{l_i}} + \gamma' \mathbf{X_{l_i}} + \delta' \mathbf{C_i} + \mu_{r_{l_i}} + \epsilon_i, \quad (1)$$

where i indexes survey respondents and l_i indexes the locality (LiTS PSU) of respondent i. The main explanatory variables are the log numbers of Protestant and Sunni Muslim deportees in the 30-kilometer travel-distance radius around the locality l, $\log(Protestant\_Deportees_{l_i})$ and $\log(Muslim\_Deportees_{l_i})$, respectively.[30] The main control variables necessary for identification are the subnational region fixed effects ($\mu_{r_{l_i}}$, where r denotes the region to which locality l belonged) and a dummy variable indicating whether there were any Protestant or Muslim deportees in the vicinity of the locality l, $\mathbb{1}\{Deportation_{l_i}\}$. Region fixed effects ensure that we rely on within-region variation. The dummy for the presence of a Protestant or Muslim deportation in the vicinity of the locality accounts for the selection of localities into the deportation destinations.

Y stands for the following outcome variables: dummy variables indicating whether the respondent either "strongly disagrees" or "disagrees" with each of the following statements: *(1) "A woman should do most of the household chores even if the husband is unemployed"; (2) "It is better for everyone if the man earns the money and the woman takes care of home"; (3) "Men make better political leaders than women do"*; the first principal component of these three outcomes; a dummy variable indicating whether the respondent tried, successfully or not, to start a business; a dummy variable indicating whether the respondent is a member of a women rights association; and a dummy variable indicating whether the mother of the respondent completed tertiary education.

Alternatively, in specification 1, instead of $\log(Protestant\_Deportees_{l_i})$ and $\log(Muslim\_Deportees_{l_i})$, we include separately the logs of the number of Germans, Chechens, Crimean Tatars, and Meskhetian Turks, the four largest deportee groups. Chechens were rehabilitated in 1956-1957, unlike these other three groups of deportees who were never "pardoned" and had to stay in their deportation locations until the dissolution of the USSR. However, the difference in the length of exposure between different subgroups of Muslim deportees, was not the only difference. Chechen deportees were more numerous, and possibly, they had more extreme gender norms compared to other Muslim deportees, as some Soviet anthropologists argue (e.g., Ro'i, 2000).

[30] Throughout the paper, we refer to Sunni Muslims as Muslims because the number of Shia Muslim deportees was negligible: only 0.2% of all ethnic deportees were Shia Muslims, as can be seen from Table A1 in the online appendix. Whether we control for them or include them in the group of Muslim deportees makes no difference for any of the results.

To compare locations where the size of the local native population was similar, we control for the log population in 1939 in the 30-km-radius circle around the locality l, $Population\_1939_{l_i}$. To have a clean comparison between Protestant and (Sunni) Muslim deportees, we control for the log numbers of ethnic deportees in the 30-kilometer travel distance radius around the respondent's locality separately for each of the other religions: Orthodox Christians, Buddhists, Shia Muslims, and Catholics and Jews together, who we cannot disentangle because both Polish Catholics and Polish Jews were deported together. We also control for the log number of nonethnic deportees. (These controls are denoted by $\mathbf{D}$.)

In addition, we control for potential locality-level confounds, such as dummies for urban locations and for capital cities, distances to the closest railroad, capital city, Gulag camp, and to the closest water area, ruggedness, summer and winter average temperatures and precipitation, and soil suitability with low- and high-input agriculture ($\mathbf{X}$). We also control for respondent-level determinants of gender attitudes: age, education, log of income, religious denomination, and gender ($\mathbf{C}$). As some of the individual controls can be endogenous, we present results with and without these controls. We also present robustness of the results to controlling for a larger set of pre-deportation population characteristics. As shown below, our main results are unaffected by the inclusion or exclusion of any of the $\mathbf{X}$ and $\mathbf{C}$ covariates.

The second specification uses the share of Protestants among all deportees in the vicinity of locality l, $Protestant\_Deportee\_Share_{l_i}$, as the main explanatory variable:

$$\begin{aligned} Y_i = \alpha_0 + \alpha_1 Protestant\_Deportee\_Share_{l_i} + \alpha_2 \log(Deportation\_Size_{l_i}) + \\ + \alpha_3 \log(Population\_1939_{l_i}) + \sigma' \mathbf{M_{l_i}} + \gamma' \mathbf{X_{l_i}} + \delta' \mathbf{C_i} + \mu_{r_{l_i}} + \epsilon_i. \end{aligned} \tag{2}$$

Equation 2 is estimated on the sample of all localities (LiTS PSUs) with an ethnic deportation settlement in the vicinity.[31] In this specification, we control for the log of the total number of deportees in the same buffer around the respondent ($Deportation\_Size$) and for the shares of all other religious groups of deportees, other than Sunni Muslims, in the vicinity of the respondent's locality ($\mathbf{M}$). The inclusion of these controls ensures that the comparison group is the share of (Sunni) Muslims deportees. As in equation 1, we control for the pre-deportation population size and verify robustness to controlling for historical and geographical characteristics of the locality ($\mathbf{X}$) and socio-economic characteristics of the respondent ($\mathbf{C}$).

To account for spatial correlation in the error term, in both specifications 1 and 2, we correct standard errors for spatial correlation within a 150km radius around

[31] All PSUs with an ethnic deportation had at least some Muslim or Protestant deportees.

the locality (Conley, 1999) and present robustness to alternative assumptions about variance-covariance matrix.

5 The main results

5.1 Baseline

Table 2 presents the main result for gender attitudes as an outcome. In this table, we use the baseline set of controls and establish robustness of the results in the next subsection. Panels A and B focus on the estimation of equations 1 and 2, respectively. Even numbered columns show the results for female respondents and odd columns – for male respondents. In the first six columns, we consider as outcome variables dummies for individual responses to each of the three questions about gender attitudes with 1 indicating disagreement with a discriminatory statement. The outcome variable in Columns 7 and 8 is the composite measure of progressive gender attitudes, i.e., the first principal component of the three individual measures, normalized to vary between 0 and 1.

The specification with the log numbers of deportees as the main explanatory variable (Panel A) yields significant positive coefficients on the log number of Protestant deportees in the vicinity of the respondent's locality for all outcomes and both genders. The coefficients on the log number of Muslim deportees are negative in six out of eight specifications; but they are substantially smaller in absolute value than the coefficients on the log number of Protestant deportees, and are never statistically significant. In all regressions but one, the test for the equality of coefficients yields that the exposure to Protestant and Muslim deportees had a different effect on the gender attitudes of the local population. Furthermore, despite the fact that the coefficients on the log number of Muslim deportees are less precisely estimated, in five out of eight specifications, we can reject the hypothesis that the magnitude of the effects of exposure to Protestant and Muslim deportees is similar in absolute value. This suggests that the effect of the exposure to Protestant deportees on gender attitudes is higher than the effect of the exposure to Muslim deportees. P-values for both of these tests are presented at the bottom of Panel A.

The results for the effect of the share of Protestants among deportees (presented in Panel B) are consistent with those for levels: the coefficients on the share of Protestants among Protestant and Muslim deportees are positive for all outcomes and statistically significant in all, but two specifications. As the results for the three different individual questions about gender attitudes are very similar, in what follows, we focus on the first principal component as the main attitudinal outcome. The results are more precisely estimated using this composite measure of gender attitudes because this measure is

less noisy than the measures based on individual questions.

Table 3 presents the same specifications for the two respondent-level behavioral outcomes: (attempted) entrepreneurship and membership in women's rights associations. The most striking result is for entrepreneurship among women (Column 1). In localities with a higher number of Protestants among ethnic deportees, women today are significantly more likely to have tried to start a business; whereas in localities with a higher number of Muslim deportees, the effect is reversed: women today are significantly less likely to have tried to start a business. In sharp contrast to the results for female respondents, we find no effect of the composition of ethnic deportations on entrepreneurship rates among male respondents (Column 2). The tests for the equality of the coefficients of interest between Columns 1 and 2 yield that the differences are significant at 1% level. The absence of the results for men can be interpreted as a placebo test: it suggests that the differences in the behavior of women that we document in Column 1 are not driven by unobserved characteristics of the localities they live in. If the within-region composition of ethnic deportees had been correlated with unobserved factors that are correlated with entrepreneurship, we would have found similar effects for men and women. The fact that there is no association between the composition of ethnic deportees in a locality and male entrepreneurship rates is consistent with our identification assumption that the differences in the composition of ethnic deportees affect our outcomes through the differences in exposure to groups with different gender norms rather than differences in the environment.

We also find that an increase in the number of Protestant deportees is associated with significantly higher rates of membership in women's rights associations among men and women (as shown in Columns 3 and 4 of Panel A). As with the attitudes, the effects of the exposure to Muslim deportees on this outcome are imprecisely estimated, but the difference in magnitude of the coefficients on Protestant and Muslim deportees is statistically significant in the sample of male respondents. In Panel B, we show that the share of Protestants among deportees has a positive coefficient for all outcomes—with the exception of the placebo estimation for male entrepreneurship—and is statistically significant for female entrepreneurship (Column 1) and membership in women's right advocacy associations among men (Column 4). In what follows, we focus on female entrepreneurship as the main outcome measuring respondent's behavior because the rates of membership in women's right advocacy associations are, on average, very low; and therefore, the variation in this outcome is limited.

Overall, the magnitude of the effects is substantial. If we compare two localities within the same subnational region, such that one was historically exposed to an average-sized ethnic deportation comprised only of Protestants (i.e., mostly, Germans) and the other – only of Sunni Muslims (mostly, Chechens), the residents of the first

locality today are 16 to 18 percentage points more likely to hold progressive, i.e., more egalitarian, gender attitudes than the residents of the second locality.[32] In addition, in the first locality, women are 13 percentage points more likely to have tried themselves at entrepreneurship. The standard deviation of the share of Protestants among ethnic deportees in locations of ethnic deportations is 35%, which means that a one standard deviation difference in the composition of ethnic deportees is associated with about a 6-percentage-point difference in gender attitudes. These magnitudes are large relative to the average shares of the population holding progressive gender attitudes (19.5% among women and 16.3% among men). In addition, a one standard deviation difference in the composition of ethnic deportees is associated with a 4.6 percentage point difference in the entrepreneurship rate among women (compared to a 11.6% mean value for this outcome.)

The magnitude of the intensive margin is implied by the specification in levels: a 10% increase in the number of Protestant deportees in the vicinity of a locality leads to a 2.6 percentage point increase in the share of women with progressive gender attitudes and a 1.7 percentage point increase in the share of men with progressive gender attitudes today. It also leads to a 0.9 percentage point increase in the rate of (attempted) entrepreneurship among women. A 10% increase in the number of Muslim deportees leads to a decrease in female entrepreneurship rates by 1.2 percentage points.

5.2 Controls and variation in observables and unobservables

In Tables 4 and 5, we establish robustness of the main results to changes in the set of covariates.

Table 4 presents the results of the estimation of equation 1. In Panel A, we consider the first principal component of gender attitudes as the dependent variable. We pool respondents of both genders together because the results for male and female respondents for this outcome are similar (as reported in Table 2). In Panel B, the dependent variable is the entrepreneurship dummy and we focus on the sample of female respondents.

In Column 1, we restate the main result using the baseline set of controls considered in Section 5.1 above. In Column 2, there are no controls with the exception of region fixed effects, which are necessary to the main identification assumption. In Column 3, we additionally control for selection of localities into deportation destinations, which is also important for identification. In Column 4, we add controls for the size of non-Protestant and non-Muslim deportations in the vicinity of the locality, forcing the

[32] This can be seen from the magnitude of the coefficients on the share of Protestant deportees in regressions for the first principal component of all gender attitudes that, i.e., the last two columns of Panel B of Table 2.

comparison to be between the exposure to Protestant and to Muslim deportees. In Column 5, we also add locality-level geographical controls and the size of the 1939 local population. Column 6 adds respondent's age, gender, and religion. The baseline specification (Column 1) adds to this list of covariates two potentially endogenous but important determinants of gender norms: respondent's income and education. In Column 7, we add all historical covariates that show any sign of misbalance in the balancing Table 1. Finally, in Column 8, we add another two potentially endogenous variables, educational attainment of respondent's parents, into the set of covariates. We find that the results do not depend on the set of controls: both the point estimates and the significance levels are stable across specifications once we control for selection into deportation locations.

In Panels A and B of Table 5, we repeat this exercise for the effect of the share of Protestant deportees, i.e., the estimation of equation 2. Panel A presents the results for the gender attitudes and Panel B – for female entrepreneurship.[33] Again, we find that the results are robust and do not depend on the set of covariates.

Following the methodology developed by Altonji, Elder and Taber (2005) and Oster (2017), we can test whether our results are likely to be driven by variation in unobserved confounders under the assumption that observables represent unobservables. We focus on the effect of the share of Protestants among deportees because, in this specification, there is only one explanatory variable of interest. First, for each set of covariates considered in different columns of Table 5, we construct an index of covariates that is the best predictor of our treatment variable by taking the fitted value from a regression of the share of Protestants among deportees on these covariates. Then, we regress the outcome variables on these indices controlling for region fixed effects. The results are presented in the first two rows of Panels C and D of Table 5. The predicted-from-observables share of Protestant deportees is not significantly related to our outcomes of interest. Furthermore, in the last row of Panels C and D of Table 5, we present Oster's δ statistics with region fixed effects kept as necessary controls. Following Oster (2017), we set the value of $R^2_{\max}$, the R^2 from a hypothetical regression of the outcome on treatment and both observed and unobserved controls, to be equal to $1.3\tilde{R}^2$, where $\tilde{R}^2$ is the R^2 from the corresponding regression from Panels A and B of Table 5. Once we include controls for the exposure to other deportation groups and basic locality characteristics, the magnitude of Oster's statistics makes it very unlikely that the results can be explained by variation in unobservables.

[33] As the specification in shares relies on the subsample of localities with ethnic deportations, Table 5 has 7 columns and not 8 as in Table 4. This is because the dummy for being a destination of ethnic deportations—which is added to the set of covariates in Column 3 of Table 4—is always equal one in Table 5.

5.3 Testing for pre-trends

The educational attainment of respondents' mothers is the only outcome variable which we can measure both pre- and post-treatment. We predict the birth year of the mother of each respondent using respondent's age and the aggregate data on the average age of women giving birth by women's birth cohort in the USSR. Then, we compare the rate of attainment of tertiary education by mothers of respondents, depending on the composition of deportees in the respondent's locality and the timing of their mothers' compulsory schooling.

First, we group all respondents into two birth-cohort groups. The first group consists of respondents with mothers old enough to have finished compulsory schooling before WWII and, therefore, before the arrival of the deportees, and the second one consists of all other respondents, i.e., those with mothers who were at the age of compulsory schooling during or after WWII. Column 1 of Table 6 presents the results of estimation of the effect of living in localities with Protestant or Muslim deportees on mothers' education separately for these cohort groups. This is operationalized by adding interactions of the main treatment variables with birth-cohort group dummies. Panels A and B correspond to the specifications in levels and in shares, respectively. As in the baseline specification for the attitudes of respondents, we include region fixed effects and other main control variables. Because the outcome is specific to the mother of the respondent, we omit the respondent's socio-economic controls, making the list of covariates similar to Column 6 of Table 1 and Column 5 of Table 2. In addition to these controls, we include dummies for each birth-cohort group into the list of covariates.

We find no effect of the group composition of deportees in the vicinity of a locality on the educational attainment of mothers who completed their compulsory schooling before WWII, i.e., before the arrival of deportees. In contrast, the group composition of deportees matters for the educational attainment of mothers who did their compulsory schooling during or after WWII. In particular, exposure to Protestant deportees during the time of compulsory primary and secondary education had a significant positive effect on the probability of mothers of respondents to complete tertiary education. There is also a negative, but imprecisely estimated effect of exposure to Muslim deportees. A 10% increase in the number of Protestant deportees in the vicinity of the locality led to a 0.6 percentage-point increase in the tertiary-education attainment of respondents' mothers who attended school during or after the deportations. Under the assumption that it is harder to re-enroll in school after dropping out than to continue education without a break, these results suggest that being educated alongside the children of Protestant deportees increased the probability that local native girls continued their education beyond compulsory schooling. The fact that there is no result for cohorts of

mothers who finished their compulsory schooling before the war strongly suggests that there are no pre-trends.

Second, we split the second group of respondents into two groups: mothers who were of the age of compulsory schooling during WWII, i.e., at the time of newly arriving deportees (and the time when education was likely to be disrupted) and mothers who started compulsory schooling after the end of the war and, therefore, did all of their schooling after the deportees had arrived.[34] Column 2 presents the results: it shows that the effects are significant only for the cohort of mothers who went to school after WWII.

Panel A of Figure 4 provides an illustration of these results. It presents the estimated coefficients in regressions of mother's education on the share of Protestant deportees (along with 90% confidence intervals) by the cohort group of respondents. The first two groups on these graphs correspond to the first two groups from Column 2 of Table 6, i.e., mothers educated before WWII and mothers educated during WWII. The other three groups represent an equal-sample split of the group of respondents with mothers educated after WWII. The figure shows that the effect is positive and statistically significant starting with the oldest cohort that went to school right after the war.

Panel B of the Figure 4 presents a graph with exactly the same specification, but for gender attitudes of respondents in the same cohort groups. It shows that the effect of exposure to deportees on the gender attitudes of respondents is not fully mediated by its effect on the level of mother's education. In particular, there is a strong and significant effect of the share of Protestant deportees on gender attitudes of respondents both for those cohorts whose mothers have completed compulsory schooling before deportees arrived and for those cohorts whose mothers went to school after deportees arrived.[35]

Furthermore, as cohorts can be considered as a time dimension, we can estimate a specification that relies only on variation between cohorts within the same localities, i.e., instead of a region-fixed-effects specification that compares outcomes in different localities of the same region, we can estimate the specification with locality fixed effects. Column 3 of Table 6 presents the result of this difference-in-differences specification. The coefficients on the interaction terms with the dummy for the cohort group of mothers who finished school during or after WWII represents the difference between the rates of attainment of higher education between this cohort group and the cohort group

[34]The mothers of respondents from the youngest group went to school together with children of German, Crimean Tatar, and Meskhetian Turk deportees—as these groups were never pardoned; and depending on their age, either together with children of Chechen deportees or after Chechens had left after Khrushchev's Thaw.

[35]Figure A10 in the online appendix illustrates the corresponding results from estimation of equation 1 presented in Panel A of Table 6.

of mothers who finished school before WWII. This difference is statistically significant in localities with predominantly Protestant and with predominantly Muslim deportees with the expected signs: positive for localities with Protestant deportees and negative for localities with Muslim deportees. In Column 4, as above, we consider mothers who finished school during WWII and after WWII separately. We keep the cohort of mothers who finished compulsory schooling during the war as the comparison group, presenting the coefficients on the interactions with dummies for cohorts who finished schooling before WWII and after WWII. The effects are imprecisely estimated, but the pattern of the coefficients confirms the absence of a pre-trend: the coefficient on the interaction between the share of Protestant deportees and a dummy for the cohort of mothers who finished schooling before WWII is -0.026 with standard error of 0.047, whereas the coefficient on the interaction with a dummy for the cohort of mothers who finished schooling after WWII is 0.061 with standard error of 0.053. The p-value from the test of equality of these coefficients is 0.03. Panel C of Figure 4 visualizes these results splitting the group of mothers who finished school after WWII in three equal-size groups. This figure shows that the difference between the comparison group (Cohort 2) and the first cohort after the war (Cohort 3) is precisely estimated, while the comparisons with the subsequent cohort groups are more noisy, although they have the same sign. In contrast, the difference between Cohorts 1 and 2 (i.e., mothers who finished school before and during the war) is negligible.[36]

5.4 Ethnic groups of deportees

In Table 7, we focus on the ethnic rather than the religious groups of deportees. In particular, we consider the effect of exposure to the four largest groups of deportees: Germans, Chechens, Crimean Tatars, and Meskhetian Turks separately. For this analysis, in order to have a clear comparison group, in addition to our baseline controls, we also control for the log numbers of *other* Muslims and *other* Protestants among deportees (who were very few).[37]

First, the results confirm that the effect of exposure to German deportees is the same as the effect of exposure to all Protestant deportees, which is expected as these groups were essentially the same. Second, the sign of the effects of exposure to each subgroup of Muslim deportees on female entrepreneurship is consistently negative, and this effect is significant for exposure to the two largest groups of Muslim deportees, Chechens and Crimean Tatars, and is the largest in magnitude for Chechens. Third, we

[36]Panel C of Figure A10 in the online appendix illustrates the corresponding results from the estimation in levels.

[37]Ethnic Germans constituted 96.5% of all Protestant deportees; and Chechens, Crimean Tatars, and Meskhetian Turks together constituted 95% of all Sunni Muslim deportees.

find a small negative and marginally significant effect of exposure to Chechen deportees also for gender attitudes, but only among female respondents. In absolute value, the point estimate of the coefficient estimating the effect of exposure to Chechens on gender attitudes is about one half of the effect of exposure to Germans, but we cannot reject the equality of the absolute magnitude of these opposite-sign effects. In contrast, there is no effect of exposure to Crimean Tatars or Meskhetian Turks on gender attitudes: the point estimates do not have a consistent sign and the standard errors are large.

