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

Antonela Miho (PSE)
ⓡ
Alexandra Jarotschkin (World Bank)
ⓡ
Ekaterina Zhuravskaya (PSE and EHESS)

Forthcoming in the JEEA

A consensus in social sciences

- Social scientists agree that culture is an important driver of human behavior
  - Richerson & Boyd 2006; Spolaore & Wacziarg 2013; Alesina & Giuliano 2015
- It is transferred both "vertically" across generations and "horizontally" across groups
  - Richerson & Boyd 2006; Bisin & Verdier 2010
- There is a large economics literature on cultural persistence and cultural barriers to social learning
  - Bisin & Verdier 2010; Spolaore & Wacziarg 2009
- There is also vast anthropological evidence on the horizontal transmission of cultural traits (Henrich, 2017)

Motivation

- Systematic empirical evidence of between-group cultural transmission is recent and still scarce
- In some contexts, people embrace new alien cultures
  - e.g., Clingingsmith et al. (2009); Tuccio & Wahba (2018); Giuliano & Tabellini (2018)
- In other contexts, people reject other cultures and increase identification with their own culture
  - e.g., Grosfeld et al. (2013); Sakalli (2018)

Motivation

- A large well-identified literature on the effects of intergroup contact uses experimental settings, in which people from different groups are randomly assigned to the same locations
  - The literature studied random allocations of children to classes, students to dorms, soldiers to regiments, etc.
    - mostly focusing on the Allport's contact hypothesis
  - In such experiments, subjects are often incentivized to cooperate (e.g., soldiers are assigned common tasks)
  - Alternatively, they are united by a common goal (as in Clingingsmith et al. 2009 Hajj paper)
- In many settings, people choose freely whether to interact with members of other ethnic groups

Motivation

- We use Stalin's ethnic deportations during WWII to document the diffusion of gender norms
  - from deportees to the native local population
- An ideal setting for studying horizontal cultural transmission
  1. Gender norms differed sharply across deported groups
  2. The variation in the exposure was quasi-exogenous
  3. No special conditions were created for cooperation between natives and deportees
  4. Most deportees and their descendants left before the long-run outcomes were measured

Research question

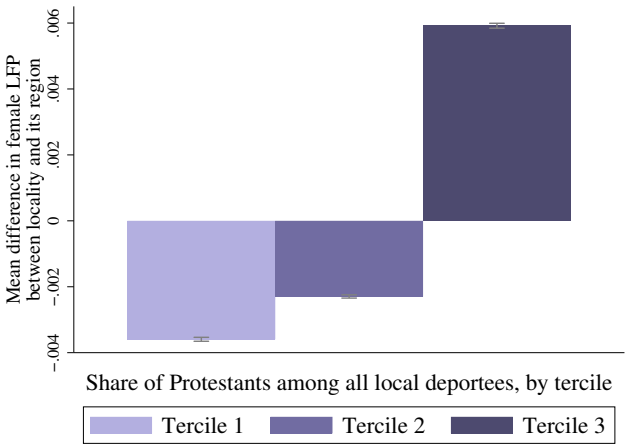
Did gender norms transfer horizontally from deportees to the native local population?

- We proxy for gender norms with traditional religion of deportees (Protestant vs. Muslim)
- We find that the egalitarian gender norms diffused, whereas traditional ones did not
  - The reason is the differences in costs and benefits of adoption of these norms

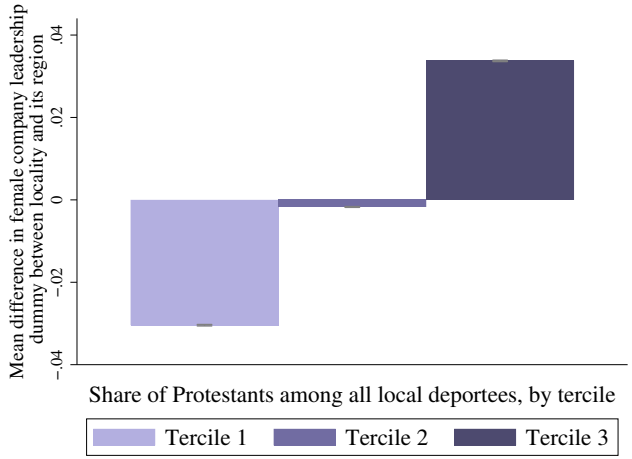
Illustration of the main result

Gender-equality outcomes, by tercile of the locality's share of Protestant deportees among all deportees: mean difference between locality and its region