The fact that we do find results for Chechens, who had the shortest length of stay at the deportation locations, suggests that 15 years of exposure was enough to change the attitudes of the local population. Chechen deportees were more numerous than other Muslim deportees and, as some anthropologists argue, their gender norms may have been somewhat more extreme.

5.5 Discussion of the results on the diffusion of norms of gender equality vs. of gender discrimination

Overall, we find robust evidence of a positive effect of exposure to Protestant deportees on gender norms manifesting itself both in attitudes (i.e., disagreement with discriminatory statements) and behavior (i.e., female entrepreneurship, tertiary education of respondents' mothers, and membership in women rights associations). A negative effect of the exposure to Muslim deportees on female entrepreneurship is also strong and robust. At the same time, the effect of exposure to Muslim deportees on gender attitudes is small in magnitude and insignificant, with the exception of a small, but significant, effect of exposure to Chechens for female respondents. Taken together this evidence suggests that the norms of gender equality diffuse more easily that the norms of gender discrimination. What could potentially explain this asymmetry?

The theoretical literature on cultural transmission highlights the costs and benefits of adopting cultural traits (see, for instance, a survey by Bisin and Verdier, 2010). In post-war USSR, the costs of adopting more gender equal norms were smaller and the benefits of adopting these norms were larger than those of adopting norms of gender discrimination. First and foremost, norms of gender equality were in line with the official ideology, which implies that adopting non-gender-equal norms may have been costly due to possible retribution by the state. Second, there were tangible economic benefits from adopting norms of gender equality: educated women earned higher wages and had more stable jobs in the Soviet Union. Both of these considerations imply that progressive gender norms should diffuse more. Finally, it could also be the case that Soviet Germans provided a better role model, as they could have been perceived by local population as more educated, more hard-working, and more cooperative than Muslim deportees, and, in particular, Chechens, who were particularly uncooperative

(Pohl, 2008, p. 212). If so, this could have made their culture more appealing to the local population.

We cannot distinguish between these different explanations for why the effects of exposure to Muslim deportees on the self-expression of gender-related attitudes are generally weaker than the effects of exposure to Protestant deportees.

5.6 Additional robustness checks

In the baseline estimation, we use the Conley correction of standard errors for spatial correlation at a radius of 150km. In Table A5, we report robustness to alternative assumptions about the variance-covariance matrix. The results are robust to clustering at the LiTS-PSU level, at the subnational region level, and to increasing the Conley radius to 200 kilometers. Table A6 reproduces the main results using LiTS-PSU-level aggregated data.

Our baseline measure of the exposure of local population to deportees uses the numbers of Protestant and Muslim deportees in the 30-kilometer travel distance vicinity of LiTS PSUs. Figures A11 and A12 in the online appendix visualize the results of a robustness exercise in which we change the radius in the definition of the vicinity of a locality used for calculating the numbers of deportees around the LiTS PSUs. We plot the estimated coefficients along with their confidence intervals on the explanatory variables of interest for the main outcomes with radii equal to travel distances of 10, 20, 30, 40 and 50 kilometers. We find that the results are the strongest with the 30-kilometer radius, but they are largely robust to using radii between 20 and 40 kilometers.

6 Heterogeneity

6.1 The number of deportees relative to the local population

How is the effect of exposure to deportees with different norms affected by the number of deportees relative to the local population? In order to answer this question, we look at the heterogeneity of the effect of the share of Protestant deportees depending on the size of the ethnic deportation relative to the 1939 local population. The mean of the ratio of the number of ethnic deportees to the local pre-war population is 0.11, the median is 0.042.[38] We split the sample into four equal-size groups with respect to this ratio and estimate the effect of the share of Protestant deportees (as above, holding Muslim deportees as the comparison group) separately in each quartile. The median values of this ratio in the four groups are: 0.004, 0.02, 0.08, and 0.28.

[38] Appendix Figure A8 presents the histogram of the ratio of the number of ethnic deportees to the local pre-war population.

Figure 5 in the main text presents the results in a graphical form and the corresponding table is presented in the online appendix Table A3. Panel A of the Figure focuses on gender attitudes and Panel B on female entrepreneurship. We find positive effects in the first three quartiles for both outcomes. The biggest in magnitude effect is in the third quartile, i.e., where—under a hypothetical scenario of no war-related population losses—deportees would have constituted roughly 4 to 10 percent of the post-war population.

The results for the fourth quartile differ sharply between the two outcomes: for gender attitudes, the effect is essentially zero whereas for female entrepreneurship, it is large and significant. A likely reason for lower horizontal transmission of attitudes towards gender equality in the top quartile is that, when there were too many deportees in a locality, the likelihood that the deportees and local population were segregated was higher and, therefore, it was less likely that they had direct contact with each other. In the top quartile, the ratio of deportees to local pre-war population ranges from 0.13 to 5.6 with a median of 0.28. This means that the arrival of deportees constituted a dramatic change in the size and composition of the local population (even if one does not take into account the fact that the population shrank during the war). In particular, this many deportees could not possibly have found accommodation among the locals; instead, they were charged with building their own barracks. It is also more likely that, when they were many, at work, deportees organized into self-sufficient work units. This suggests that one should expect fewer interactions between the local population and deportees and, thus, a smaller cultural-transmission effect in the top group.

It is noteworthy, however, that we do not find the same pattern for female entrepreneurship. One possibility is that the key difference between the effects on attitudes and on female entrepreneurship is that a large part of the overall effect on female entrepreneurship comes from the negative effect of exposure to Muslim deportees, whereas the effect on attitudes is driven mostly by the positive effect of exposure to Protestant deportees. It could be that a discouragement of women from taking leadership roles (necessary for female entrepreneurship) may transfer from one group to another even when groups are rather segregated. It could also be the case that the effect on female entrepreneurship is relevant only for a small minority of the population (simply because the rates of female entrepreneurship are rather low) and there could be heterogeneity in the way that cultural norms diffuse to different subgroups within the local population. Furthermore, female entrepreneurship trait may diffuse through a role-model effect even when groups are segregated, if representatives of one group could observe behavior of representatives of the other group at a distance.

6.2 Cultural distance

To examine whether cultural distance between the deportees and the local native population affects the horizontal transmission of norms, we construct measures of religious and linguistic distances between respondents and deportees following the literature on cultural distances (surveyed in Spolaore and Wacziarg, 2016).

We use the religious tree developed by Mecham, Fearon and Laitin (2006)—and reproduced on pp. 190-191 of Spolaore and Wacziarg (2016)—to define religious distance between each pair of a deportee group and a native-population group. In particular, we count the number of branches of the religious tree that one needs to climb in order to reach a common node starting from the nodes of the traditional religions of these groups. There are two traditional religions of the local majorities (and therefore, of the respondents in our sample): Russian Orthodox Christianity and Sunni Islam.[39] In Panel A of Table A4, we present the distances between the religions of native-population groups and traditional religions of the main ethnic deportee groups, Protestant Christianity and Sunni Islam. Native Russians are closer to Germans than to Muslim deportee groups; the converse is true for native Central Asians, who share the same religion with Muslim deportees.

Linguistic distances between ethnic groups are constructed following the methodology of Bakker et al. (2009), based on an adaptation of the "Levenshtein distance" to a pre-defined set of basic notions in each language.[40] The local ethnic majorities encompass four linguistic groups: Russian, Kazakh, Kyrgyz, Tajik, and Uzbek. We also consider the four linguistic groups of the deportees: German, Chechen, Crimean Tatar, and Turkish. Panel B of Table A4 presents the linguistic distances between each pair of these groups. Kazakh, Kyrgyz, and Uzbek languages are relatively close to the language of Crimean Tatars; the distances between these languages and the language spoken by Meskhetian Turks are only slightly more distant; all the other pairs of languages are fairly distant.

While Protestant deportees were predominantly German, many deportation localities included Muslim deportees of different linguistic groups. To calculate linguistic distance between the respondent and the mixture of Muslim deportees in the respondent's locality, we take an average of linguistic distances between the respondent's language and the languages of each of the Muslim deportee group in the vicinity of locality, weighted by the number of deportees in each group.

[39] There is small Shia religious minority in Central Asia; none of representatives of this minority are among LiTS respondents.

[40] The data and the code to calculate linguistic distances come from the Automated Similarity Judgment Program database (Wichmann, Holman and Brown, 2018), `https://asjp.clld.org` accessed on September 6, 2019.)

In Table 8, we test whether cultural distance matters for the horizontal transmission of gender norms. We add interaction terms between the log numbers of Protestant and Muslim deportees and the (demeaned) distances between the traditional religion and language of each respondent and the traditional religions and languages of Protestant and of Muslim deportees. In the case of linguistic distances, we also control for their direct effect (the religious distances are subsumed by the region fixed effect, as it is collinear with a respondent's traditional religion). The first five columns consider the effect on gender attitudes and the second five – on female entrepreneurship.

Column 1 presents heterogeneity of the effect on gender attitudes of the exposure to deportees by distance between the traditional religions of the local population and of deportees. The coefficient on the interaction term between the log number of Protestant deportees and the distance between the traditional religion of the respondent and Protestantism has the same sign as the direct effect of the exposure to Protestant deportees and is statistically significant, implying that Central Asians, on average, responded more to exposure to Protestant gender norms than did Russians. At the same time, there is no significant heterogeneity in the effect of exposure to Muslim deportees depending on the religious origin of the respondent. Column 6 presents results of the same specification, but for female entrepreneurship as the outcome variable. Here, we find no significant heterogeneity for the effect of exposure to Protestant deportees. But the coefficient on the interaction term between log number of Muslim deportees and the distance between the traditional religion of the respondent and Islam has the same sign as the direct effect of the exposure to Muslim deportees and is statistically significant. This implies that Russians, on average, responded more to exposure to Muslim gender norms than did Central Asians. For both outcomes, the result is that, if anything, distance between the traditional religions of the local population and those of deportees makes the effect larger.

Columns 2 and 7 show that there is no significant heterogeneity of the effect of exposure to deportees on either outcome with respect to linguistic distance if we do not allow the effect to differ by distance to the traditional religion simultaneously with allowing it to differ by linguistic distance. We include both sets of interactions in Columns 3 and 8. In addition to confirming the results on heterogeneity with respect to religious distances, we also find that there is a positive and marginally significant coefficient on the interaction term between the log number of Protestant deportees and the linguistic distance between the respondent's language and German for female entrepreneurship (Column 8), suggesting that linguistic distance also amplifies the effect of exposure to Protestant deportees.

As the distance from the traditional religions of respondents to either Protestantism or Islam do not vary between respondents in the subsamples of Central Asian respon-

dents and of Russian respondents, we examine the effect of linguistic distance restricting the sample to Central Asians.[41] First, in Columns 4 and 6, we replicate the main result in this subsample without including interaction terms. The results are generally robust with one exception: for the female entrepreneurship outcome, only the effect of exposure to Muslim deportees is significant, while the average effect of exposure to Protestant deportees is insignificant. In Columns 5 and 10, we add interactions with linguistic distance and find a negative and significant interaction between the log number of Muslim deportees and the linguistic distance to Muslim deportees for attitudes and a positive and significant interaction between the log number of Protestant deportees and the respondent's linguistic distance to German for female entrepreneurship. As above, these results also suggest that the effect of exposure to deportee groups is amplified by an increase in the cultural distance of the local population to deportees.

Overall, the evidence is consistent with the hypothesis that horizontal inter-group transmission of gender norms is stronger when groups are culturally (religiously and linguistically) more distant. Yet, this evidence is rather weak and cannot be considered conclusive: only some of the estimated coefficients on the interaction terms are statistically significant.

6.3 Can intergroup marriages drive our results?

We do not have data to pin down the exact mechanism at play. It is clear, however, that one can exclude intergroup marriages as the main mechanism behind the horizontal transmission of gender norms.

There were some intermarriages between Russians and Soviet Germans (Mukhina, 2005). However, all relatives of German deportees were given German passports after the fall of the USSR; and the vast majority of these mixed families left to Germany together with other German deportees in the early 1990s. Therefore, they are not in the sample and could not drive our results.

Furthermore, there were very few intermarriages between ethnic deportees and the local population of Central Asia due to racial animosity. As a consequence, we can exclude intermarriage as mechanism for the results in the subsample of respondents from Central Asia as well. As mentioned above, the results for the subsample of respondents from Central Asia are similar to the full sample with the exception of the insignificant average effect of exposure to Protestant deportees on female entrepreneurship, which is amplified by linguistic distabnce (see Columns 4, 6, and 7 of Table 8).

Overall, we conclude that informal interactions between the representatives of different groups (rather than intermarriages) must have led to horizontal cultural trans-

[41] The only-Russia subsample is too small. And there is also less within-region variation in the share of Protestant deportees in this sample.

mission. Our results on mothers' educational attainment, for example, point to the importance of contact at school as one of the places where norms diffused.

7 Alternative explanations: migration of nondeportee population

Theoretically, group composition of deportees could have triggered both selective in and out migration of the local non-deportee population depending on their cultural preferences because—unlike deportees—the non-deportee population was (relatively) free to move.[42] To address these alternative explanations, we use a LiTS question about the region of residence of respondents' ancestors before WWII. The respondents provided the name of the subnational region and of the country of residence of their ancestors in 1939, which we geo-referenced.

7.1 Selective inmigration

If the presence of deportees at destination locations attracted migrants with certain cultural characteristics, our results could be driven by selective in-migration. To rule out this alternative explanation of the results, we limit the sample to respondents who report that their ancestors in 1939 lived in the same subnational region as the respondent. Columns 1 to 3 of Table 9 replicate our main results in this sub-sample. Similarly to the baseline results, we find significant effects of exposure to Protestant deportees on both attitudes and female entrepreneurship and of exposure to Muslim deportees on female entrepreneurship. Given that restricting the sample to those whose families did not migrate before WWII does not change our results, selective in-migration after WWII into the destination locations of ethnic deportations is unlikely be a driver of our results.[43]

7.2 Selective outmigration

If those locals whose norms diverged the most from the norms of deportees were more likely to migrate into areas without deportations, our results could be driven by selective outmigration rather than cultural diffusion. To test whether local natives were more likely to migrate out of the deportation destination regions depending on the group composition of deportees, we consider the sample of LiTS respondents whose

[42]It is worth noting, however, that post-war mobility of population in the USSR was rather low, as the institution of *Propiska* created administrative restrictions on mobility for all Soviet citizens.

[43]However, this is only a partial test as the exact locality within the subnational region where respondents' ancestors lived before the war is not known, we cannot exclude migration within a subnational region.

ancestors before WWII lived in regions that during WWII became the destinations of ethnic deportations. The sample includes all such respondents in all LiTs countries. Then, we reshape the data so that the unit of observation is an ancestor of the respondent. Namely, we consider all ancestors who lived before the war in the regions that became the destinations of ethnic deportations during the war.[44]

First, we test whether the probability of family outmigration is related to the group composition of the deportees. We estimate a linear probability model in which we regress a dummy for whether the respondent's family outmigrated, (i.e., the respondent in 2016 lived in a different region from the region of his or her ancestor in 1939) on the log numbers of Protestant and Muslim deportees in the ancestor's region of origin (in Panel A) and on the share of Protestant deportees (in Panel B). As we only know the place of origin of respondent's ancestors at the level of subnational region, in contrast to all other regressions, we cannot control for region fixed effects in this analysis. We control for the fixed effects of the country of origin of the ancestor and of the country of the destination of the respondent. Standard errors are corrected for two-way clusters by respondent and by the region of the respondent's ancestor. The results are presented in Column 4 of Table 9. We find no significant effect of the size of Protestant and Muslim deportations in a region on the probability that people moved out of this region between 1939 and 2016.

However, the fact that the probability of outmigration is not related to the group composition of ethnic deportees does not mean that there was no *selective* outmigration. There could be no differential outmigration from regions with Protestant and with Muslim deportees, but there could still be a selection of outmigrants depending on how their gender norms related to those of the particular group of deportees they were exposed to. Under the assumption that gender norms are determined *only* by vertical transmission from ancestors to respondents, which is the main alternative hypothesis to our interpretation of the results, we can test whether gender attitudes of outmigrants differed systematically from those of stayers in a way that can be explained by the group composition of deportees. In particular, in the same sample of ancestors considered in Column 4, we regress gender attitudes of the respondents on a dummy indicating whether the respondent's family outmigrated since 1939 (the variable that was used as outcome in Column 4) interacted with the log numbers of Protestant and Muslim deportees (or the share of Protestant deportees) in the ancestor's region of origin. As this interaction varies within the region of ancestor's origin, we include ancestor region fixed effects in this estimation.

If gender attitudes are transmitted vertically and the family decision to outmigrate was related to the difference between the family's gender norms and the gender norms

[44]There are 9,277 such ancestors.

of deportees, one should expect a negative coefficient on the interaction between the dummy indicating that families moved out and the log number (and share) of Protestant deportees. In contrast, one should expect a positive coefficient on the interaction between the dummy indicating that families outmigrated and the log number of Muslim deportees. The reason for this is that one would expect families with more regressive gender norms to move out of regions with Protestant deportees and with more progressive gender norms to move out of regions with Muslim deportees. The results of this estimation are presented in Column 4 of Table 9.[45] None of coefficients on any of these interaction terms are statistically significant. This strongly suggests that our baseline results are not driven by selective outmigration.

Overall, we conclude that our results are unlikely to be driven by selective migration of non deportees and, therefore, they present evidence of horizontal cultural transmission.

8 Conclusions

We study between-group horizontal cultural transmission using Stalin's ethnic deportations as a unique historical experiment in which the coexistence of different ethnic groups was exogenously imposed in a real-world setting. Ethnic groups with drastically different gender norms were deported to locations in Siberia and Central Asia in such a way that the variation in the group composition of deportees within subnational regions was unrelated to the characteristics of localities, to the structure of the local population, and to local gender norms.

Relying on this exogenous variation, we find strong evidence of the diffusion of gender norms from deportees to the local population. Both the norms of gender equality and of gender discrimination were adopted by people exposed to a deportee group with those norms. The horizontal transmission of norms of gender equality was substantially stronger than that of norms of gender discrimination. This could be explained by higher political costs of adopting norms that go against official state ideology and by economic benefits for households that adopt egalitarian gender norms.

In contrast to other studies of exogenous group exposure, there were no constraints on and no encouragement of interactions between deportees and the local population at the deportation locations. Therefore, our results show that horizontal between-group cultural transmission may occur even without regulating communication between groups or a common goal that unites them.

A broader implication of our analysis is that the formation of cultural ghettos,

[45] The difference in the number of observations between Columns 4 and 5 of Table 9 comes from the fact that not all LiTS respondents answered all questions about gender attitudes.

where different groups live in close proximity but do not learn from each other, is not inevitable.

References

Alesina, Alberto, and Paola Giuliano. 2015. "Culture and Institutions." *Journal of Economic Literature*, 53(4): 898–944.

Alesina, Alberto, Paola Giuliano, and Nathan Nunn. 2013. "On the origins of gender roles: women and the plough." *Quarterly Journal of Economics*, 128(2): 469–530.

Algan, Yann, Camille Hémet, and David D Laitin. 2016. "The social effects of ethnic diversity at the local level: A natural experiment with exogenous residential allocation." *Journal of Political Economy*, 124(3): 696–733.

Algan, Yann, Nicolo Dalvit, Quoc-Anh Do, Alexis Le Chapelain, and Yves Zenou. 2018. "Friendship Networks and Political Opinions: A Natural Experiment among Future French Politicians." Sciences Po mimeo.

Allport, Gordon W. 1954. *The nature of prejudice.* Reading, MA: Addison-Wesley.

Altonji, Joseph G., Todd E. Elder, and Christopher R. Taber. 2005. "Selection on Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools." *Journal of Political Economy*, 113(1): 151–184.

Anelli, Massimo, and Giovanni Peri. 2017. "The effects of high school peers'gender on college major, college performance and income." *The Economic Journal*, 129(618): 553–602.

Angrist, Joshua D. 1995. "Estimating the labor market impact of voluntary military service using social security data on military applicants." National Bureau of Economic Research.

Bakker, Dik, Cecil Brown, Pamela Brown, Dmitry Egorov, Anthony Grant, Eric Holman, Robert Mailhammer, Andre Muller, Viveka Velupillai, and Soren Wichmann. 2009. "Adding typology to lexicostatistics: a combined approach to language classification." *Linguistic Typology*, 13: 167–179.

Becker, Sascha O, and Ludger Woessmann. 2008. "Luther and the girls: Religious denomination and the female education gap in nineteenth-century Prussia." *Scandinavian Journal of Economics*, 110(4): 777–805.

Becker, Sascha O., Irena Grosfeld, Pauline Grosjean, Nico Voigtländer, and Ekaterina Zhuravskaya. 2020. "Forced Migration and Human Capital: Evidence from Post-WWII Population Transfers." *American Economic Review*, 110(5): 1430–1463.

Bisin, Alberto, and Thierry Verdier. 2010. "The Economics of Cultural Transmission and Socialization." In *Handbook of Social Economics.* , ed. Jess Benhabib, Alberto Bisin and Matthew Jackson. Amsterdam:Elsevier.

Blum, Alain. 2015. "Décision politique et articulation bureaucratique: les déportés lituaniens de l'opération «Printemps»(1948)." *Revue d'histoire moderne et contemporaine*, 62(4): 64–88.

Blum, Alain, and Emilia Koustova. 2018*a*. "Negotiating lives, redefining repressive policies: managing the legacies of stalinist deportations." *Kritika: Explorations in Russian and Eurasian History*, 19(3): 537–571.

Blum, Alain, and Emilia Koustova. 2018*b*. "A Soviet Story: Mass Deportation, Isolation, Return." *Narratives of Exile and Identity: Soviet Deportation Memoirs from the Baltic States*, 19–40. Central European University Press.

Boisjoly, Johanne, Greg J. Duncan, Michael Kremer, Dan M. Levy, and Jacque Eccles. 2006. "Empathy or Antipathy? The Impact of Diversity." *American Economic Review*, 96(5): 1890–1905.

Burns, Justine, Lucia Corno, and Eliana La Ferrara. 2019. "Interaction, prejudice and performance. Evidence from South Africa." IFS working paper W19/03.

Campa, Pamela, and Michel Serafinelli. 2018. "Politico-Economic Regimes and Attitudes: Female Workers under State-Socialism." *Review of Economics and Statistics*, 101(2): 233–248.

Carrell, Scott E, Mark Hoekstra, and James E West. 2015. "The Impact of Intergroup Contact on Racial Attitudes and Revealed Preferences." National Bureau of Economic Research Working Paper 20940.

Castañeda Dower, Paul, and Andrei Markevich. 2018. "Labor Misallocation and Mass Mobilization: Russian Agriculture during the Great War." *Review of Economics and Statistics*, 100(2): 245–259.

Castañeda Dower, Paul, and Andrei Markevich. 2020. "Democratic support for the bolshevik revolution: an empirical investigation of 1917 constituent assembly elections." *Mimeo, SSRN*.

Chetty, Raj, Nathaniel Hendren, and Lawrence F Katz. 2016. "The effects of exposure to better neighborhoods on children: New evidence from the moving to opportunity experiment." *American Economic Review*, 106(4): 855–902.

Clark, Charles E. 1995. "Literacy and labour: The Russian literacy campaign within the trade unions, 1923–27." *Europe–Asia Studies*, 47(8): 1327–1341.

Clingingsmith, David, Asim Ijaz Khwaja, and Michael Kremer. 2009. "Estimating the impact of the Hajj: religion and tolerance in islam's global gathering." *Quarterly Journal of Economics*, 124(3): 1133–1170.

Conley, Timothy G. 1999. "GMM estimation with cross sectional dependence." *Journal of Econometrics*, 92(1): 1–45.

Deweese, D. 2002. "Islam and the legacy of sovietology: A review essay on yaacov ro'i's islam in the soviet union." *Journal of Islamic Studies*, 13(3): 298–330.

Dietz, Jacob E. 2005. *History of the Volga German Colonists.* . reprint ed., American Historical Society of Germans from Russia.

Epple, Dennis, and Richard E. Romano. 2011. "Peer effects in education." In . Vol. 1 of *Handbook of social economics*, 1053–1163. Elsevier.

Fernández, Raquel, Alessandra Fogli, and Claudia Olivetti. 2004. "Mothers and sons: Preference formation and female labor force dynamics." *Quarterly Journal of Economics*, 119(4): 1249–1299.

Fernández, Raquel, and Alessandra Fogli. 2009. "Culture: An empirical investigation of beliefs, work, and fertility." *American Economic Journal: Macroeconomics*, 1(1): 146–77.

Fernández, Raquel. 2013. "Cultural Change as Learning: The Evolution of Female Labor Force Participation over a Century." *American Economic Review*, 103(1): 472–500.

Finseraas, Henning, and Andreas Kotsadam. 2017. "Does personal contact with ethnic minorities affect anti-immigrant sentiments? Evidence from a field experiment." *European Journal of Political Research*, 56(3): 703–722.

Fogli, Alessandra, and Laura Veldkamp. 2011. "Nature or nurture? learning and the geography of female labor force participation." *Econometrica*, 79(4): 1103–1138.

Giavazzi, Francesco, Fabio Schiantarelli, and Michel Serafinelli. 2013. "Attitudes, policies, and work." *Journal of the European Economic Association*, 11(6): 1256–1289.

Giuliano, Paola. 2017. "Gender: A Historical Perspective." In *The Oxford Handbook of Women and the Economy*. Vol. 1 of *Oxford Handbooks Online*, , ed. Susan L. Averett, Laura M. Argys and Saul D. Hoffman. Oxford University Press.

Giuliano, Paola. forthcoming. "Gender and Culture." *Oxford Review of Economic Policy*.

Goldin, Claudia. 1990. *Understanding The Gender Gap: An Economic History Of American Women (NBER Series On Long-term Factors In Economic Development).* New York:Oxford University Press.

Grosfeld, Irena, Alexander Rodnyansky, and Ekaterina Zhuravskaya. 2013. "Persistent Antimarket Culture: A Legacy of the Pale of Settlement after the Holocaust." *American Economic Journal: Economic Policy*, 5(3): 189.

Henrich, Joseph. 2017. *The Secret Of Our Success: How Culture Is Driving Human Evolution, Domesticating Our Species, And Making Us Smarter.* Princeton University Press.

Hiller, Victor. 2014. "Gender inequality, endogenous cultural norms, and economic development." *Scandinavian Journal of Economics*, 116(2): 455–481.

Kapelko, Natalia, and Andrei Markevich. 2014. "The Political Legacy of the Gulag Archipelago." New Economic School mimeo.

Khasbulatova, Zulai. 2007. *Vospitaniye Detei u Chechentsev: Obychai i Traditsii (XIX-XX) (English translation of the title: Child Rearing among Chechens: Customs and Traditions (19-20th centuries)).* Dissertation, Moscow State University.

Koustova, Emilia. 2015. "(Un)returned from the Gulag: life trajectories and integration of postwar special settlers." *Kritika: Explorations in Russian and Eurasian History*, 16(3): 589–620.

Lazarev, Egor. 2019. "Laws in conflict: legacies of war, gender, and legal pluralism in chechnya." *World politics*, 71(04): 667–709.

Levkin, Roman. 2016. "Institutional Persistence in Eastern Europe: Economic and Political Legacies of Empires and Communism." PhD diss. Duke University.

Lippmann, Quentin, Alexandre Georgieff, and Claudia Senik. 2020. "Undoing Gender with Institutions: Lessons from the German Division and Reunification." *The Economic Journal*, 130(629): 1445–1470.

Markevich, Andrei, and Tatiana Mikhailova. 2013. "Economic geography of Russia." In . *The Oxford handbook of the Russian economy*, , ed. Michael Alexeev and Shlomo Weber. Oxford University Press.

Maurin, Eric, and Julie Moschion. 2009. "The social multiplier and labor market participation of mothers." *American Economic Journal: Applied Economics*, 1(1): 251–272.

Mecham, Robert, James Fearon, and David Laitin. 2006. *Religious Classification and Data on Shares of Major World Religions.* Stanford University.

Miller, Michael M. 1987. *Researching the Germans from Russia: Annotated Bibliography of the Germans from Russia Heritage Collection.* . 1st ed., North Dakota Inst for.

Mukhina, Irina. 2005. "'The Forgotten History': Ethnic German Women in Soviet Exile, 1941–1955." *Europe-Asia studies*, 57(5): 729–752.

Nanayeva, Baret. 2012. Traditsionnoye Obschestvo Chechentsev: Sociokulturnyi Analiz *[Traditional Society of Chechens: Socio-Cultural Analysis.]*. ISPI RAN.

Nekrich, Aleksandr Moiseevich. 1978. *The punished peoples: The deportation and fate of Soviet minorities at the end of the Second World War.* WW Norton, New York, United States.

Nicoletti, Cheti, Kjell G. Salvanes, and Emma Tominey. 2018. "The family peer effect on mothers' labor supply." *American Economic Journal: Applied Economics*, 10(3): 206–234.

Northrop, Douglas. 2004. *Veiled empire: Gender and power in Stalinist Central Asia.* Ithaca, NY:Cornell University Press.

Olivetti, Claudia, Eleonora Patacchini, and Yves Zenou. 2020. "Mothers, Peers, and Gender-Role Identity." *Journal of the European Economic Association*, 18(1): 266–301.

Oster, Emily. 2017. "Unobservable Selection and Coefficient Stability: Theory and Evidence." *Journal of Business & Economic Statistics*, 37(2): 187–204.

Pohl, J. Otto. 1999. *Ethnic Cleansing in the USSR, 1937–1949.* Westport, Connecticut; London:Greenwood Press.

Pohl, J. Otto. 2000. "Stalin's genocide against the "Repressed Peoples"." *Journal of Genocide Research*, 2(2): 267–293.

Pohl, J. Otto. 2008. "The Loss, Retention, and Reacquisition of Social Capital by Special Settlers in the USSR, 1941–1960." In *The Oxford Handbook of Innovation.* , ed. Cynthia J. Buckley, Blair A. Ruble and Erin Trouth Hofmann, Chapter 7, 203–222. Washington, DC:Woodrow Wilson Center Press.

Polian, Pavel M. 2004. *Against their will: the history and geography of forced migrations in the USSR.* Central European University Press.

Pospielovsky, Dimitry V. 1988. *History of Soviet Atheism in Theory and Practice and the Believer: Soviet Antireligious Campaigns and Persecutions, volume 2.* London, UK: Palgrave Macmillan.

Rao, Gautam. 2019. "Familiarity Does Not Breed Contempt: Generosity, Discrimination, and Diversity in Delhi Schools." *American Economic Review*, 109(3): 774–809.

Richerson, Peter J., and Robert Boyd. 2006. *Not by Genes Alone: How Culture Transformed Human Evolution.* University of Chicago Press.

Ro'i, Yaacov. 2000. *Islam in the Soviet Union: From the Second World War to Gorbachev.* Columbia University Press.

Sacerdote, Bruce. 2011. "Peer effects in education: how might they work, how big are they and how much do we know thus far?" In . Vol. 3 of *Handbook of the economics of education*, 249–277. Elsevier.

Sacerdote, Bruce. 2014. "Experimental and Quasi-Experimental Analysis of Peer Effects: Two Steps Forward?" *Annual Review of Economics*, 6(1): 253–272.

Sakalli, Seyhun Orcan. 2018. "Secularization and Religious Backlash: Evidence from Turkey." *Working Paper.*

Scacco, Alexandra, and Shana S. Warren. 2018. "Can Social Contact Reduce Prejudice and Discrimination? Evidence from a Field Experiment in Nigeria." *American Political Science Review*, 112(03): 654–677.

Schmitz, Sophia, and Felix Weinhardt. 2019. "Immigration and the Evolution of Local Cultural Norms." IZA Discussion Paper Series, Institute of Labor Economics, IZA DP No. 12509.

Spolaore, Enrico, and Romain Wacziarg. 2009. "The Diffusion of Development." *Quarterly Journal of Economics*, 124(2): 469–529.

Spolaore, Enrico, and Romain Wacziarg. 2013. "How Deep Are the Roots of Economic Development?" *Journal of Economic Literature*, 51(2): 325–69.

Spolaore, Enrico, and Romain Wacziarg. 2016. "Ancestry, language and culture." In *The palgrave handbook of economics and language.* , ed. Victor Ginsburgh and Shlomo Weber, 174–211. London:Palgrave Macmillan UK.

Tishkov, V. A. (Valeriy Aleksandrovich). 2004. *Chechnya: Life in a war-torn society.* University of California Press.

Toews, Gerhard, and Pierre-Louis Vezina. 2019. "Enemies of the People." King's College London mimeo.

Tuccio, Michele, and Jackline Wahba. 2018. "Return migration and the transfer of gender norms: Evidence from the Middle East." *Journal of Comparative Economics*, 46(4): 1006–1029.

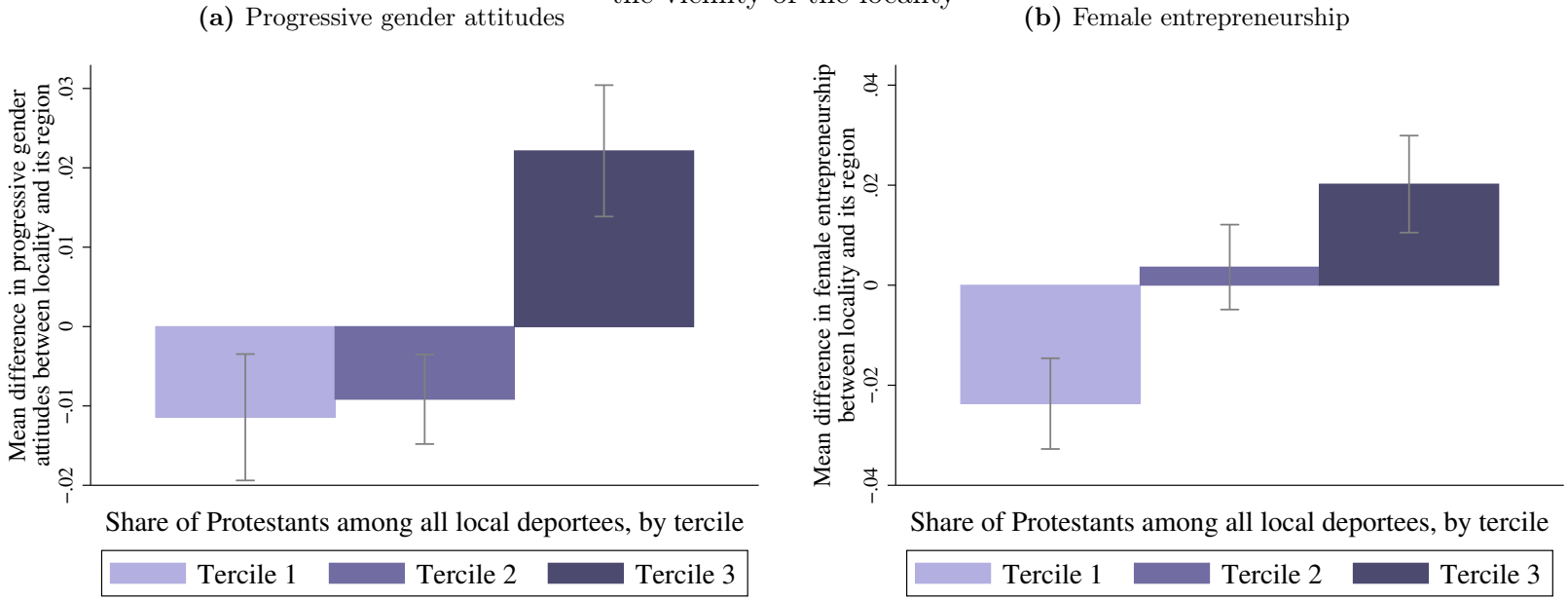
Westren, Michael H. 2012. *Nations in Exile: "The Punished Peoples" in Soviet Kazakhstan, 1941-1961.* Dissertation, University of Chicago. 456 pp.

Wichmann, Søren, Eric W. Holman, and Cecil H. Brown. 2018. "The ASJP Database (version 18)."

Wiens, H. 1997. *Volk auf dem Weg: Deutsche in Rußland und in der GUS 1763 - 1997.* Landsmannschaft der Deutschen aus Rußland and Kulturrat der Deutschen aus Russland.

Zemskov, V.N. 2003. *Spezposelenzy in USSR 1930-1960.* Nauka: Moscow.

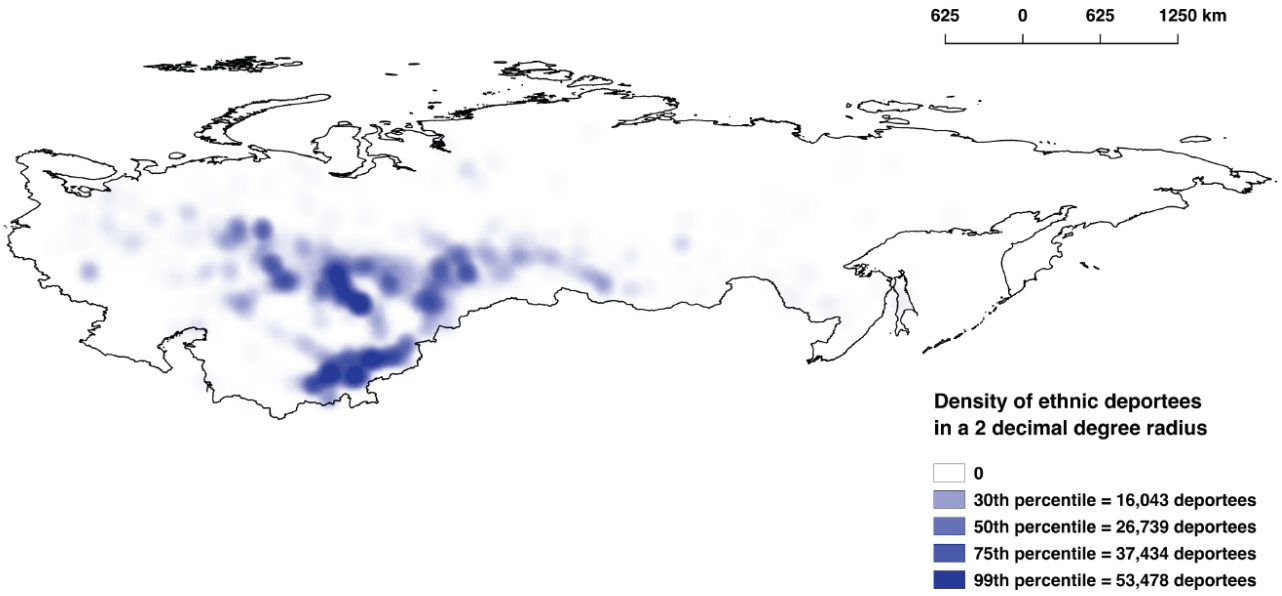
Figure 1: Mean difference in gender outcomes between locality and its region, by tercile of the share of Protestants among all deportees in the vicinity of the locality



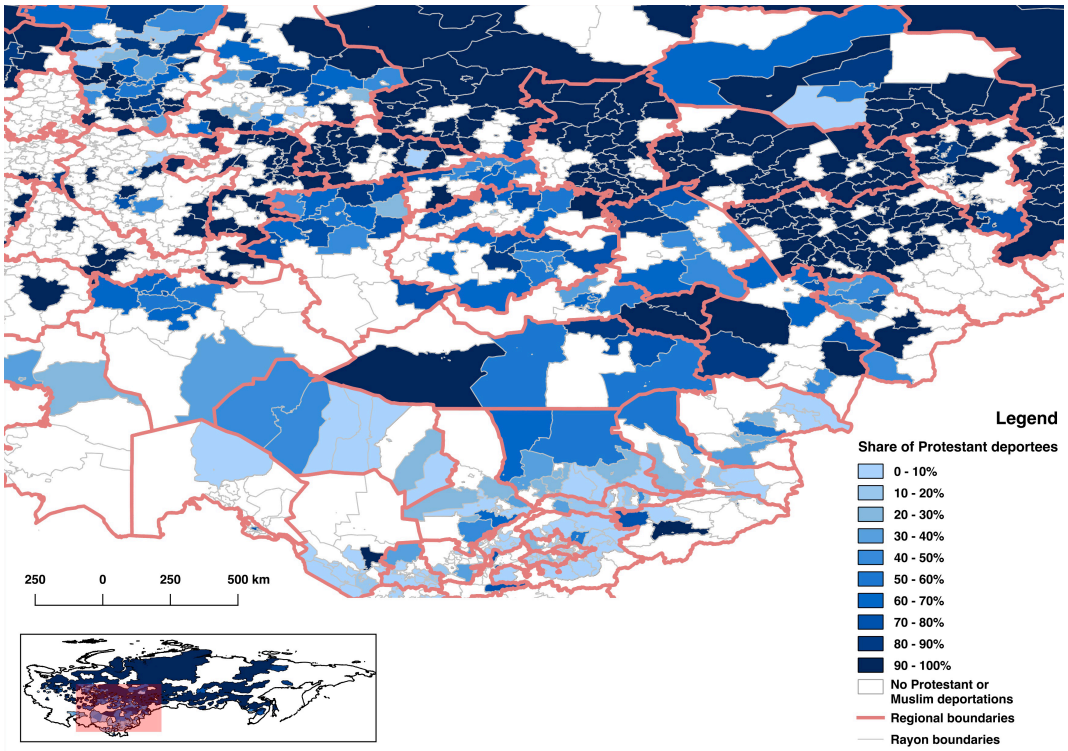
Note: The figure presents the mean difference between an outcome variable for respondents in a locality and respondents in the region of this locality, by the tercile of the share of Protestants among all deportees in the locality. The mean share of Protestants among all deportees is -14 percentage points in the first tercile, 0 - in the second tercile, and + 14 percentage points in the third tercile. In Panel A, the outcome variable is the first principal component of the gender attitudes, calculated from dummies indicating answers "strongly disagree" or "disagree" to each of the following statements: *(1) "A woman should do most of the household chores even if the husband is unemployed"; (2) "It is better for everyone if the man earns the money and the woman takes care of home"; (3) "Men make better political leaders than women do"*. In Panel B, the outcome variable is the dummy indicating whether a female respondent tried to start a business.