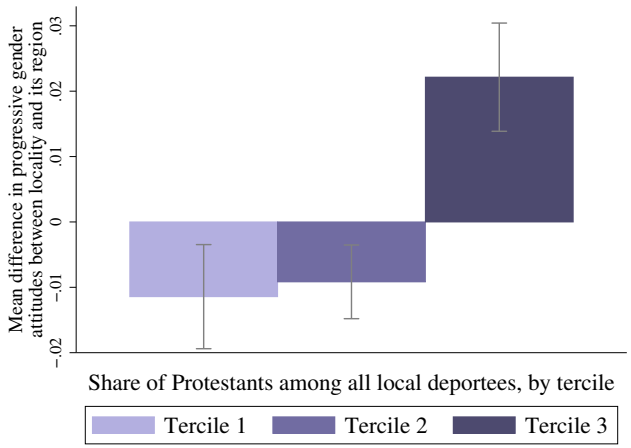
(a) FLFP



(b) Female company leadership



(c) Gender-equality attitudes



Share of Protestants among all local deportees, by tercile

Tercile 1 Tercile 2 Tercile 3

We contribute to the literatures on:

1. Cultural transmission
   - Richerson & Boyd 2006; Bisin and Verdier 2010; Clingingsmith et al. 2009; Tuccio & Wahba 2018; Giuliano and Tabellini, 2020
2. Social contact, on co-existence of ethnic and racial groups
   - Boisjoly, et al. 2006; Vanden Eynde, 2015; Carrell, et al. 2015; Finseraas & Kotsadam 2017; Scacco & Warren 2018; Burns, et al. 2019; Rao 2019
3. Determinants of gender norms
   - Surveys: Goldin 1990, Giuliano 2017, 2022
   - Including peer effects in gender norms, e.g., Schmitz & Weinhardt 2022; Boelmann, et al. 2020
4. Effects of Stalin's punitive policies
   - Toews & Vezina 2022; Ciravegna, et al. 2016; Kapelko & Markevich 2014; Becker et al., 2020

Roadmap

1. Background
2. Data
3. Empirical approach and identification assumptions
4. Establish persistent effect:
   - no pre-deportation differences in deportation localities (✓)
   - document long-run effects post-deportations (✓)
5. Vertical transmission cannot explain the persistence
6. Mechanisms
   - Deportees changed the economic or educational environment (−)
   - Selective migration (−)
   - Horizontal cultural transmission (✓)

Stalin's ethnic deportations

- 2M+ people were deported from the Western parts of the USSR to Siberia and Central Asia during WWII
  - Under suspicion that representatives of their ethnic group could collaborate with the Nazis against the Soviets
- The main four groups of ethnic deportees:
  - Germans (over 1M deported)
  - Chechens (over 450K deported)
  - Crimean Tatars (185K deported)
  - Meskhetian Turks (over 75K deported)
- Deportations of these groups were indiscriminate: men, women, and children were deported

▸ All deported ethnicities

Chechen deportees on the road to their destination

Volga German deportees at work in Siberia

Conditions of ethnic deportations

- Unlike Gulag prisoners, deportees were not confined to camps and were free to interact with the local population
  - Deportees and natives lived and worked in close proximity
  - Deportees had to find accommodation among the locals if their numbers were not overwhelming
  - Their children went to the same schools as locals
- Deportees were allowed to do only manual labor irrespective of their skills
- They were not allowed to organize schools in their own languages, instead their children got local-language instruction