Figure 2: Density and religious composition of ethnic deportations at destinations

Panel A: Density of ethnic deportees at destination



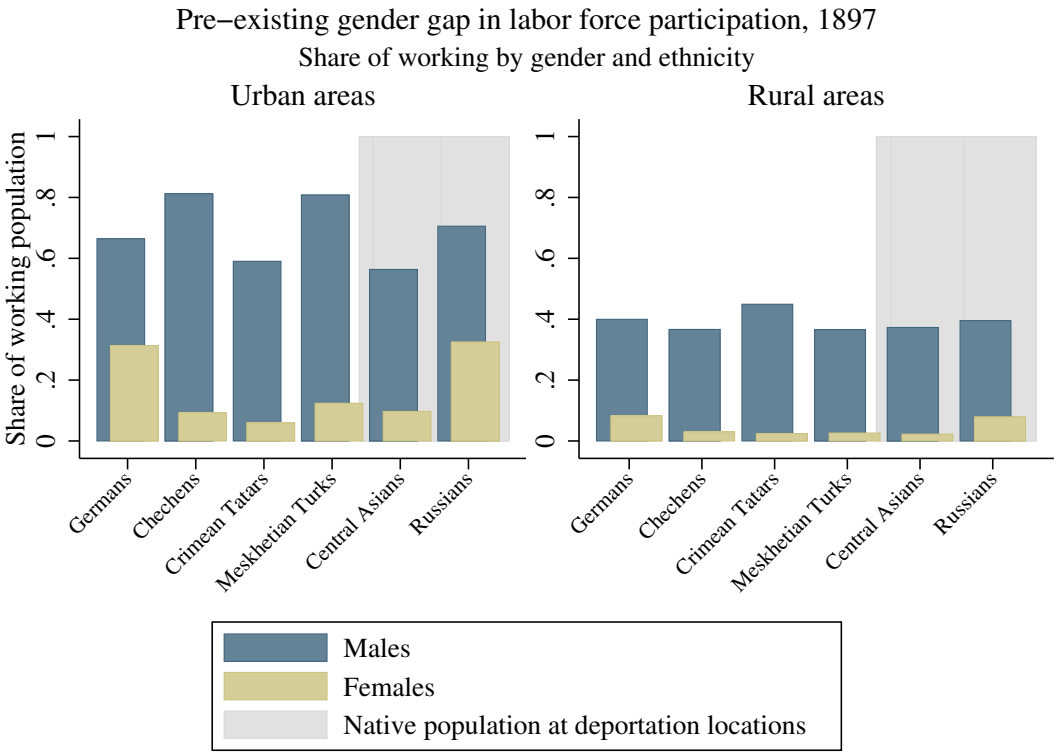
Panel B: The share of Protestants among all Protestant and Muslim deportees at destination



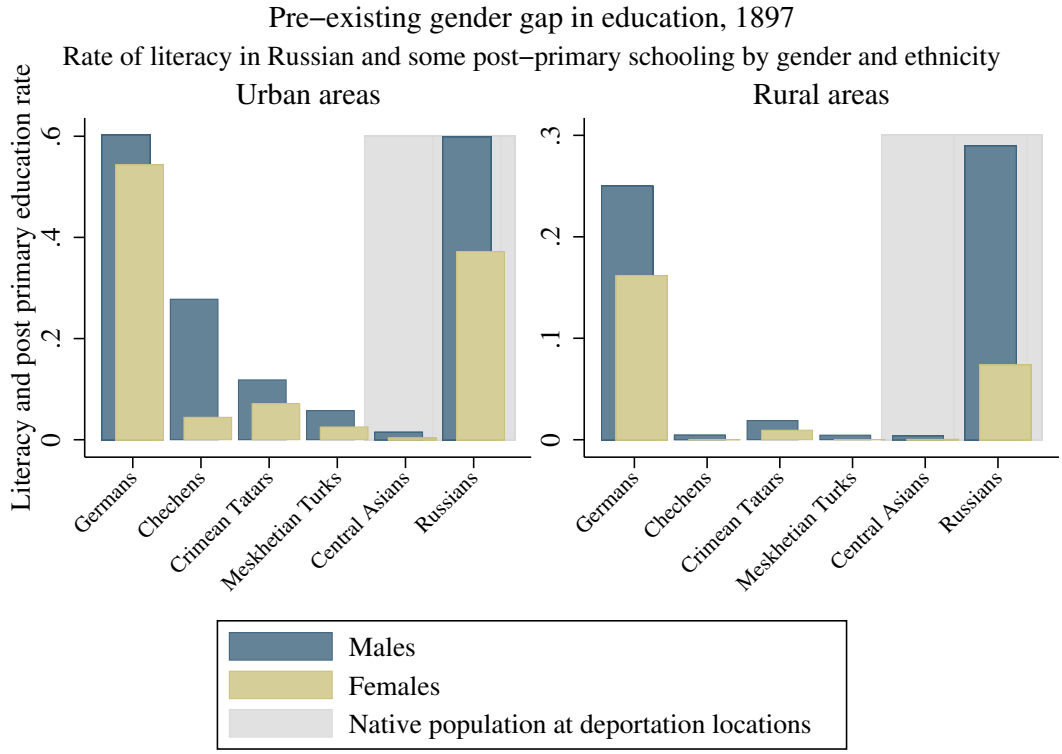
Note: The map in Panel A presents the destination locations of ethnic deportations. The intensity of color indicates the density of ethnic deportees in a 2 decimal degree radius, estimated using a quartic (bi-weight) kernel function. The represented values are winsorized at the 99th percentile of the distribution. The legend shows values at 0, 30, 50, 70, and 99th percentiles. The map in Panel B zooms into the area which was the destination of the most sizable ethnic deportations and presents the district-level variation in the share of Protestants among all Protestant and Muslim deportees; this map also presents regional boundaries (in the analysis, we rely on the within-region variation). Figures A2 and A3 in the online appendix present the maps of the exact destinations of deportations and details about their size and group composition.

Figure 3: Pre-existing gender norms of deportee groups and of the local population at deportation destinations

(a) Labor force participation



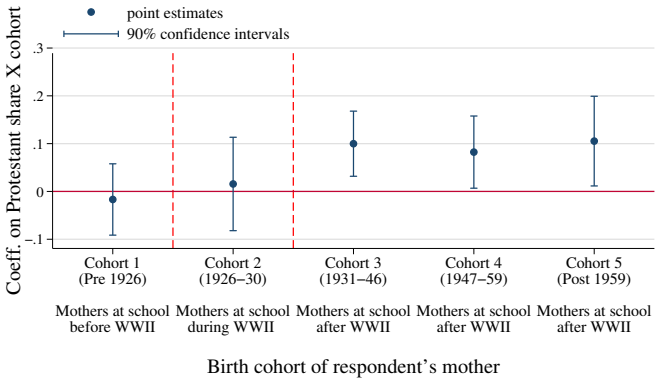
(b) Education



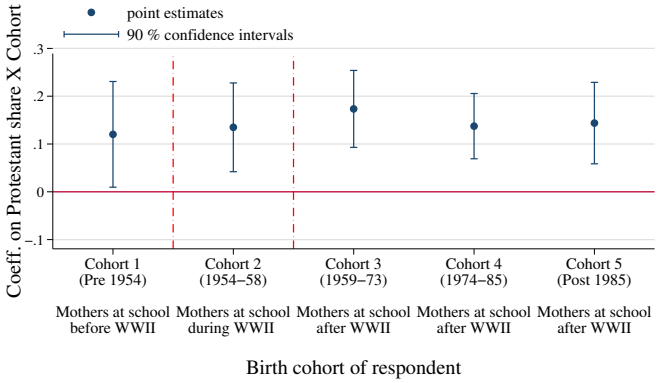
Source: 1897 Russian Empire census.

Figure 4: The effect of the share of Protestant deportees on mothers' education and respondents attitudes by birth cohorts

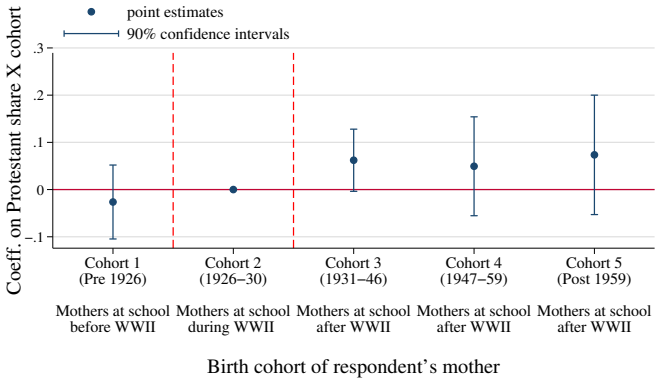
(a) Tertiary education of respondents' mothers, by predicted birth cohorts of mothers (region fixed effects)



(b) Gender attitudes of respondents, by birth cohorts of respondents (region fixed effects)

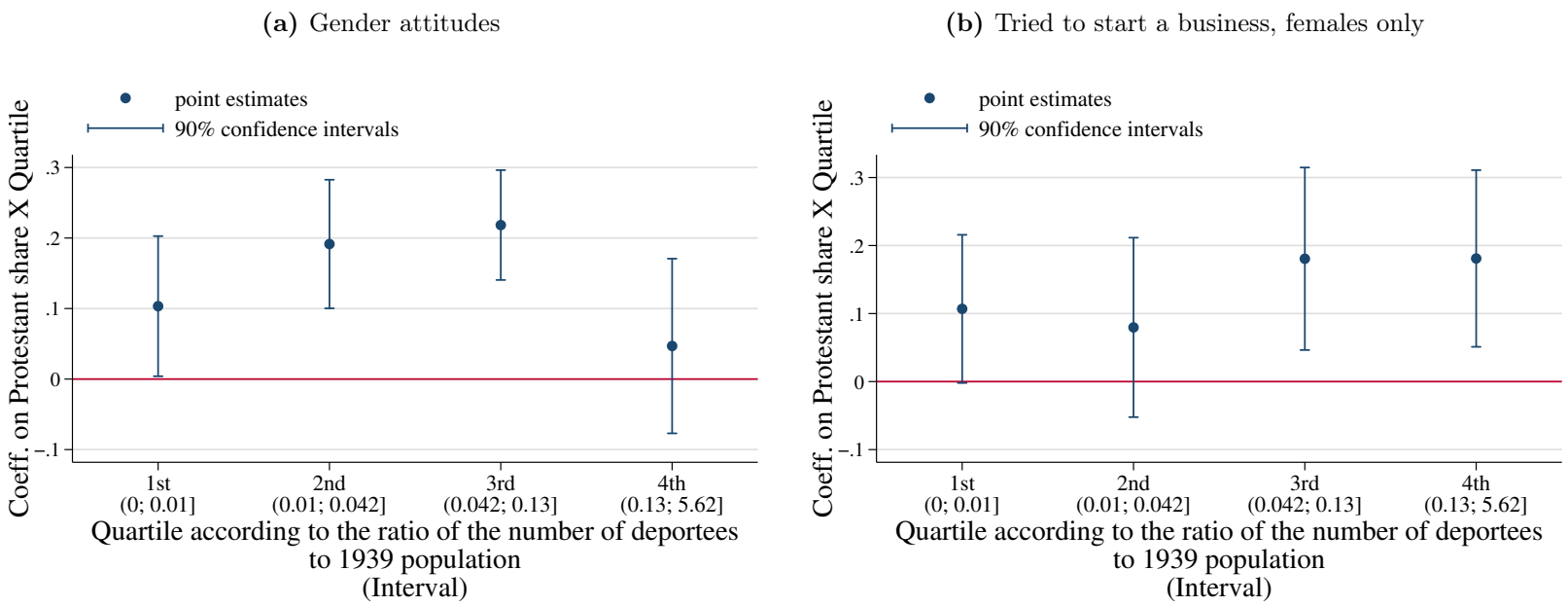


(c) Tertiary education of respondents' mothers (locality fixed effects)



Note: The figure presents the effect of the share of Protestant deportees by birth cohort. The outcome in Panels A and C is the tertiary education of respondents' mothers. The outcome in Panel B is the 1st Principal Component of progressive gender attitudes. Specifications in Panels A and B have region fixed effects. Specification in Panel C has locality (PSU) fixed effects, leaving cohort 2 as the comparison group. There is a one-to-one correspondence between birth cohorts of respondents and of the mothers. The coefficients and 90% confidence intervals are displayed. Individual and destination location controls as well as cohort-group fixed effects are included. Standard errors are corrected for spatial correlation within a radius of 150km following Conley (1999). The two vertical lines mark three groups of respondents' mothers: 1) those who finished secondary school before deportations occurred; 2) those who did their secondary school during WWII and 3) those who went to school after the deportations took place. Figure A10 in the online appendix, shows similar graphs for the log numbers of Protestant and Muslim deportees.

Figure 5: Effects by quartile according to the ratio of the number of deportees to the local population in 1939



Note: Panel A presents the effect of the share of Protestant deportees on the 1st Principal Component of progressive gender attitudes, by four equal sized groups of the ratio of deportees to the local population in 1939. Panel B presents the effect of the share of Protestant deportees on the dummy for having tried to start a business within the female sample, by four equal sized groups by the ratio of deportees to the local population in 1939. The coefficients and 90% confidence intervals displayed are from the OLS regressions described in the text. Individual and destination location controls as well as quartile-group fixed effects are included. Standard errors are corrected for potential spatial correlation within a radius of 150km following Conley (1999).

Table 1: Balance

	(1)			(2)			(3)		
Main explanatory variable:	Deportations dummy			Share of Protestant deportees			Share of Protestant deportees		
Sample:	All LiTS PSUs			All locations of deportations			PSUs with deportations		
PLACEBO OUTCOME VAR	COEF	SE	N	COEF	SE	N	COEF	SE	N
Panel A. Geographic characteristics and evacuated enterprises									
Distance to water (ln)	-0.338**	(0.139)	375	0.123	(0.202)	1,043	0.178	(0.189)	234
Distance to railroad (ln)	-0.756***	(0.213)	375	0.215	(0.228)	1,043	0.298	(0.365)	234
Distance to gulag (ln)	-0.351**	(0.177)	375	0.021	(0.198)	1,043	-0.049	(0.442)	234
Travel distance to capital city (ln)	-0.238*	(0.139)	375	0.171***	(0.064)	1,037	-0.098	(0.375)	234
Ruggedness	8.799***	(3.002)	375	0.891	(1.372)	1,043	0.355	(3.514)	234
Soil Suitability low inputs	-0.721***	(0.155)	375	-0.131	(0.190)	1,043	-0.427	(0.272)	234
Soil Suitability high inputs	-1.011***	(0.162)	375	-0.057	(0.165)	1,043	-0.169	(0.285)	234
Precipitation (June-August) (ln)	-0.109	(0.086)	375	-0.056	(0.038)	1,043	-0.034	(0.150)	234
Precipitation (Dec-Feb) (ln)	-0.088	(0.053)	375	-0.067*	(0.037)	1,043	-0.036	(0.151)	234
Temperature (June-August)	2.622***	(0.721)	375	-0.063	(0.224)	1,043	-2.058**	(0.917)	234
Temperature (Dec-Feb)	2.365***	(0.621)	375	-0.517*	(0.303)	1,043	-2.579**	(1.006)	234
Nb. of evacuated enterprises during WWII	3.314**	(1.483)	375	-6.244	(5.714)	1,037	-9.391	(11.169)	234
Evacuated enterprise dummy during WWII	0.198***	(0.047)	375	-0.098	(0.059)	1,037	-0.158	(0.188)	234
Panel B. Population characteristics, 1939 USSR									
Total 1939 population (log)	0.490**	(0.239)	375	-0.091	(0.128)	1,037	0.076	(0.726)	234
Share of Chechens	-0.000	(0.000)	375	0.000	(0.000)	1,037	0.005	(0.005)	234
Share of Germans	-0.007*	(0.004)	375	0.006	(0.004)	1,037	-0.002	(0.018)	234
Share of Russians	-0.311	(0.270)	375	-0.020	(0.030)	1,037	0.096	(0.266)	234
Share of Uzbeks	-0.262	(0.163)	375	-0.020	(0.014)	1,037	-0.043	(0.088)	234
Share of Turkmens	-0.009	(0.009)	375	-0.001	(0.001)	1,037	-0.001	(0.001)	234
Share of Tajiks	0.011	(0.034)	375	0.000	(0.002)	1,037	0.041	(0.034)	234
Share of Kazakhs	-0.453	(0.279)	375	0.050**	(0.023)	1,037	0.863	(0.767)	234
Share of Kyrgyz	0.052	(0.051)	375	0.007	(0.006)	1,037	-0.106	(0.104)	234
Share of Koreans	-0.051	(0.043)	375	-0.001	(0.004)	1,037	0.016	(0.014)	234
Share of Karakalpaki	-0.108	(0.108)	375	-0.001*	(0.000)	1,037	0.000	(0.001)	234
Share of Udmurts	-0.002	(0.003)	375	-0.001	(0.001)	1,037	0.003	(0.003)	234
Share of Tatars	-0.020**	(0.010)	375	0.005	(0.009)	1,037	0.006	(0.012)	234
Share of Mariians	-0.009	(0.009)	375	-0.004	(0.003)	1,037	-0.000	(0.000)	234
Share of Chuvashs	0.003	(0.003)	375	0.005	(0.004)	1,037	-0.002	(0.005)	234
Panel C. Population characteristics, 1897 Russian empire									
Population density (sq km) (ln)	-0.788***	(0.295)	375	0.128	(0.279)	1,102	-0.418	(0.299)	234
Share living in city	-0.126***	(0.047)	305	0.068	(0.066)	1,072	-0.061	(0.065)	197
Share of Russians in 1897	-0.043	(0.042)	305	0.113	(0.098)	1,072	-0.021	(0.104)	197
Share of Germans in 1897	-0.013*	(0.008)	305	0.007	(0.006)	1,072	0.001	(0.002)	197
Share employed in agriculture in 1897	0.057	(0.057)	305	-0.148	(0.124)	1,072	0.201	(0.136)	197
Share employed in industry in 1897	-0.035	(0.028)	305	0.068	(0.056)	1,072	-0.154*	(0.080)	197
Share employed in services in 1897	-0.012	(0.008)	305	0.005	(0.012)	1,072	-0.005	(0.015)	197
Share employed in white collar jobs in 1897	-0.002	(0.003)	305	0.004	(0.007)	1,072	0.005	(0.005)	197
Share literate in 1897	-0.089***	(0.025)	305	0.042	(0.036)	1,072	-0.006	(0.028)	197
Share of literate females in 1897	-0.070***	(0.022)	304	0.003	(0.020)	1,072	-0.013	(0.023)	197
Share of Muslims in 1897	0.055*	(0.033)	305	-0.054	(0.078)	1,072	-0.011	(0.088)	197
Share of Orthodox in 1897	0.020	(0.019)	305	0.026	(0.037)	1,072	0.039	(0.034)	197
Share of Protestants in 1897	-0.019*	(0.010)	305	0.010	(0.006)	1,072	0.002	(0.002)	197
Share of Catholics in 1897	-0.002	(0.001)	305	0.003	(0.002)	1,072	-0.002	(0.002)	197
Share of Buddhists in 1897	0.004	(0.004)	305	0.000	(0.006)	1,072	-0.008	(0.006)	197
Share of Jews in 1897	0.000	(0.001)	305	0.004	(0.002)	1,072	-0.001	(0.002)	197

Note: *** p<0.01, ** p<0.05, * p<0.1. Each row-column pair reports results from a separate regression. Each row represents regressions with a different placebo outcome variable. In Column 1, the main explanatory variable is a dummy that equals one if the LiTS PSU was a destination of an ethnic deportation. In Columns 2 and 3, the main explanatory variable is the share of Protestants among deportees. In regressions with the share of Protestant deportees (Columns 2 and 3), we control for the shares of all other ethnic deportee groups (except for Sunni Muslims) and nonethnic deportees and the log of the total size of deportations. In Panel A and B, we control for region fixed effects. In Panel C, we control for 1897 province and country fixed effects in Column 2 and only for country fixed effects in Column 3, as there is not enough variation after controlling for province fixed effects in this subsample. In addition, we control for the distance to capital city, distance to the railroad, and summer and winter precipitation and temperature in all regressions involving non-geographical outcome variables. The difference in observations in Panel C, Column 1 can be attributed to missing data: for population density we were able to find information online on the population size and area of Bukara, a region with 70 PSUs, which is otherwise missing from the census; for share of literate females we were unable to match one PSU to any of the regions due to redistricting. Standard errors are corrected for potential spatial correlation within a 150km radius following Conley (1999) in Panels A and B. Standard errors are corrected for clusters at the 1897 uezd level in Panel C.