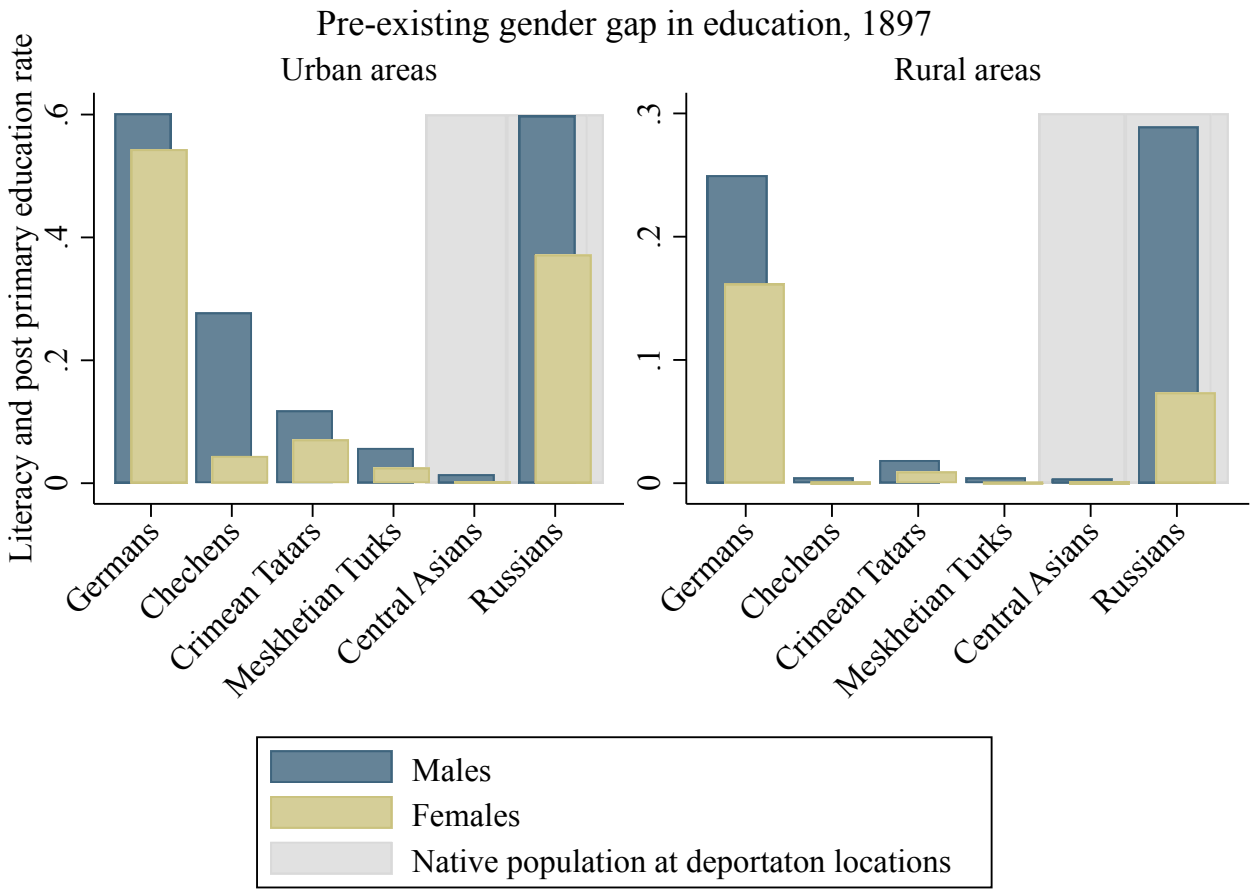
▸ Timing of deportations

Gender norms of deportees

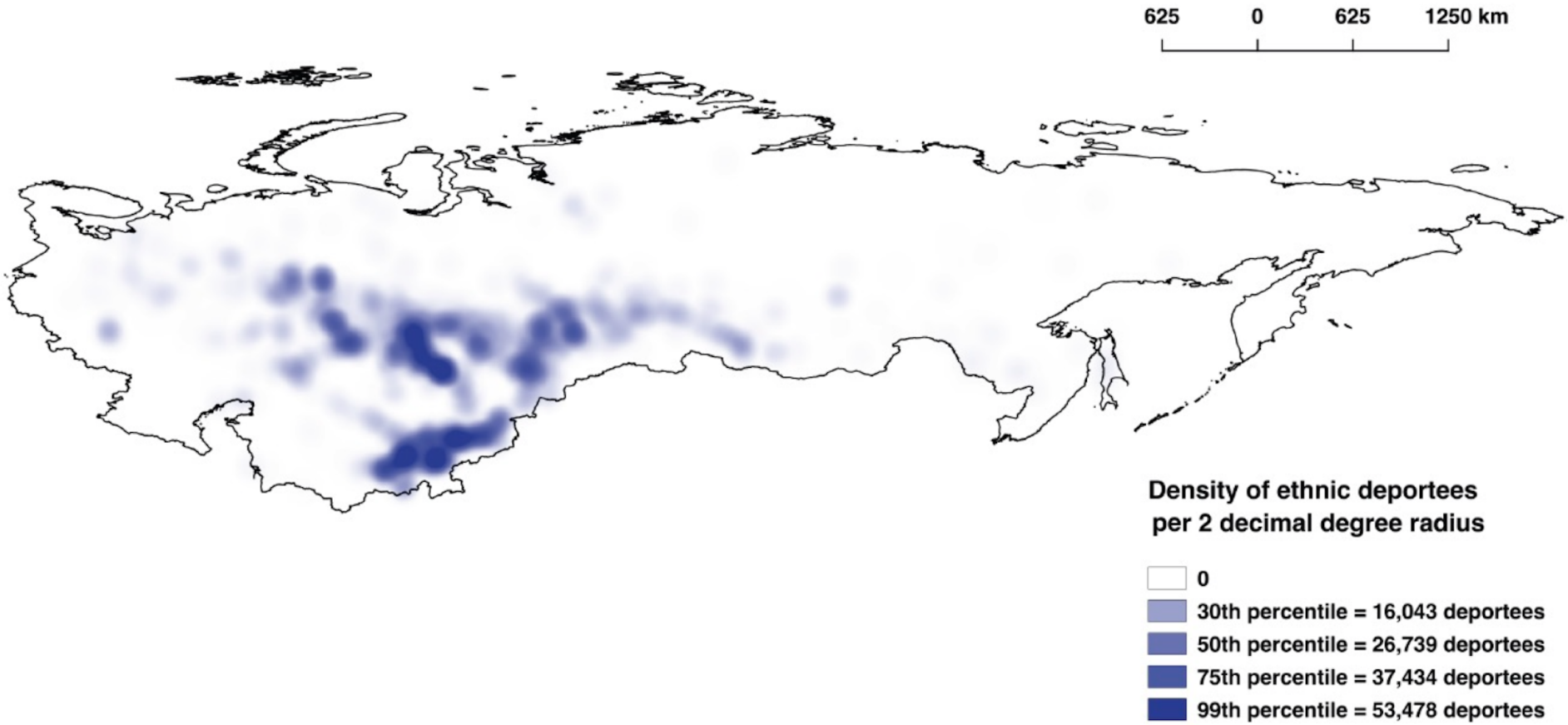
Deportee groups differed along many dimensions, including religion, education, and gender norms
We focus on gender norms, which we proxy with traditional religion of deportees

- Abundant anthropological evidence on ranking of how egalitarian gender norms were:
  1. Protestant deportees
     ...
  2. Russians (local majority in Siberia)
     ...
     ...
     ...
  3. Muslim deportees
  4. Central Asians (local majority in Central Asia)
- Equality for men and women was part of Soviet ideology

1897 evidence



Size of ethnic deportations at destination



The intensity of color indicates the density of ethnic deportees per 2-decimal-degree-radius circle.

▸ Exact destination locations of all deportees

Destinations

The quotas of deportees at the regional level were set by Moscow

- They may have considered the culture of deportees and locals
- We focus on within-region variation

Within regions, destinations were determined solely by the local needs for manual labor predetermined by vacancies form the plan

1. Upon arrival to the regional capital, deportees were assigned jobs in local state firms with blue-collar vacancies
2. As the local population was fairly homogeneous within regions, natives in different localities had similar preferences with regard to accepting different deportee groups

As a result, the choice of destination localities was orthogonal to the skills, ethnic identity, and culture of deportees

- The number of deportees were not random, unlike their group composition
- Balancing tests confirm this historical narrative

Data sources

Focus on localities that were deportation destinations

1. Ethnic deportations
   - Data on the exact destinations and size of deportees by ethnicity (from NKVD deportation censuses of 1951 and 1946, source: Russian National Archives, GARF)
2. Contemporary outcomes in deportation locations
   - 10% of Russian Census 2010: 2.8 million working-age adults
   - Orbis BvD Companies: 2.3 million firms, 4.5 million company directors
   - Life in Transition survey data 2016: 3 thousand respondents
3. Historical and geographical controls
   - 1897 and 1939 population characteristics from Censuses
   - Old and new capitals, railroads, ruggedness, climate, soil suitability, water etc.
   - Destinations of evacuated enterprises in 1941, Gulag locations

Econometric specifications: x-section of destinations

The effect of the numbers of Protestant and Muslim deportees:

$$Y_i = \beta_1 \log(1 + Protestant\_Deportees_{l_i}) + \beta_2 \log(1 + Muslim\_Deportees_{l_i}) +$$
$$+\sigma \log(Population\_1939_{l_i}) + \gamma' \mathbf{X_{l_i}} + \delta' \mathbf{C_i} + \mu_{r_{l_i}} + \epsilon_i$$

The effect of the share of Protestant deportees:

$$Y_i = \alpha_1 Protestant\_Deportee\_Share_{l_i} +$$
$$+\sigma \log(Population\_1939_{l_i}) + \gamma \log(Deportees_{l_i}) + \gamma' \mathbf{X_{l_i}} + \delta' \mathbf{C_i} + \mu_{r_{l_i}} + \epsilon_i.$$

- i indexes individuals or firms located in locality l.
- μ – subnational region FE;
- $\mathbf{X}$ and $\mathbf{C}$ – locality/respondent-specific controls; locality controls include non-ethnic deportees
- SEs clustered by district or ccorrected for spatial correlation within a 150km radius (Conley 1999)

▸ Residual variation in the data

Main identification assumption

- We focus on residual group composition of deportees, conditional on region FEs and the size of an ethnic deportation:
- Assumption: the identity of the deportees was orthogonal to any observed and unobserved determinants of gender norms of local population
  - Testable only as far as observables go...

Was deportee group composition at destinations correlated with pre-existing gender norms or other variables that could affect gender norms in the long run?

1897 Female LFP and literacy prior to deportations

Municipality-level data, 1897 Russian Empire Census

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. var., both panels:	FLFP		Urban FLFP		Rural FLFP		Female literacy	
Panel A. The effect of the numbers of Protestant and Muslim deportees								
log(Protestant deportees + 1)	0.0002	-0.0001	-0.0002	-0.0005	-0.0002	-0.0004	0.0009	0.0007
	(0.0007)	(0.0006)	(0.0013)	(0.0014)	(0.0005)	(0.0005)	(0.0007)	(0.0006)
log(Muslim deportees + 1)	-0.0010	-0.0016	-0.0011	-0.0020	0.0006	0.0002	0.0011	0.0011
	(0.0017)	(0.0012)	(0.0029)	(0.0023)	(0.0005)	(0.0004)	(0.0009)	(0.0007)
R-squared	0.556	0.644	0.609	0.647	0.674	0.726	0.635	0.683
p-value: β(Prot.) = β(Musl.)	0.561	0.318	0.791	0.599	0.305	0.341	0.857	0.707
Panel B. The effect of the share of Protestant deportees								
Share of Protestant deportees	-0.0037	0.0007	-0.0086	-0.0026	-0.0072	-0.0037	-0.0090	-0.0078
	(0.0106)	(0.0084)	(0.0171)	(0.0160)	(0.0055)	(0.0040)	(0.0079)	(0.0063)
R-squared	0.555	0.625	0.608	0.640	0.675	0.710	0.635	0.675
Observations	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042
Mean of dependent var.	0.0717	0.0717	0.208	0.208	0.0573	0.0573	0.0544	0.0544
Geographic Controls		✓		✓		✓		✓

Balance in other potential covariates

- We test whether pre-existing local characteristics predict group composition of deportees conditional on their number
  - Geographic and climate characteristics,
    WWII-time evaluations,
    proximity to Gulag,
    proximity to large cities
    ▸ Table Balance: Geo, Climate, Evaculations
  - 1939 Census: Population size and ethnic composition
    ▸ Table Balance: 1939 Census
  - 1897 Census: Population density, religious composition, employment-by-sector composition, literacy, urbanization
    ▸ Table Balance: 1897 Census