Table 2: Attitudes toward the role of women

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Var.:	Chose to disagree or strongly disagree (on 4-point Likert scale) with the statement:						1st Principal Component	
	A woman should always do most of the household chores		It is better if the man earns the money in the family		Men make better political leaders than women do		Progressive attitudes Normalized b/w 0 and 1	
Sample - gender:	Female	Male	Female	Male	Female	Male	Female	Male
Panel A. Specification 1: Levels. Sample: all localities								
Protestant deportees (ln)	0.028***	0.014**	0.018**	0.020***	0.033***	0.015***	0.026***	0.017***
	(0.004)	(0.005)	(0.007)	(0.007)	(0.009)	(0.005)	(0.004)	(0.004)
Muslim deportees (ln)	-0.007	-0.013	0.002	-0.001	-0.009	0.005	-0.005	-0.004
	(0.008)	(0.009)	(0.008)	(0.008)	(0.007)	(0.008)	(0.007)	(0.006)
$\mathbb{1}$\{Muslim/Protestant deportation\}	-0.107*	0.065	-0.101	-0.053	-0.066	-0.046	-0.096*	-0.010
	(0.062)	(0.067)	(0.063)	(0.071)	(0.066)	(0.070)	(0.052)	(0.050)
Observations	2,679	2,005	2,656	1,996	2,635	1,979	2,572	1,925
R-squared	0.200	0.163	0.127	0.144	0.186	0.151	0.164	0.162
p-value: β(Protest.) = β(Musl.)	*0.00****	*0.00****	*0.10**	*0.01****	*0.00****	*0.21*	*0.00****	*0.00****
p-value: β(Protest.) = $-\beta$(Musl.)	*0.04***	*0.97*	*0.11*	*0.16*	*0.03***	*0.06**	*0.01****	*0.12**
Mean of dependent var.	0.161	0.174	0.205	0.164	0.246	0.176	0.206	0.170
SD of dependent var.	0.368	0.380	0.404	0.370	0.431	0.381	0.271	0.256
Panel B. Specification 2: Shares. Sample: localities with deportations								
Share of Protestant deportees	0.196***	0.227***	0.101	0.201**	0.192*	0.099	0.156***	0.180***
	(0.033)	(0.053)	(0.070)	(0.086)	(0.111)	(0.076)	(0.050)	(0.052)
Observations	1,662	1,251	1,654	1,250	1,639	1,231	1,616	1,206
R-squared	0.230	0.185	0.135	0.154	0.181	0.142	0.202	0.188
Mean of dependent var.	0.148	0.158	0.202	0.155	0.234	0.185	0.195	0.163
SD of dependent var.	0.355	0.365	0.402	0.362	0.423	0.388	0.279	0.260
Region FE and controls	✓	✓	✓	✓	✓	✓	✓	✓

Note: *** p<0.01, ** p<0.05, * p<0.1. Panel A presents our main specification in levels. In Panel A, all regressions control for the size of all other deportee groups. Panel B presents the specification in shares. In Panel B, all regressions control for the share of all other deportee groups (excluding Sunni Muslims) and the total size of deportations. In both panels, the sample is restricted to representatives of the majority group in each country, and in Panel B, the sample is further restricted to PSUs within 30km of a deportation. All regressions are conditional on religious group dummies and region fixed effects and on a set of individual controls (age, education and log of income) and geographic controls (log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter). Standard errors are corrected for spatial correlation within a 150km radius following Conley (1999). The dependent variable in columns (7) and (8) is the first principal component of questions used in columns (1) to (6), normalized to a range between 0 and 1.

Table 3: Actual behavior

	(1)	(2)	(3)	(4)
Dependent Var.:	Tried to start a business		Member of women's rights association	
Sample - gender:	Female	Male	Female	Male
Panel A. Specification 1: Levels. All localities				
Protestant deportees (ln)	0.009**	-0.002	0.007*	0.010***
	(0.004)	(0.006)	(0.003)	(0.003)
Muslim deportees (ln)	-0.012***	0.006	-0.001	-0.002
	(0.004)	(0.006)	(0.006)	(0.005)
$\mathbb{1}$\{Muslim/Protestant deportation\}	0.004	-0.029	-0.022	-0.024
	(0.036)	(0.059)	(0.032)	(0.034)
Observations	2,732	2,048	2,732	2,048
R-squared	0.0704	0.0871	0.0667	0.109
p-value: β(Protestant) = β(Muslim)	*0.000****	*0.27*	*0.21*	*0.04***
p-value: β(Protestant) = $-\beta$(Muslim)	*0.63*	*0.69*	*0.45*	*0.29*
Mean of dependent var.	0.108	0.177	0.044	0.025
SD of dependent var.	0.310	0.381	0.204	0.156
Panel B. Specification 2: Shares. Localities with deportations				
Share of Protestant deportees	0.130**	-0.091	0.071	0.140**
	(0.057)	(0.076)	(0.086)	(0.061)
Observations	1,688	1,271	1,688	1,271
R-squared	0.0836	0.0928	0.0935	0.169
Mean of dependent var.	0.116	0.206	0.046	0.026
SD of dependent var.	0.320	0.405	0.209	0.160
Region FE and controls	✓	✓	✓	✓

Note: *** p<0.01, ** p<0.05, * p<0.1. Panel A presents our main specification in levels. In Panel A, all regressions control for the size of all other deportee groups. Panel B presents the specification in shares. In Panel B, all regressions control for the share of all other deportee groups (excluding Sunni Muslims) and the total size of deportations. In both panels, the sample is restricted to representatives of the majority group in each country, and in Panel B, the sample is further restricted to PSUs within 30km of a deportation. All regressions are conditional on religious group dummies and region fixed effects and on a set of individual controls (age, education and log of income) and geographic controls (log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter). Standard errors are corrected for spatial correlation within a 150km radius following Conley (1999).

Table 4: Robustness to the choice of controls, specification in levels

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Baseline	**Robustness**						
Panel A.	Dep. var.: **Gender attitudes (1st principal component)**							
Protestant deportees (ln)	0.022***	0.017***	0.021***	0.021***	0.021***	0.022***	0.018***	0.018***
	(0.003)	(0.005)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)
Muslim deportees (ln)	-0.004	-0.007***	-0.003	-0.002	-0.003	-0.004	-0.005	-0.005
	(0.005)	(0.002)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Observations	4,497	5,335	5,335	5,335	5,335	5,335	3,625	3,475
R-squared	0.149	0.102	0.103	0.105	0.124	0.127	0.151	0.150
Sample: Both genders	✓	✓	✓	✓	✓	✓	✓	✓
Panel B.	Dep. var.: **Female entrepreneurship (Tried to start a business)**							
Protestant deportees (ln)	0.009**	0.011***	0.011***	0.008**	0.008**	0.009**	0.011**	0.013***
	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)	(0.005)	(0.005)
Muslim deportees (ln)	-0.012***	-0.007**	-0.006	-0.009**	-0.010**	-0.010***	-0.011**	-0.013***
	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)
Observations	2,732	3,275	3,275	3,275	3,275	3,275	2,221	2,112
R-squared	0.0704	0.0473	0.0473	0.0518	0.0567	0.0577	0.0755	0.0838
Sample: Females only	✓	✓	✓	✓	✓	✓	✓	✓
Region FE	✓	✓	✓	✓	✓	✓	✓	✓
$\mathbb{1}$\{Muslim/Protestant deportation\}	✓		✓	✓	✓	✓	✓	✓
Deportee controls, levels	✓			✓	✓	✓	✓	✓
Locality controls	✓				✓	✓	✓	✓
Demographic controls	✓					✓	✓	✓
Socio-economic controls	✓						✓	✓
Extended set of historical controls							✓	✓
Parental education controls								✓

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents specification 1, in levels. In Panel A, the outcome is the 1st principal component of progressive gender attitudes. In Panel B, the outcome is a dummy for having tried to start a business. The sample is restricted to representatives of the majority group in each country in both panels. In Panel B, the sample is comprised of female respondents only. Standard errors are corrected for spatial correlation within a 150km radius following Conley (1999). All regressions control for region fixed effects. **Deportee controls, levels:** the size of all other deportee groups, excluding Protestant and Muslim deportees. **Locality controls:** the log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter. **Demographic controls:** age, sex, and religious group of respondent. **Socio-economic controls:** log of income and education of respondent. **Extended set of historical controls:** dummy for evacuated enterprise in 1941, the 1939 shares of Kazakhs and Karakalpaki and the share employed in industry in 1897. **Parental education controls:** the highest level of education achieved by the mother and the father.

Table 5: Robustness to the choice of controls and ATE and Oster tests, specification in shares

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Baseline	**Robustness**					
Panel A.	Dep. var.: **Gender attitudes (1st principal component)**						
Share of Protestant deportees	0.144***	0.111**	0.107***	0.128***	0.131***	0.149***	0.155***
	(0.043)	(0.049)	(0.038)	(0.042)	(0.041)	(0.048)	(0.048)
Observations	2,822	3,262	3,262	3,262	3,262	2,340	2,242
R-squared	0.170	0.119	0.127	0.142	0.145	0.183	0.184
Sample: Both genders	✓	✓	✓	✓	✓	✓	✓
Panel B.	Dep. var.: **Female entrepreneurship (Tried to start a business)**						
Share of Protestant deportees	0.130**	0.082*	0.131*	0.119**	0.120**	0.122**	0.136**
	(0.057)	(0.046)	(0.068)	(0.054)	(0.052)	(0.058)	(0.056)
Observations	1,688	1,964	1,964	1,964	1,964	1,396	1,328
R-squared	0.0836	0.0487	0.0574	0.0647	0.0672	0.100	0.108
Sample: Female only	✓	✓	✓	✓	✓	✓	✓
Region FE	✓	✓	✓	✓	✓	✓	✓
Deportee controls, shares	✓		✓	✓	✓	✓	✓
Locality controls	✓			✓	✓	✓	✓
Demographic controls	✓				✓	✓	✓
Socio-economic controls	✓					✓	✓
Extended set of historical controls						✓	✓
Parental education controls							✓
	Altonji-Elder-Taber and Oster tests						
Panel C.	Dep. var.: **Gender attitudes (1st principal component)**						
Altonji-Elder-Taber	0.064	–	0.127	0.068	0.061	0.057	0.060
index of observables	(0.158)		0.152)	(0.159)	(0.160)	(0.148)	(0.150)
Oster δ for $\alpha_1 = 0$	3.04	–	0.77	2.43	2.95	4.45	4.43
Panel D.	Dep. var.: **Female entrepreneurship (Tried to start a business)**						
Altonji-Elder-Taber	-0.021	–	-0.078	0.004	0.003	0.003	0.021
index of observables	((0.073)		(0.084)	(0.066)	(0.067)	(0.067)	(0.067)
Oster δ for $\alpha_1 = 0$	-13.35	–	-1.88	40.91	58.23	92.86	13.36

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents specification 2, in shares. In Panels A and C, the outcome is the 1st principal component of progressive gender attitudes. Panel B and D the outcome is a dummy for having tried to start a business. Panels C and D present the results of the Altonji-Elder-Taber and Oster tests. For both tests, region fixed effects are considered as necessary controls. The sample is restricted to representatives of the majority group in each country living in PSUs within 30km of a deportation. Standard errors are corrected for spatial correlation within a 150km radius following Conley (1999). All regressions control for region fixed effects. **Deportee controls, shares:** the shares all other deportee groups, excluding Muslim deportees and the total size of deportations. **Locality controls:** the log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter. **Demographic controls:** age, sex, and religious group of respondent. **Socio-economic controls:** log of income and education of respondent. **Extended set of historical controls:** dummy for evacuated enterprise in 1941, the 1939 shares of Kazakhs and Karakalpaki and the share employed in industry in 1897. **Parental education controls:** the highest level of education achieved by the mother and the father.

Table 6: The effect on pre- and post-treatment outcome: mothers' educational attainment

Dependent Var.:	(1)	(2)	(3)	(4)
	Respondent's mother completed tertiary education			
Panel A. Specification 1: Levels. Sample: all localities.				
Mother finished school BEFORE WWII × Protestant deportees (ln)	-0.005	-0.005		-0.002
	(0.004)	(0.004)		(0.005)
Mother finished school BEFORE WWII × Muslim deportees (ln)	0.003	0.003		0.006
	(0.005)	(0.005)		(0.004)
Mother finished school DURING/AFTER WWII × Protestant deportees (ln)	0.006**		0.008**	
	(0.003)		(0.004)	
Mother finished school DURING/AFTER WWII × Muslim deportees (ln)	-0.007		-0.008**	
	(0.005)		(0.003)	
Mother finished school DURING WWII × Protestant deportees (ln)		-0.001		
		(0.005)		
Mother finished school DURING WWII × Muslim deportees (ln)		-0.002		
		(0.005)		
Mother finished school AFTER WWII × Protestant deportees (ln)		0.007**		0.007
		(0.003)		(0.005)
Mother finished school AFTER WWII × Muslim deportees (ln)		-0.007		-0.002
		(0.005)		(0.004)
𝟙{Muslim/Protestant deportation}	-0.010	-0.009		
	(0.035)	(0.035)		
Observations	5,547	5,547	5,547	5,547
R-squared	0.199	0.199	0.280	0.281
p-value: $\beta^{AFTER}(Protestant) = \beta^{AFTER}(Muslim)$	*0.01****	*0.01****	*0.01****	*0.21*
p-value: $\beta^{BEFORE}(Protestant) = \beta^{BEFORE}(Muslim)$	*0.15*	*0.15*		*0.30*
Mean of dependent var.	0.142	0.142	0.142	0.142
SD of dependent var.	0.349	0.349	0.349	0.349
Panel B. Specification 2: Shares. Sample: localities with deportations.				
Mother finished school BEFORE WWII × Protestant deportees (share)	-0.018	-0.018		-0.026
	(0.045)	(0.045)		(0.047)
Mother finished school DURING/AFTER WWII × Protestant deportees (share)	0.088**		0.082**	
	(0.039)		(0.037)	
Mother finished school DURING WWII × Protestant deportees (share)		0.015		
		(0.059)		
Mother finished school AFTER WWII × Protestant deportees (share)		0.095**		0.061
		(0.040)		(0.053)
Observations	3,352	3,352	3,352	3,352
R-squared	0.208	0.209	0.275	0.275
p-value: $\beta^{BEFORE}(Protestant) = \beta^{AFTER}(Protestant)$	*0.00****	*0.00****		*0.03***
Mean of dependent var.	0.148	0.148	0.148	0.148
SD of dependent var.	0.355	0.355	0.355	0.355
Region and birth-year FE and baseline controls; sample: both genders	✓	✓	✓	✓
Locality (PSU) FE			✓	✓

Note: Effects by birth cohort of mothers. Panel A presents specifications in levels. In Panel A, all regressions control for the size of all other deportee groups. Panel B presents the specification in shares. In Panel B, all regressions control for the share of all other deportee groups (excluding Sunni Muslims) and the total size of deportations. In both panels, the sample is restricted to representatives of the majority group in each country. In Columns 1-2, the specification is the same as baseline, i.e., it includes region fixed effects. Column 3-4 present the results of a difference-in-difference specification with locality (PSU) fixed effects. The main explanatory variables are the interaction terms of dummies for mother's birth cohort groups and either the level of Protestant or of Muslim deportees (Panel A) or the share of Protestant deportees (Panel B). Controls include cohort-group fixed effects, religious group dummies, and a set of individual controls (gender of respondent and mother's predicted age) and geographic controls (log of 1939 population, distance to the closest railroad, capital city and Gulag camp, past/current capital and current urban status, ruggedness, and the average long-run summer precipitation and temperature). Standard errors are corrected for spatial correlation within a 150km radius following Conley (1999).

Table 7: The effect of exposure to Germans, Chechens, Crimean Tatars, and Meskhetian Turks

Dependent Var.:	(1) 1st principle component progressive gender attitudes	(2)	(3) Tried to start a business
Sample - gender:	Female	Male	Female
German deportees (ln)	0.019***	0.014***	0.008***
	(0.007)	(0.005)	(0.003)
Chechen deportees (ln)	-0.008*	-0.005	-0.014***
	(0.004)	(0.004)	(0.005)
Crimean Tatar deportees (ln)	0.008	0.001	-0.009**
	(0.005)	(0.006)	(0.004)
Meskhetian Turk deportees (ln)	-0.001	0.002	-0.002
	(0.006)	(0.005)	(0.003)
$\mathbb{1}${Muslim/Protestant deportation}	-0.098**	-0.014	-0.002
	(0.047)	(0.042)	(0.030)
Observations	2,572	1,925	2,732
R-squared	0.168	0.162	0.0730
Region FE and Controls	✓	✓	✓
Sample - all PSUs	✓	✓	✓
p-value: β(Germans)=$-\beta$(Chechens)	*0.20*	*0.14*	*0.37*
p-value: β(Chechens) = β(Crimean Tatars)	*0.009****	*0.36*	*0.55*
p-value: β(Chechens)=β(Meskhetian Turks)	*0.25*	*0.29*	*0.11*
Mean of dependent var.	0.206	0.170	0.108
SD of dependent var.	0.271	0.256	0.310
Region FE and baseline controls, all PSUs	✓	✓	✓

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the main specification in levels, where deportees are grouped by their ethnicity, instead of traditional religion. All regressions control for the size of all other deportee groups. The sample is restricted to representatives of the majority group in each country. All regressions are conditional on religious group dummies and region fixed effects and on a set of individual controls (age, gender, education and log of income) and geographic controls (log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter). Standard errors are corrected for spatial correlation within a 150km radius following Conley (1999).

Table 8: Heterogeneity by cultural distance

Dependent Var.:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	1st Principal Component Progressive gender attitudes					Tried to start a business				
Sample - localities:	All	All	All	Central Asia		All	All	All	Central Asia	
Sample - gender:	Both	Both	Both	Both	Both	Female	Female	Female	Female	Female
Protestant deportees (ln)	0.019***	0.025***	0.020***	0.026***	0.025***	0.009**	0.009**	0.011***	0.006	0.007
	(0.004)	(0.004)	(0.004)	(0.003)	(0.002)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Protestant deportees (ln) × Distance b/w traditional religion of respondent and Protestantism, demeaned	0.020**		0.029***			-0.005		-0.013		
	(0.010)		(0.010)			(0.009)		(0.009)		
Protestant deportees (ln) × Linguistic distance b/w respondent's language and German, demeaned		-0.029	-0.079		0.034		0.074	0.123*		0.181**
		(0.094)	(0.095)		(0.128)		(0.073)	(0.070)		(0.073)
Muslim deportees (ln)	-0.011	0.009	0.001	-0.008	0.014	-0.010*	-0.016**	-0.011	-0.020***	-0.024***
	(0.007)	(0.007)	(0.008)	(0.008)	(0.010)	(0.005)	(0.007)	(0.008)	(0.005)	(0.007)
Muslim deportees (ln) × Distance b/w traditional religion of respondent and Sunni Islam, demeaned	0.005		0.000			-0.011*		-0.009*		
	(0.006)		(0.006)			(0.006)		(0.005)		
Muslim deportees (ln) × Average distance b/w language of respondent and of Muslim deportees, demeaned		-0.031	-0.016		-0.290**		-0.048	-0.064		-0.027
		(0.036)	(0.031)		(0.137)		(0.043)	(0.044)		(0.080)
$\mathbb{1}$\{Muslim/Protestant deportation\}	-0.012	-0.027	0.057	-0.040	-0.381*	0.005	-0.038	-0.063	0.054	0.016
	(0.061)	(0.051)	(0.067)	(0.070)	(0.216)	(0.041)	(0.031)	(0.038)	(0.050)	(0.129)
Average distance b/w language of respondent and of Muslim deportees		-0.354	-0.506**		1.618		0.426***	0.491***		0.316
		(0.255)	(0.236)		(1.161)		(0.134)	(0.142)		(0.627)
Observations	4,497	4,497	4,497	3,546	3,546	2,732	2,732	2,732	2,078	2,078
R-squared	0.153	0.153	0.159	0.176	0.184	0.0726	0.0725	0.0755	0.0776	0.0792
Region FE and Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mean of dependent var.	0.190	0.190	0.190	0.178	0.178	0.108	0.108	0.108	0.119	0.119
SD of dependent var.	0.265	0.265	0.265	0.266	0.266	0.310	0.310	0.310	0.324	0.324

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents heterogeneity by religious and linguistic distance. All regressions control for the size of all other deportee groups. The sample is restricted to representatives of the majority group in each country. All regressions are conditional on religious group dummies and region fixed effects and on a set of individual controls (age, gender, education and log of income) and geographic controls (log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter). Columns 2 and 4 also control for the direct effect of linguistic-distance variables. Standard errors are corrected for spatial correlation within a 150km radius following Conley (1999).