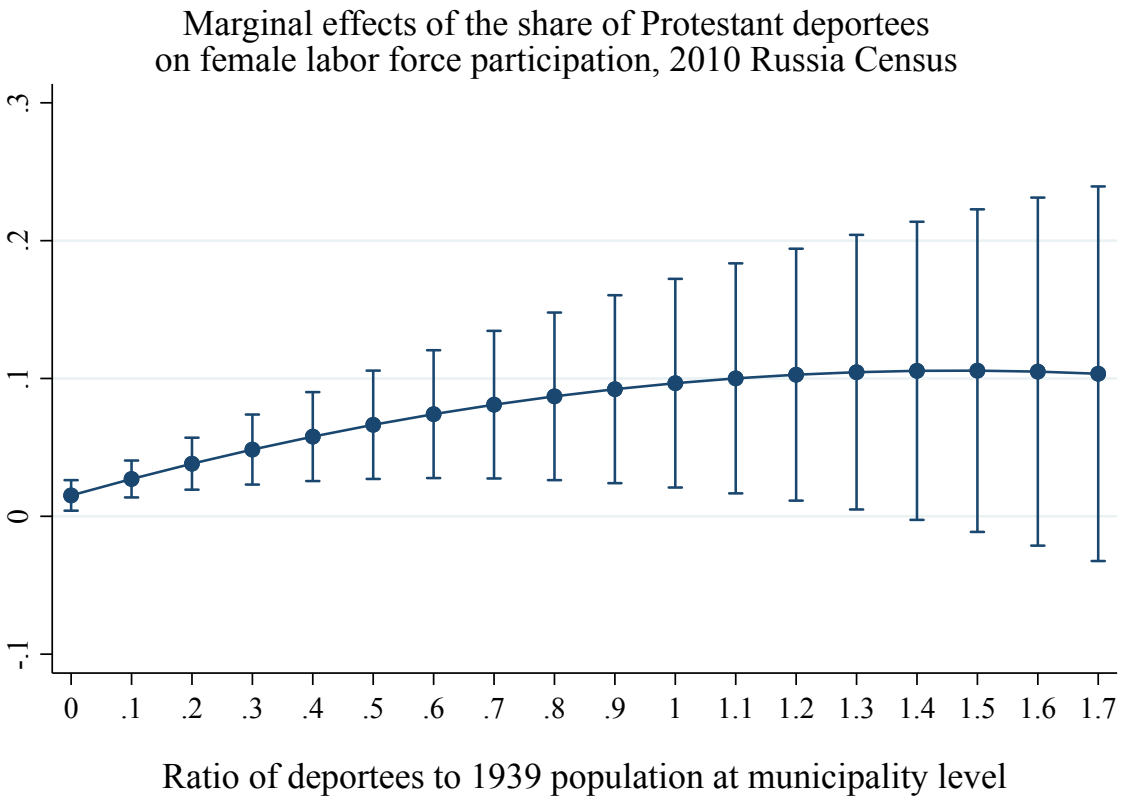
Is deportee group composition at destinations predicts contemporary gender-equality outcomes, i.e., is there long-term persistence?

Female and Male LFP, 10% of 2010 Russia Census

▸ Robustness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dep. var., both panels:	Labor force participation, females				Labor force participation, males		
Panel A. The effect of the numbers of Protestant and Muslim deportees							
log(Protestant deportees + 1)	0.0033**	0.0030**	0.0031**	0.0029**	0.0001	0.0006	0.0004
	(0.0015)	(0.0015)	(0.0015)	(0.0012)	(0.0013)	(0.0012)	(0.0012)
log(Muslim deportees + 1)	-0.0011	-0.0014	-0.0014	-0.0008	-0.0013	-0.0011	-0.0008
	(0.0014)	(0.0012)	(0.0012)	(0.0007)	(0.0013)	(0.0011)	(0.0010)
Municipality-level Male LFP				0.6645***			
				(0.0354)			
R-squared	0.133	0.153	0.153	0.154	0.0881	0.132	0.132
p-value: β(Prot.) = β(Musl.)	0.024**	0.017**	0.001**	0.002***	0.438	0.317	0.436
Panel B. The effect of the share of Protestant deportees							
Share of Protestant deportees	0.0222**	0.0229**	0.0246***	0.0154***	0.0145	0.0134	0.0126
	(0.0101)	(0.0093)	(0.0093)	(0.0057)	(0.0089)	(0.0086)	(0.0086)
Municipality-level Male LFP				0.6571***			
				(0.0355)			
R-squared	0.133	0.153	0.154	0.154	0.0881	0.132	0.132
Oster's delta	2.75	3.10	1.69	1.422	–	–	–
Observations	1,496,681	1,454,153	1,454,153	1,454,153	1,326,893	1,290,131	1,290,131
Mean of dependent var.	0.741	0.741	0.741	0.741	0.843	0.843	0.843
Region FE, deport. contr., age	✓	✓	✓	✓	✓	✓	✓
1939 pop, family, mun. controls		✓	✓	✓		✓	✓
Baseline geographic controls			✓	✓			✓
Extended geo, FLFP in 1897				✓			✓

Heterogeneity: deportees relative to the local population



$$FLFP = \underset{[0.006]}{0.015} \times Protestant\_Deportee\_Share +$$

$$+ \underset{[0.041]}{0.124} \times Protestant\_Deportee\_Share \times \frac{Deportees}{Population_{1939}} +$$

$$- \underset{[0.017]}{0.042} \times Protestant\_Deportee\_Share \times \left(\frac{Deportees}{Population_{1939}}\right)^2 + \ldots$$

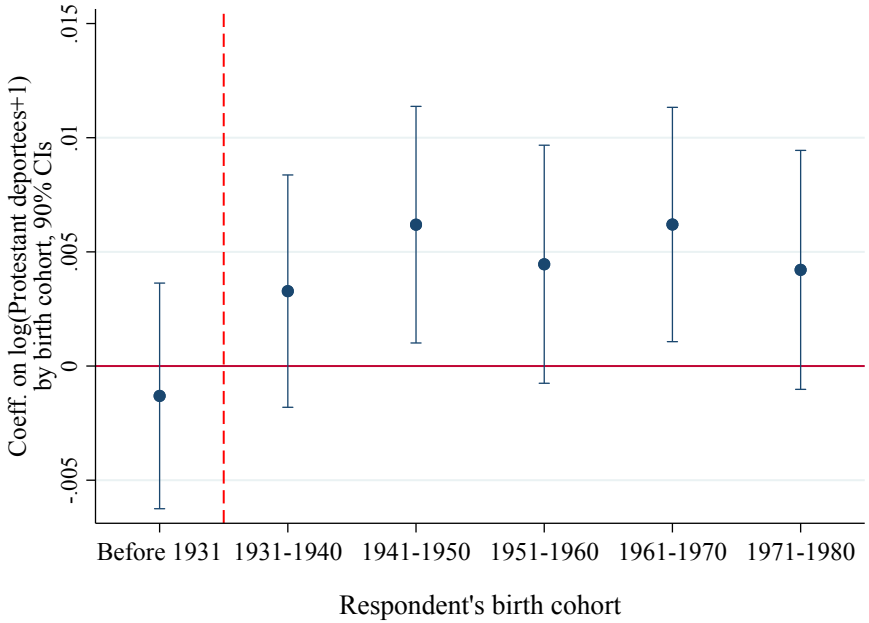
Female leadership in firms, all deportation destinations