Table 9: Test for alternative explanations: selective in-migration and outmigration
Sample restriction: respondents, whose ancestors lived in deportation regions in 1939

Dependent Var.:	(1) 1st Principal Comp. Gender Attitudes	(2)	(3) Tried to start a business	(4) Family moved out	(5) Gender attitudes
Sample - ancestors moved or not:	Family did not move			All	All
Sample - gender of respondent:	Female	Male	Female	Both	Both
Panel A. Specification 1, in levels. Sample: all localities.					
Protestant Deportees (ln)	0.014*	0.013**	0.012**		
	(0.008)	(0.006)	(0.006)		
Sunni Muslim Deportees (ln)	-0.006	0.002	-0.013**		
	(0.006)	(0.006)	(0.006)		
Protestant deportees in ancestor's region (ln)				0.009	
				(0.020)	
Protestant deportees in ancestor's region (ln)					0.001
× Family moved out					(0.005)
Muslim deportees in ancestor's region (ln)				0.014	
				(0.016)	
Muslim deportees in ancestor's region (ln)					0.009
× Family moved out					(0.008)
Family moved out					-0.075
					(0.086)
$\mathbb{1}$\{Muslim/Protestant deportation\}	-0.032	-0.014	-0.008		
	(0.057)	(0.055)	(0.045)		
Observations	1,659	1,177	1,736	9,277	8,661
R-squared	0.210	0.245	0.0844	0.305	0.155
Mean of dependent var.	0.208	0.160	0.108	0.388	0.210
SD of dependent var.	0.271	0.248	0.310	0.487	0.280
Panel B. Specification 2, in shares. Sample: localities with deportations.					
Share of Protestant deportees	0.038	0.090*	0.127		
	(0.108)	(0.051)	(0.087)		
Share of Protestant deportees in ancestor's region				-0.141	
				(0.139)	
Share of Protestant deportees in ancestor's region					0.022
× Family moved out					(0.044)
Family moved out					0.004
					(0.022)
Observations	1,137	819	1,171	9,277	8,661
R-squared	0.218	0.267	0.0941	0.303	0.154
Mean of dependent var.	0.185	0.148	0.113	0.388	0.210
SD of dependent var.	0.270	0.247	0.317	0.487	0.280
Region FE and Controls	✓	✓	✓		
Country of destination and of origin FEs				✓	✓
Clustered by region of origin and respondent				✓	✓
Sample: Ancestors from deportation regions				✓	✓
FE for the region of ancestor					✓

Note: *** p<0.01, ** p<0.05, * p<0.1. Panel A and B present our main specifications in levels and shares, respectively. In columns 1-3: the sample is restricted to respondents whose ancestors lived in 1939 in the same region as the respondents. Standard errors are corrected for potential spatial correlation within a 150km radius following Conley (1999). In columns 4 and 5: the sample is comprised of all ancestors from regions with Protestant or Muslim deportation. The unit of analysis is the respondent's ancestor. In column 4, the dependent variable is a dummy equal to one if the respondent lives in a different region than the region of residence of either his or her ancestors in 1939. In column 5, we use this variable as the explanatory variable and the dependent variable is the 1st principal component of gender attitudes. These regressions controls for the size of all other deportee groups, the gender of the parent, country of destination fixed effects, and country of origin fixed effects. Two-way clusters are applied: by respondent and by the region of origin of the ancestor. In Column 5, fixed effects for the region of ancestor's origin are included in the set of covariates.

A Online Appendix

Table A1: Ethnic deportees by religion and destination

	The number of ethnic deportees by religion and destination						
		Soviet republic of destination					
Ethnicity (% in religious group):	All	Russia	Kazakhstan	Uzbekistan	Kyrgyzstan	Tajikistan	Turkmenistan
Protestants:	**52.7%**	**31.1%**	**19.5%**	**0.3%**	**0.7%**	**1%**	**0.1%**
Germans (96.5%)	1,103,654	634,807	423,185	6,424	15,877	21,012	2,349
Latvians	35,707	35,707	-	-	-	-	-
Estonians	3,790	3,790	-	-	-	-	-
Sunni Muslims:	**34.6%**	**2.3%**	**19.0%**	**7.3%**	**5.8%**	**0.2%**	-
Chechens (60%)	450,119	411	375,300	98	74,272	38	-
Crimean Tatars (25%)	184,827	44,434	6,465	127,999	1,118	4,804	7
Meskhetian Turks (10%)	75,450	4,518	30,032	31,333	9,567	-	-
Karachay	25,415	-	-	-	25,415	-	-
Balkar	15,093	-	-	-	15,093	-	-
Catholics and Jews:	**6.6%**	**4.6%**	**2.0%**	-	-	-	-
Lithuanians	78,921	78,921	-	-	-	-	-
Poles (Catholics and Jews)	43,814	7	43,807	-	-	-	-
Baltic	19,884	19,881	3	-	-	-	-
Orthodox:	**3.1%**	**1.4%**	**1.7%**	-	-	-	-
Greeks	36,776	-	36,767	-	9	-	-
Moldavians	29,988	29,988	-	-	-	-	-
Buddhists:	**2.9%**	**2.7%**	**0.1%**	-	-	-	-
Kalmyk	62,251	58,749	2,374	756	262	105	5
Shia Muslims:	**0.2%**	-	**0.2%**	-	-	-	-
Iranians	4,460	-	4,460	-	-	-	-
Number of destination districts (municipalities)	1,131	774	190	97	55	12	3

Notes: Source: 1951 NKVD Deportation Census. "-" denotes zero. We cannot distinguish between Poles (who were Catholics) and Jews deported from annexed territories of Poland.

Table A2: Summary statistics

Sample:	All PSUs				PSUs with deportations			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Main outcomes:								
Disagree: A woman should do most of the household chores	0.17	0.37	0.00	1.00	0.15	0.36	0.00	1.00
Disagree: It is better for everyone if the man earns the money	0.19	0.39	0.00	1.00	0.18	0.39	0.00	1.00
Disagree: Men make better political leaders	0.22	0.41	0.00	1.00	0.21	0.41	0.00	1.00
Gender attitudes score from PC1, normalized	0.19	0.26	0.00	1.00	0.18	0.27	0.00	1.00
Tried to start a business	0.14	0.34	0.00	1.00	0.15	0.36	0.00	1.00
Member of a women's groups	0.04	0.19	0.00	1.00	0.04	0.19	0.00	1.00
Mother completed tertiary education	0.14	0.35	0.00	1.00	0.15	0.36	0.00	1.00
Main treatment:								
Share of Protestant deportees (30km radius)	0.20	0.32	0.00	1.00	0.33	0.35	0.00	1.00
Share of (Sunni) Muslim deportees (30km radius)	0.36	0.42	0.00	1.00	0.60	0.39	0.00	1.00
Number of Protestant Deportees (30km radius)	1,131	2,583	0.00	22,221	1,876	3,109	0	22,221
Number of (Sunni) Muslim Deportees (30km radius)	2,737	4,821	0.00	24,787	4,538	5,510	0	24,787
Religious distance to Protestants (demeaned)	-0.00	0.41	-0.78	0.22	0.09	0.33	-0.78	0.22
Religious distance to (Sunni) Muslims (demeaned)	-0.00	0.82	-0.43	1.57	-0.19	0.66	-0.43	1.57
Protestant deportees (ln) x Religious distance (demeaned)	0.22	1.79	-7.84	2.13	0.36	2.28	-7.84	2.13
Muslim deportees (ln) x Religious distance (demeaned)	-1.47	2.56	-4.38	15.35	-2.42	2.92	-4.38	15.35
Linguistic distance to Protestants (demeaned)	0.00	0.04	-0.05	0.04	0.01	0.03	-0.05	0.04
Linguistic distance to (Sunni) Muslims (demeaned)	0.00	0.12	-0.09	0.25	0.06	0.12	-0.09	0.25
Protestant deportees (ln) x Linguistic distance (demeaned)	0.02	0.18	-0.41	0.36	0.03	0.23	-0.41	0.36
(Sunni) Muslim deportees (ln) x Linguistic distance (demeaned)	0.24	0.65	-0.86	2.17	0.40	0.79	-0.86	2.17
Controls:								
Protestant or Muslim deportation dummy (30km radius)	0.60	0.49	0.00	1.00	1.00	0.00	1.00	1.00
Share of Catholic/Jewish deportees (30km radius)	0.01	0.05	0.00	0.65	0.01	0.06	0.00	0.65
Share of Buddhist deportees (30km radius)	0.01	0.04	0.00	0.53	0.01	0.06	0.00	0.53
Share of Orthodox Christian deportees (30km radius)	0.01	0.05	0.00	0.65	0.01	0.06	0.00	0.65
Share of Shia Muslim deportees (30km radius)	0.00	0.00	0.00	0.07	0.00	0.01	0.00	0.07
Share of nonethnic deportees (30km radius)	0.03	0.13	0.00	1.00	0.04	0.13	0.00	0.97
Number of Catholic/Jewish Deportees (30km radius)	41	296	0	3,902	69	378	0	3,902
Number of Buddhist Deportees (30km radius)	24	170	0	1,891	40	217	0	1,891
Number of Orthodox Christian Deportees (30km radius)	50	398	0	10,381	83	510	0	10,381
Number of Shia Muslim Deportees (30km radius)	7	76	0	1,335	12	97	0	1335
Nonethnic deportees (30km radius)	182	937	0	10,015	293	1,188	0	10,015
Number of deportees (30km radius)	4,175	6,125	0	34,100	6,913	6,580	1	34,100
Age of respondent	42.98	15.20	18.00	95.00	42.51	14.79	18.00	93.00
Highest education completed	4.82	1.19	1.00	8.00	4.83	1.17	1.00	8.00
Male dummy	0.43	0.49	0.00	1.00	0.43	0.50	0.00	1.00
Household net monthly income (ln)	10.53	2.62	0.00	17.43	11.03	2.63	0.00	17.43
Predicted mother's age	69.60	16.18	43.00	123.00	69.11	15.76	43.00	121.00
1939 population (30km radius) (ln)	11.54	2.20	6.26	17.42	11.55	1.81	6.26	16.12
Ratio of # of deportees to 1939 population (30km radius)	0.11	0.45	0.00	5.62	0.18	0.56	0.00	5.62
Capital dummy (old or new)	0.12	0.33	0.00	1.00	0.14	0.34	0.00	1.00
Distance to railroad (km)	17.09	30.36	0.00	162.31	10.70	18.12	0.00	142.41
Urban dummy	0.44	0.50	0.00	1.00	0.47	0.50	0.00	1.00
Ruggedness	75.63	22.96	9.88	99.72	79.16	18.17	26.85	99.72
Travel distance to capital city (km)	505.16	817.43	0.00	6057.08	425.38	670.67	0.00	5970.96
Distance to Gulag camp (km)	135.90	111.25	1.16	458.49	133.57	114.49	1.16	427.38
Distance to water (km)	12.27	13.19	0.00	95.04	11.25	10.30	0.00	54.94
Precipitation (June-August)	25.67	26.74	0.41	118.28	20.89	23.01	0.43	118.28
Temperature (June-August)	21.07	4.95	-1.28	28.56	22.35	4.33	6.66	28.56
Precipitation (Dec-Feb)	35.03	16.18	8.66	111.53	32.82	14.68	9.51	111.53
Temperature (Dec-Feb)	-4.87	6.47	-21.57	4.60	-3.95	6.66	-20.66	4.60
Soil Suitability high inputs	2.90	1.64	1.00	7.64	2.56	1.23	1.00	6.07
Soil Suitability low inputs	3.46	1.27	1.03	7.62	3.25	1.00	1.27	6.84
Observations	5727				3454			

Table A3: Heterogeneity of results by quartile of the ratio of the number of deportees to the 1939 local population

Dependent Var.:	(1) 1st principle component progressive gender attitudes	(2) Tried to start a business
Sample - gender	Both	Female
1st quartile × Share of Protestant deportees	0.103*	0.107
	(0.060)	(0.066)
2nd quartile × Share of Protestant deportees	0.191***	0.080
	(0.055)	(0.080)
3rd quartile × Share of Protestant deportees	0.218***	0.181**
	(0.047)	(0.082)
4th quartile × Share of Protestant deportees	0.047	0.181**
	(0.075)	(0.079)
Observations	2,822	1,688
R-squared	0.174	0.0862
Mean of dependent var.	0.181	0.116
SD of dependent var.	0.271	0.320
Region FE and Controls	✓	✓
Quartile FE	✓	✓
Sample - all PSUs	✓	✓

Note: *** p<0.01, ** p<0.05, * p<0.1. The table presents the heterogeneity of the effect with respect to the ratio of the number of deportees to the 1939 population, by quartile. The intervals of this ratio in each of the four quartiles are: 1st: (0; 0.01]; 2nd: (0.01; 0.042]; 3rd: (0.042; 0.13]; 4th: (0.13; 5.62]. The sample is restricted to representatives of the majority group in each country. All regressions control for the share of all other deportee groups (excluding Sunni Muslims) and the total size of deportations. All regressions are conditional on religious and ethnicity group dummies, region fixed effects, quartile-group fixed effects and on a set of individual controls (age, education and log of income) and geographic controls (log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter). Standard errors are corrected for potential spatial correlation within a 150km radius following Conley (1999).

Table A4: Religious and linguistic distances between locals and deportees

Religious Distance	Deportee groups (Traditional religion of deportee groups)			
	Germans (Protestant)	Chechens (Muslim)	Crimean Tatars (Muslim)	Meskhetian Turks (Muslim)
Local population:				
Russians (Orthodox)	1	2	2	2
Central Asians (Muslim)	2	0	0	0
Linguistic Distance	Deportee groups (Language of deportee groups)			
	Germans (German)	Chechens (Chechen)	Crimean Tatars (Crimean Tatar)	Meskhetian Turks (Turkish)
Local population:				
Russians (Russian)	92.04	104.13	99.11	98.25
Kazakhs (Kazakh)	99.23	102.12	35.65	72.81
Kyrgyz (Kyrgyz)	98.55	100.60	48.00	71.80
Tajiks (Tajik)	91.06	99.80	97.25	97.82
Uzbeks (Uzbek)	98.81	101.59	46.68	69.79

Note: The table presents religious and linguistic distances between the local native population at deportation destination locations and the four largest deportee groups.

Table A5: Robustness to using different types of clusters of standard errors

	(1)	(2)	(3)
	1st Principal Component Progressive attitudes normalized b/w 0 and 1		Tried to start a business
Sample - gender	Female	Male	Female
Panel A. Specification 1, levels. Sample: all localities			
Protestant Deportees (ln)	0.026	0.017	0.009
Baseline - Conley s.e. 150km radius	*(0.004)****	*(0.004)****	*(0.004)***
s.e. clustered by PSU	*(0.006)****	*(0.006)****	*(0.005)**
s.e. clustered by region	*(0.006)****	*(0.005)****	*(0.005)**
Conley s.e. 200km radius	*(0.004)****	*(0.003)****	*(0.004)***
Muslim Deportees (ln)	-0.005	-0.004	-0.012
Baseline - Conley s.e. 150km radius	*(0.007)*	*(0.006)*	*(0.004)****
s.e. clustered by PSU	*(0.006)*	*(0.006)*	*(0.006)***
s.e. clustered by region	*(0.006)*	*(0.006)*	*(0.005)***
Conley s.e. 200km radius	*(0.006)*	*(0.005)*	*(0.005)***
Observations	2,572	1,925	2,732
R-squared	0.164	0.162	0.0704
Mean of dependent var.	0.206	0.170	0.108
SD of dependent var.	0.271	0.256	0.310
Panel B. Specification 2, shares. Sample: localities with deportations			
Share of Protestant deportees	0.156	0.180	0.130
Baseline - Conley s.e. 150km radius	(0.050)***	(0.052)***	(0.057)**
s.e. clustered by PSU	(0.058)***	(0.061)***	(0.045)***
s.e. clustered by region	(0.043)***	(0.045)***	(0.053)**
Conley s.e. 200km radius	(0.047)***	(0.039)***	(0.060)**
Observations	1,616	1,206	1,688
R-squared	0.204	0.203	0.0835
Mean of dependent var.	0.195	0.163	0.116
SD of dependent var.	0.279	0.260	0.320
Region FE and Controls	✓	✓	✓

Note: *** p<0.01, ** p<0.05, * p<0.1. Panel A presents our main specification in levels. All regressions control for the size of all other deportee groups. Panel B presents the specification in shares. All regressions control for the share of all other deportee groups (excluding Sunni Muslims) and the total size of deportations. In both panels, the sample is restricted to representatives of the majority group in each country, and in Panel B the sample is further restricted to PSUs within 30km of a deportation. All regressions are conditional on religious group dummies and region fixed effects and on a set of individual controls (age, education, and log of income) and geographic controls (log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter).

Table A6: Robustness to aggregating the data at the PSU level

	(1)	(2)	(3)
	1st Principal Component Progressive attitudes normalized b/w 0 and 1		Tried to start a business
Sample - gender	Female	Male	Female
Panel A. Specification 1, levels. Sample: all localities.			
Protestant deportees (ln), PSU mean	0.020***	0.017***	-0.001
	(0.004)	(0.006)	(0.005)
Muslim deportees (ln), PSU mean	-0.009	-0.008	-0.018***
	(0.007)	(0.006)	(0.005)
$\mathbb{1}$\{Muslim/Protestant deportation\}	-0.047	-0.024	0.074
	(0.048)	(0.050)	(0.047)
Observations	352	340	353
R-squared	0.401	0.362	0.394
p-value: β(Protestant) = β(Muslim)	*0.000****	*0.000****	*0.000****
p-value: β(Protestant) = - β(Muslim)	*0.123*	*0.345*	*0.019***
Mean of dependent var.	0.211	0.176	0.115
SD of dependent var.	0.178	0.171	0.160
Panel B. Specification 2, shares. Sample: localities with ethnic deportations.			
Share of Protestant deportees, PSU mean	0.095	0.232***	0.159***
	(0.065)	(0.067)	(0.051)
Observations	221	213	221
R-squared	0.473	0.457	0.484
Mean of dependent var.	0.207	0.169	0.129
SD of dependent var.	0.192	0.174	0.174
Region FE and Controls	✓	✓	✓

Note: *** p<0.01, ** p<0.05, * p<0.1. Panel A presents our main specification in levels, with all variables aggregated to the mean of the Primary Sampling Unit (PSU). All regressions control for the size of all other deportee groups. Panel B presents the specification in shares. All regressions control for the share of all other deportee groups (excluding Sunni Muslims) and the total size of deportations. In both panels, the sample is restricted to the PSU mean of representatives of the majority group in each country for females and males separately, and in Panel B, the sample is further restricted to PSUs within 30km of a deportation. All regressions are conditional on the share of Muslim respondents in the PSU, region fixed effects, a set of PSU-level demographic controls (mean age, shares of different levels of education, and mean log of income) and geographic controls (log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter). Standard errors are corrected for spatial correlation within a 150km radius following Conley (1999).

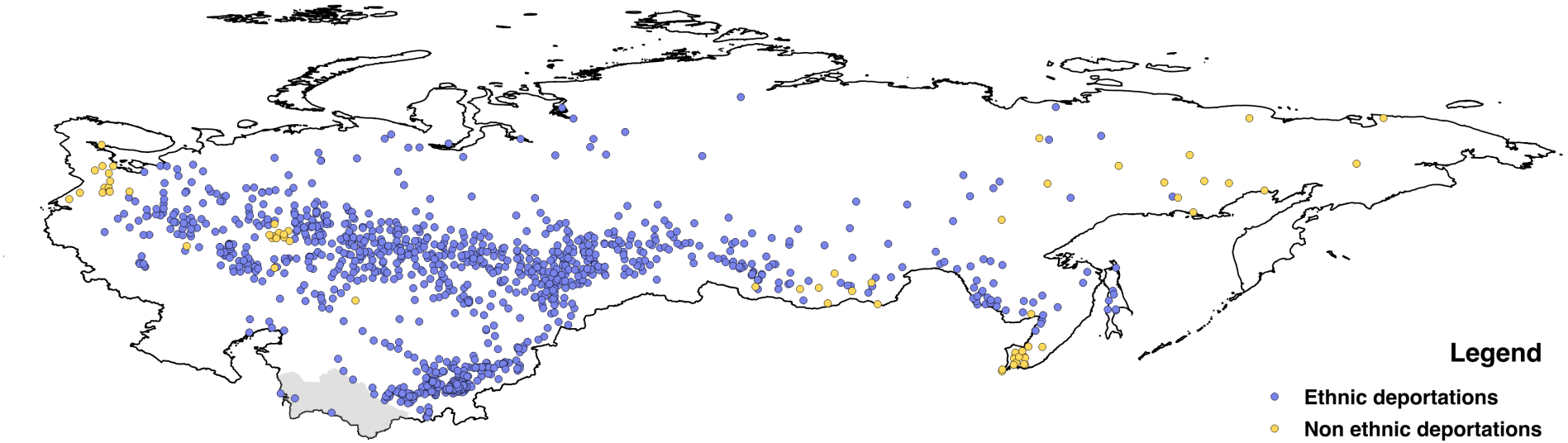
Figure A1: Deportees on the road to their destination and at work at their destination

(a) Chechen deportees on the road to their destination

(b) Volga German deportees at work in Siberia

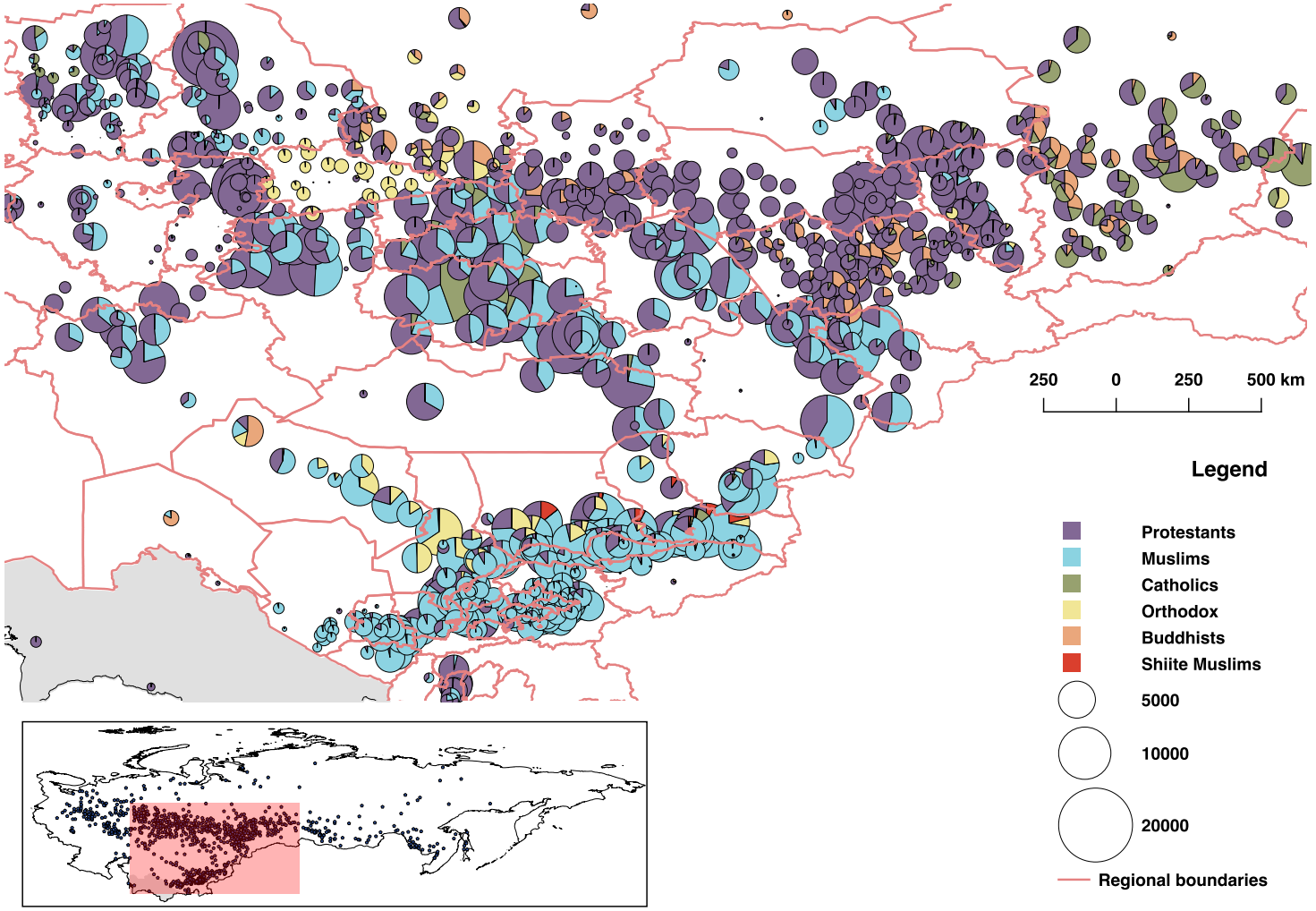
Note: Copyright for Panel (a): Wikimedia Commons; for Panel (b): Alamy (www.alamy.com).

Figure A2: Destination locations of all ethnic and nonethnic deportations



Note: The map presents deportation locations of all ethnic and nonethnic deportees, as recorded in 1951 deportation census. Nonethnic deportations were comprised mostly of "Kulaks" (wealthy farmers expropriated during the collectivization), but also of "other anti-Soviet elements."

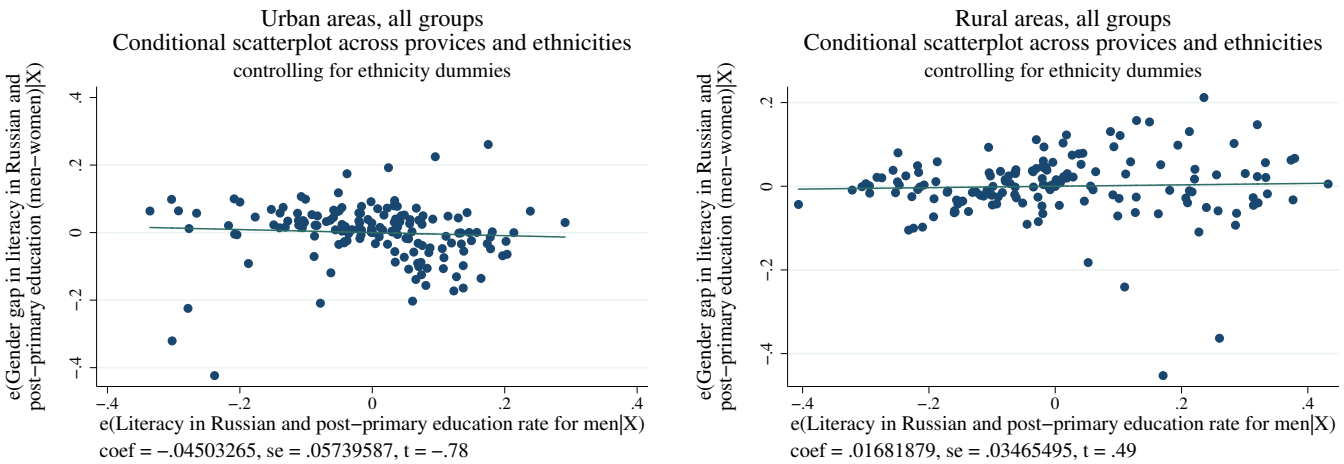
Figure A3: Religious composition and size of ethnic deportations



Note: The map zooms into the area with the most sizable ethnic deportations. It presents the size and the religious composition of ethnic deportations and regional boundaries.

Figure A4: Gender gap in education and the level of education across the Russian empire provinces and ethnic groups

(a) **(b)**

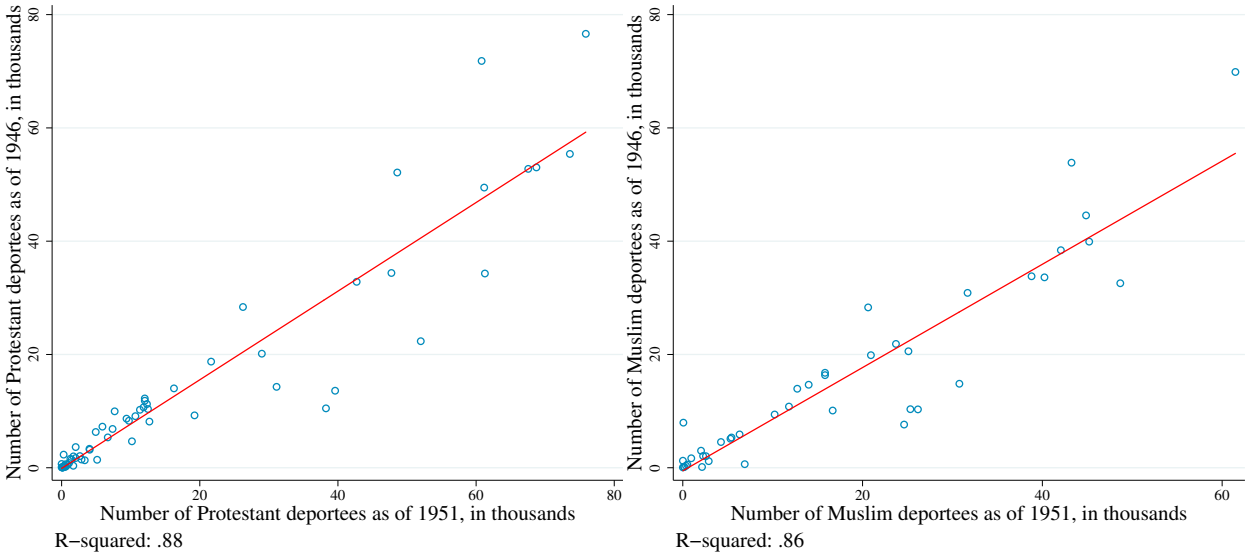


Note: The figure presents scatterplots of the literacy in Russian and post-primary education gender gap for Germans, Chechens, Crimean Tatars, Meskhetian Turks, Russians and Central Asian ethnicities as a function of the male literacy in Russian and post-primary education rate across provinces conditional on ethnicity fixed effects. Figures (a) and (b) presents the results for urban and rural areas, respectively. The sample is restricted to provinces with at least 200 individuals in each ethnicity.

Figure A5: Check on the deportations data, subnational-region level

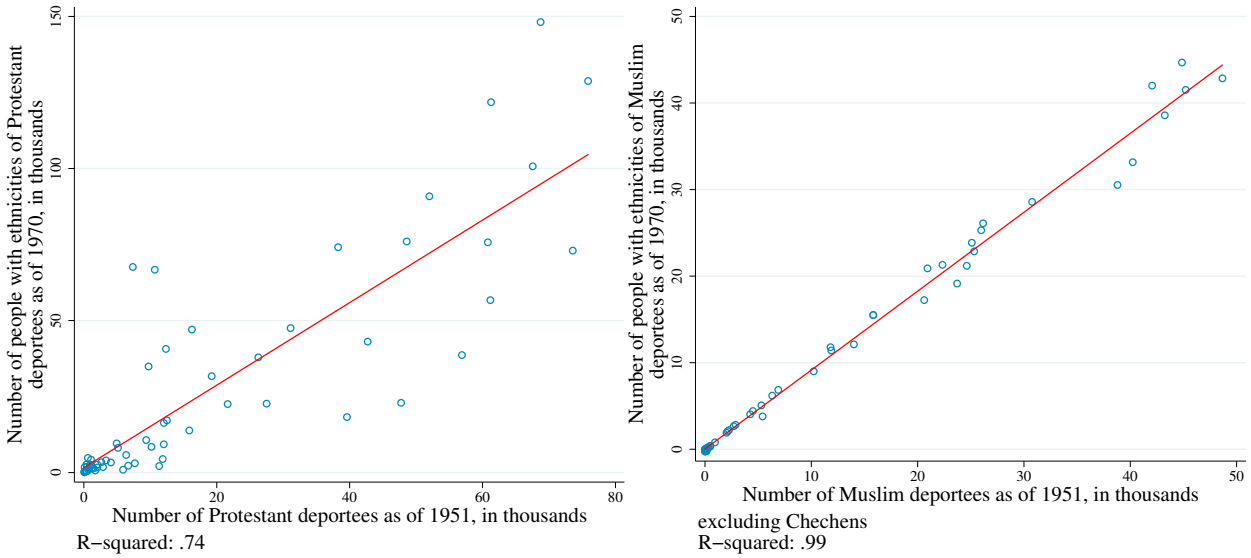
Panel A: 1951 Deportation census vs. 1946 Deportation census

Protestant deportees (left) and Muslim deportees (right)



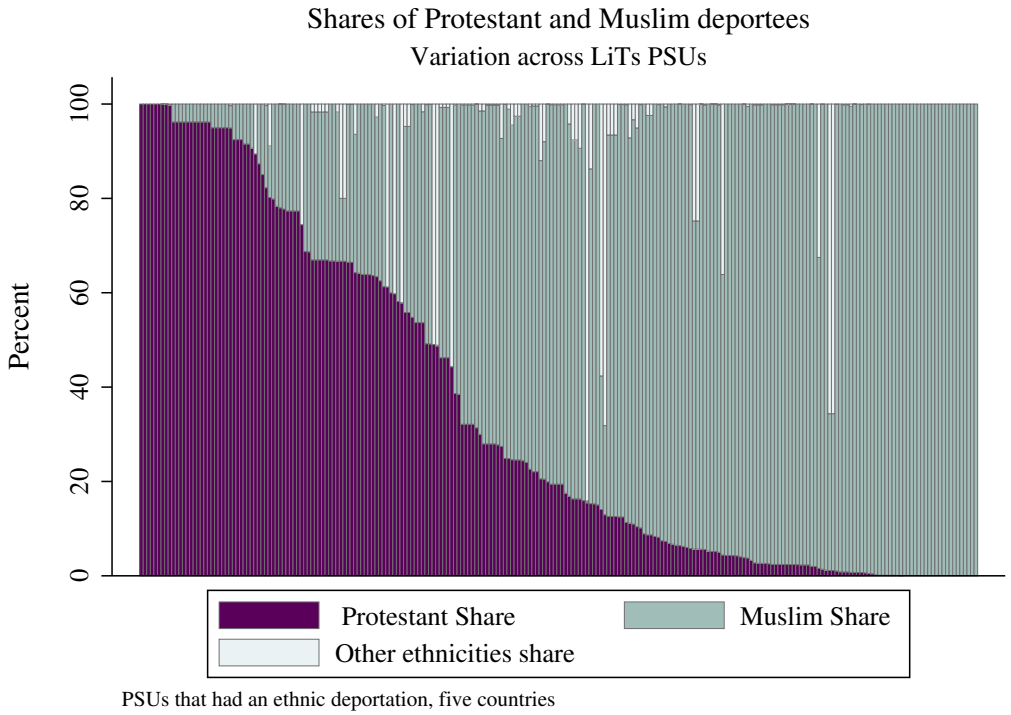
Panel B: 1951 Deportation census vs. 1970 USSR Census

Deportee groups in 1951 excluding Chechens who left in the 1960s vs.
people of the same ethnicities in 1970
Protestants (left) and Muslims (right)



Note: Panel A presents scatter plots of the size of the deported groups by region in 1946 and 1951 NKVD Deportation censuses, separately for Protestant and Muslim deportees. Panel B presents scatter plots of the size of the deported groups by region in the 1970 Soviet Census plotted against the size of Protestant and Muslim deportations by region in the 1951 NKVD Deportation census. In Panel B, the group of Muslim deportees excludes Chechens because the majority of Chechen deportees left the deportation locations by 1970. The unit of measurement is 1,000 people.

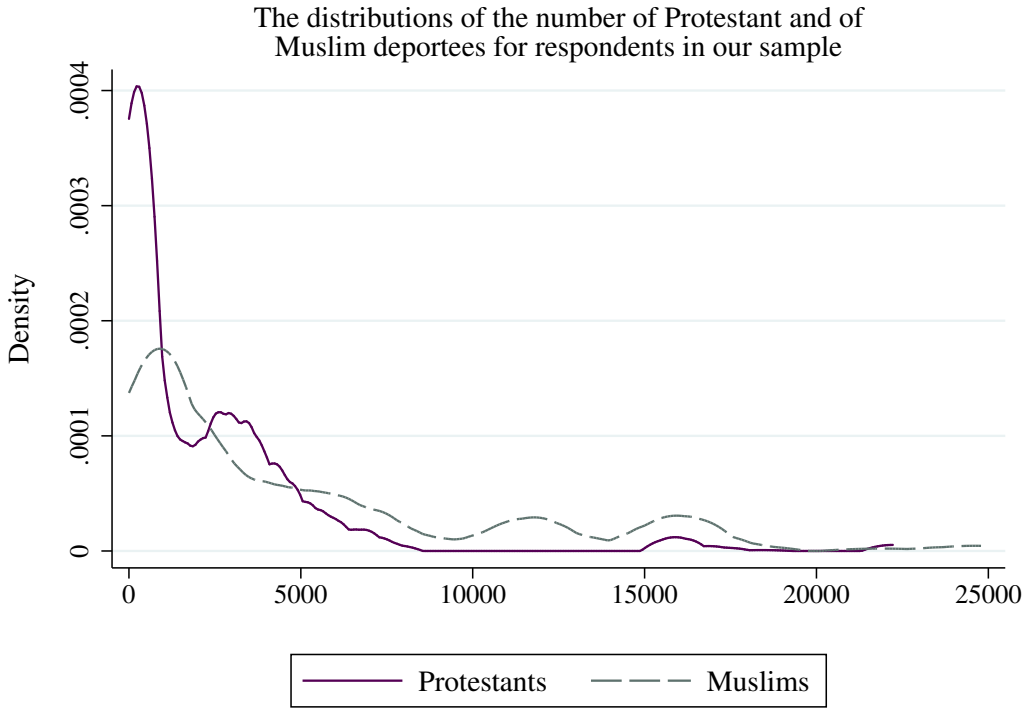
Figure A6: Variation in the share of Protestant and Muslim deportees, PSU level



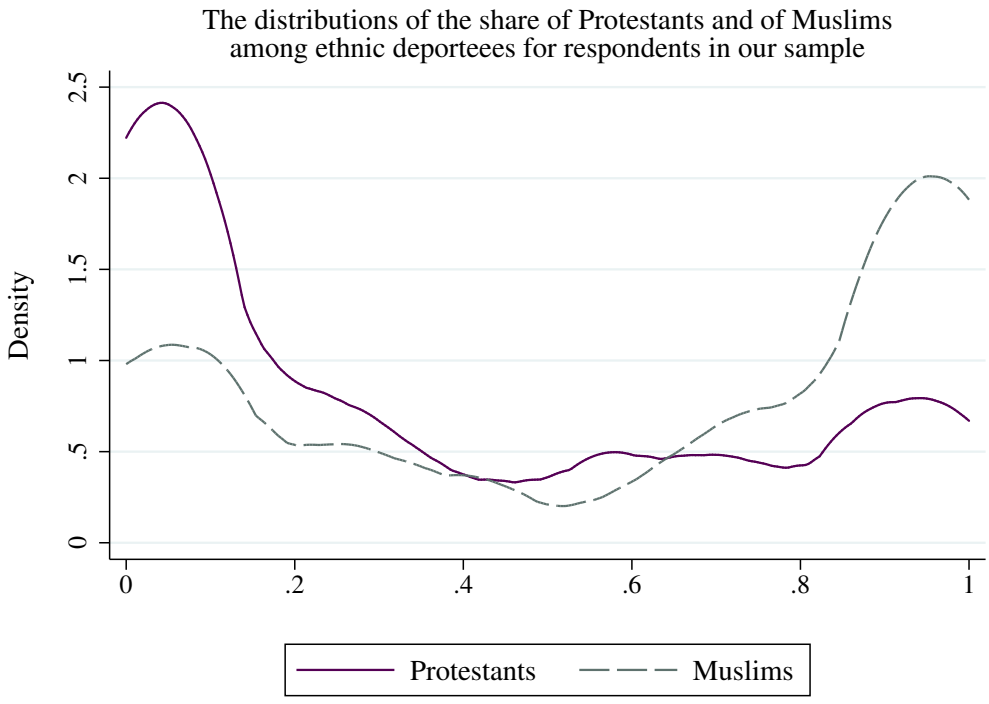
Note: The figure presents the composition of ethnic deportees across PSUs with an ethnic deportation in their vicinity. The PSUs are in the five deportation destination countries covered by the LiTS 2016 survey: Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan.

Figure A7: Variation in the number and share of Protestant and Muslim deportees among individuals living in PSUs in the vicinity of a deportation

Panel A: Number of Protestant deportees and of Muslim deportees

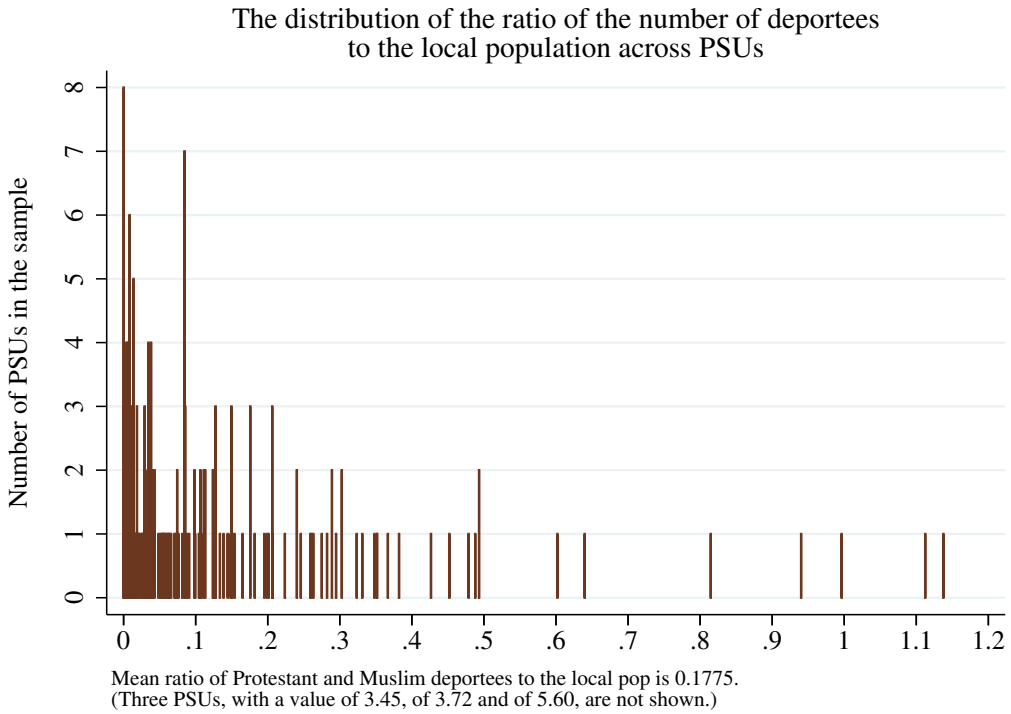


Panel B: Share of Protestant and Muslim deportees among all deportees



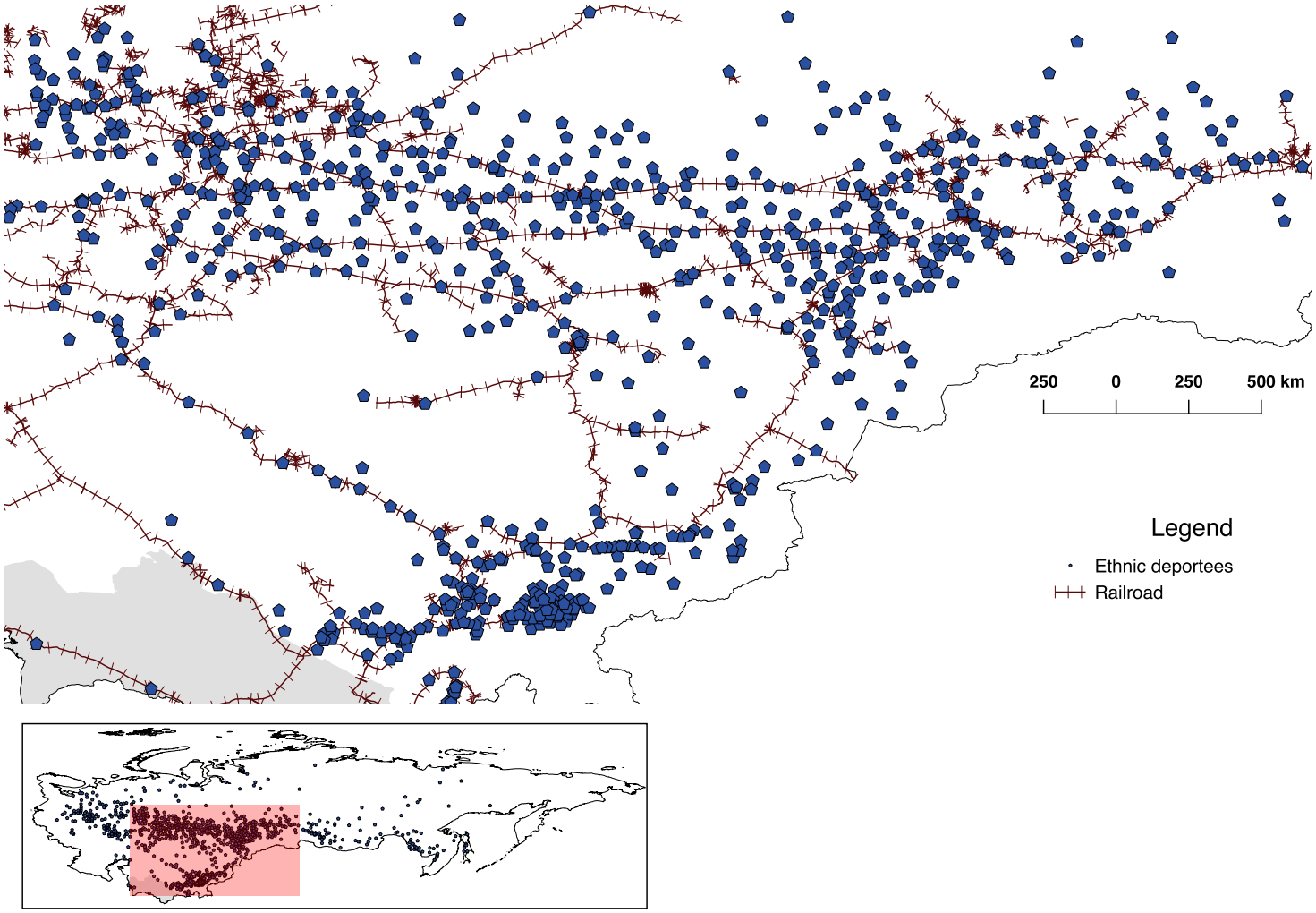
Note: The figure in Panel A presents the distribution of the number of Protestant deportees and of Muslim deportees among respondents of the majority group in each country living in PSUs within a 30km radius to a Protestant or Muslim deportation, respectively. The figure in Panel B presents the distribution of the share of Protestant and of Muslim deportees among all deportees for respondents of the majority group in each country living in PSUs within a 30km radius to an ethnic deportation. The distributions are estimated using an Epanechnikov kernel density function.

Figure A8: Variation in deportations relative to the local population in 1939



Note: The figure presents the distribution of the ratio of Protestant and Sunni Muslim deportees to the pre-war population in 1939. The sample is restricted to PSUs within a 30km radius to a deportation. Three PSUs, with a value of 3.45, of 3.72 and of 5.60, are excluded from the graph. The distributions represent the number of PSUs in the sample at each value of the ratio. Data for the local population is taken from the 1939 population census. LiTS PSUs are matched to the nearest district in the census and the population is that in a 30-km-radius circle.

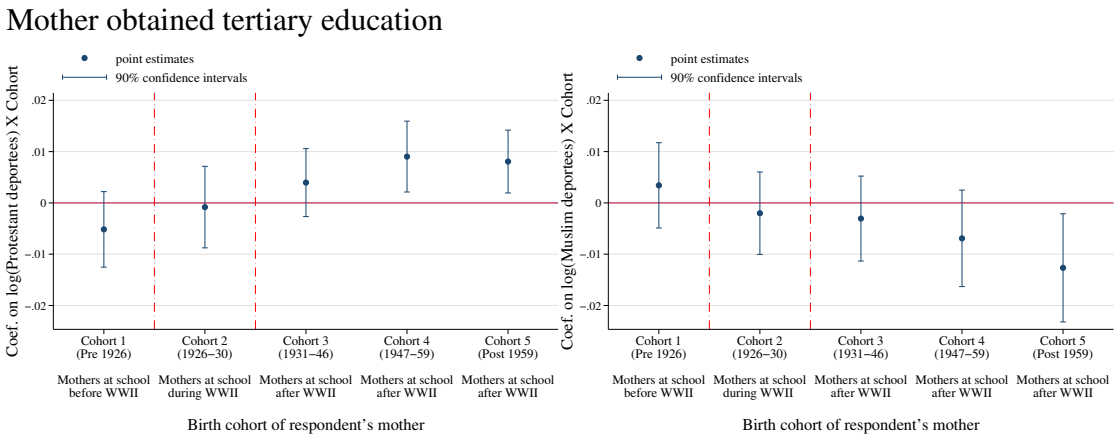
Figure A9: Deportation destinations and railroads



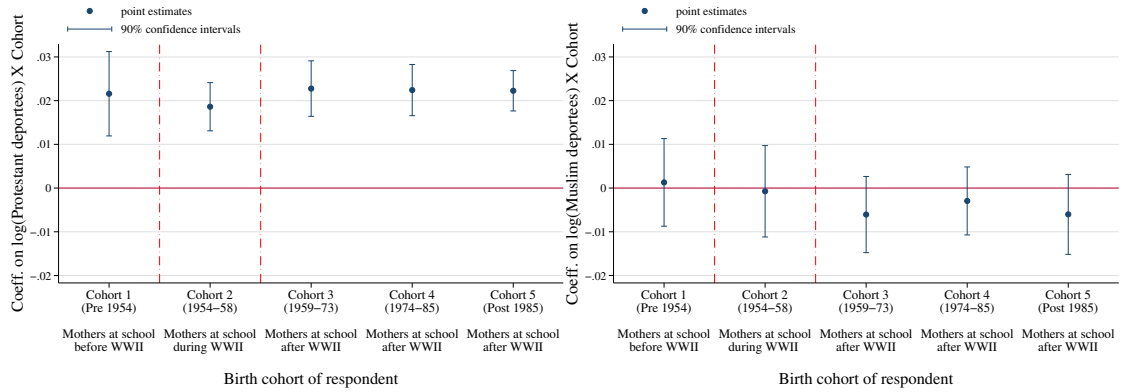
Note: The map zooms into the area with the most sizable ethnic deportations. It shows the location of deportation destinations and the railroad network.

Figure A10: The effect of the size of Protestant and Muslim deportations, by cohort

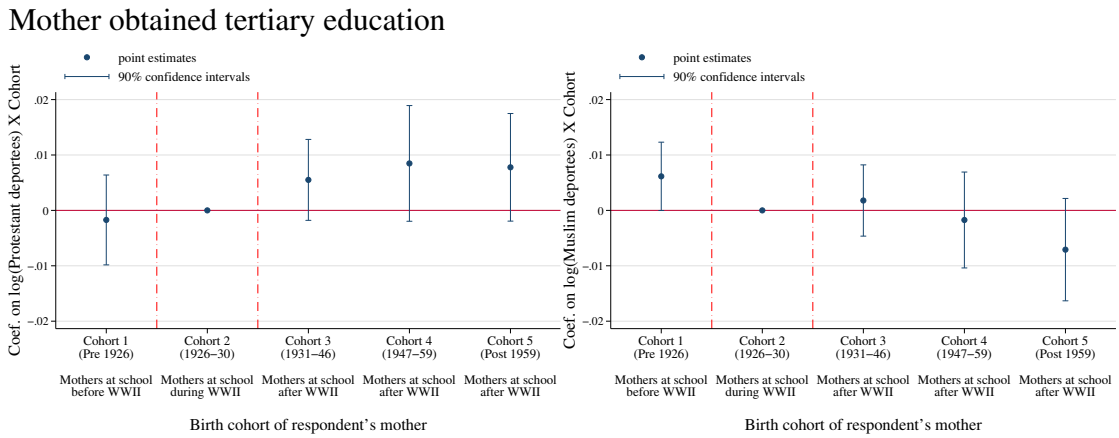
(a) The effect on mother's tertiary education



(b) The effect on respondent's gender attitudes



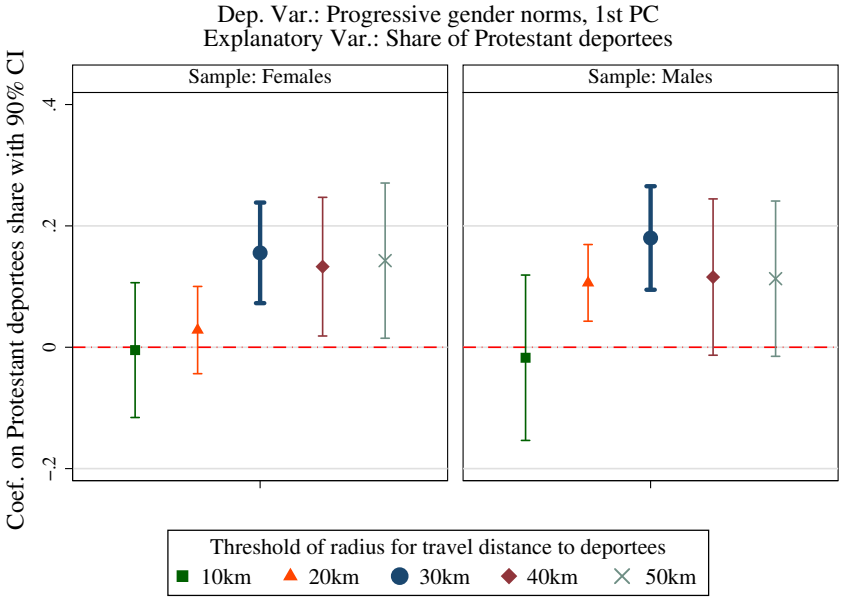
(c) The effect on mother's tertiary education, PSU-fixed-effects specification



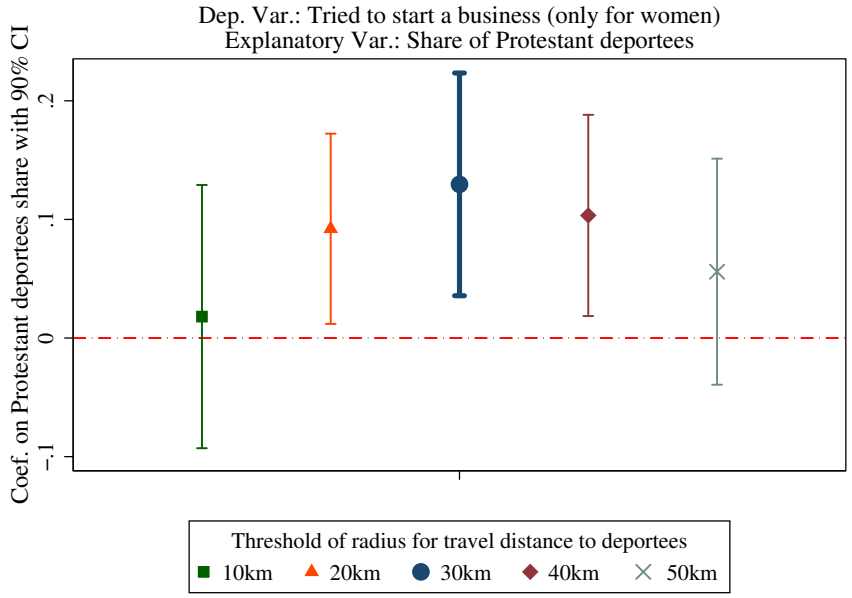
Note: The figure presents the effect of the numbers of Protestant deportees and Muslim deportees by birth cohorts. Outcome in Panels A and C is the tertiary education of respondents' mothers. Outcome in Panel B is the 1st Principal Component of progressive gender attitudes. Specifications in Panels A and B have region fixed effects. Specification in Panel C has locality (PSU) fixed effects, leaving cohort 2 as the comparison group. There is a one-to-one correspondence between the birth cohorts of respondents and of the mothers. The coefficients and 90% confidence intervals are displayed. Individual and destination location controls as well as cohort-group fixed effects are included. Standard errors are corrected for spatial correlation within a radius of 150km following Conley (1999). The two vertical lines mark three groups of respondents' mothers: 1) those who finished secondary school before deportations occurred; 2) those who did their secondary school during WWII and 3) those who went to school after the deportations took place.

Figure A11: Robustness of the effect of the share of Protestant deportees to using different thresholds for travel distance to deportees

(a) The effect on gender attitudes



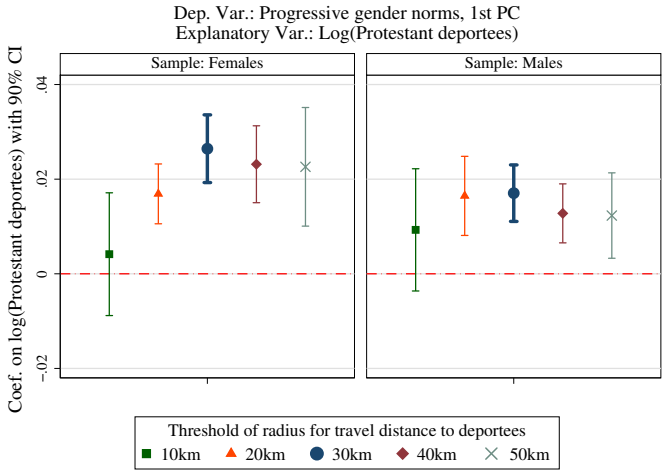
(b) The effect on entrepreneurship among women



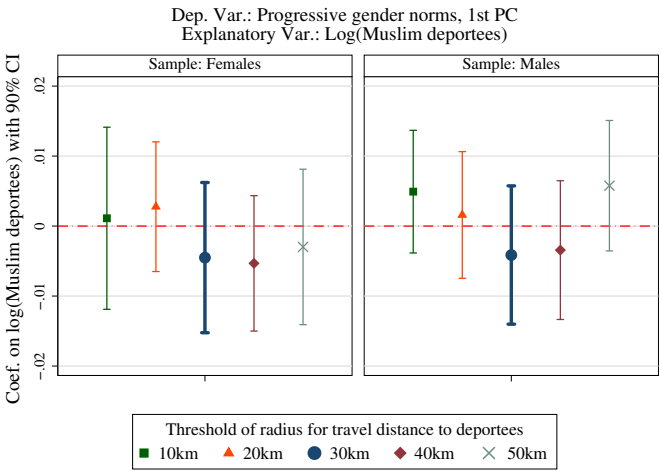
Note: The figure presents the effect of the share of Protestant deportees on on the 1st Principal Component of progressive gender attitudes (Panel A), separately for males and females, and on a dummy for having tried to start a business, among female respondents (Panel B). The coefficients and 90% confidence intervals displayed are from OLS regressions that control for the share of all other deportee groups (excluding Sunni Muslims) and the total size of deportations at various distance thresholds (N=10km, 20km, 30km, 40km or 50km). The sample is restricted to representatives of the majority group in each country residing in a PSU within N km of a deportation. In both panels, all regressions are conditional on religious group dummies and region fixed effects. The regressions also include a set of individual controls (age, education and log of income) and geographic controls (log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter). Standard errors are corrected for spatial correlation within a 150km radius following Conley (1999).

Figure A12: Robustness of the effect of the number of Protestant and Muslim deportees to using different thresholds for travel distance to deportees

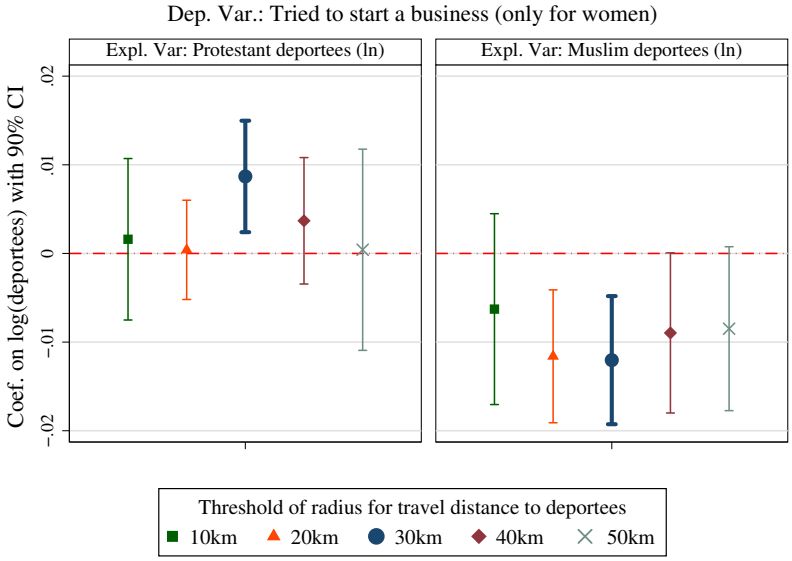
(a) The effect on gender attitudes of Protestant deportees



(b) The effect on gender attitudes of Muslim deportees



(c) The effect on entrepreneurship among women of Protestant and Muslim deportees



Note: The figure presents the effect of the level of Protestant deportees and Muslim deportees on the 1st Principal Component of progressive gender attitudes (Panels A and B), separately for males and females, and on a dummy for having tried to start a business, among female respondents (Panel C). The coefficients and 90% confidence intervals displayed are from OLS regressions that control for the size of all other deportee groups and a dummy for a Protestant or Muslim deportation at various distance thresholds (N=10km, 20km, 30km, 40km or 50km). The sample is restricted to representatives of the majority group in each country residing in a PSU within N km of a deportation. All regressions are conditional on religious group dummies and region fixed effects. The regressions also control for a set of individual controls (age, education and log of income) and geographic controls (log of 1939 population, distance to the closest railroad, capital city, water, and Gulag camp, past/current capital and current urban status, ruggedness, soil suitability for high and low inputs, and average long-run precipitation and temperature in summer and winter). Standard errors are corrected for spatial correlation within a 150km radius following Conley (1999).