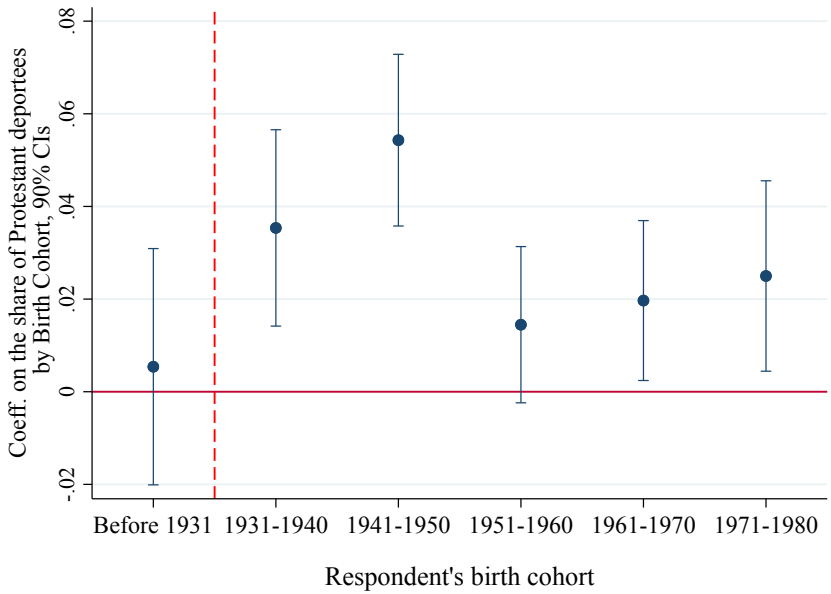
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable, both panels:	Female director dummy			Share of female directors		
Sample, firms:	All	Small	Service sector	All	Small	Service sector
Panel A. The effect of the numbers of Protestant and Muslim deportees						
log(Protestant deportees + 1)	0.0035***	0.0026***	0.0041***	0.0022***	0.0022**	0.0022*
	(0.0009)	(0.0010)	(0.0012)	(0.0008)	(0.0010)	(0.0012)
log(Muslim deportees + 1)	-0.0005	-0.0010	0.0015	-0.0010	-0.0008	0.0005
	(0.0010)	(0.0011)	(0.0015)	(0.0009)	(0.0010)	(0.0014)
R-squared	0.094	0.098	0.060	0.058	0.056	0.025
p-value: β(Prot.) = β(Musl.)	0.007***	0.027**	0.218	0.017**	0.062**	0.409
Panel B. The effect of the share of Protestant deportees						
Share of Protestant deportees	0.0288***	0.0206**	0.0382***	0.0234***	0.0207**	0.0300**
	(0.0097)	(0.0103)	(0.0124)	(0.0080)	(0.0095)	(0.0119)
R-squared	0.094	0.098	0.060	0.058	0.056	0.025
Oster's delta	0.238	0.154	0.368	0.302	0.239	0.499
Observations	1,271,589	1,103,561	356,854	1,271,589	1,103,561	356,854
Mean of dependent var.	0.298	0.295	0.394	0.259	0.259	0.347
Region + Ind FE, all baseline controls	✓	✓	✓	✓	✓	✓

Additional outcomes: Russia 2010 Census

In localities with larger presence of Protestant rather than Muslim deportees: ▸ Table: Fertility and Educational Attainment

- Women, but not men, below 30 are less likely to have a child
- Both men and women are more likely to attain college and post-gradate degrees
  - But not in cohorts that completed compulsory schooling before WWII (i.e., before deportees)





Can it all be explained by vertical transmission? (No)

Vast majority of deportees had left before the long-term outcomes are measured

- Chechens left in 1960s, as a result of Khrushchev Thaw
- Germans and others in 1990s, as a result of the dissolution of the Soviet Union

But some (few) deportee descendants stayed...
Is there an effect on nondeportee local population?

Challenge

- Individual-level Census data on ethnicity are unavailable
  - Use shares of deportee groups at the regional level at 2010 and historical shares at municipality level
  - Predict the number of deportee groups today at municipality level, assuming persistence
  - Make the most radical assumption in favor of the vertical transmission of cultural norms:
    - that all female descendants of Protestant deportees work and all female descendants of Muslim deportees do not
  - Then, eliminate from the sample observations that meet the criteria for being descendants of deportees
    - 38,871 out of 1,496,681 working-age women in deportation destinations (2.6%)

Lower bound of the effect on FLFP of nondeportees

Assume: female descendants of Prot. deport. work and of Musl. deport. do not work

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable, both panels:	Labor force participation, Female, age < 60					
Assumption on Muslim and Protestant deportee descendants' distribution across municipalities within regions:	Proportional to deportee distribution across municipalities			In municipality with the largest number of deportees		
Panel A. The effect of the numbers of Protestant and Muslim deportees						
log(Protestant deportees + 1)	0.0029*	0.0027*	0.0024**	0.0031**	0.0029*	0.0027**
	(0.0016)	(0.0015)	(0.0012)	(0.0016)	(0.0016)	(0.0013)
log(Muslim deportees + 1)	-0.0011	-0.0013	-0.0006	-0.0007	-0.0009	-0.0003
	(0.0014)	(0.0012)	(0.0007)	(0.0014)	(0.0013)	(0.0007)
R-squared	0.114	0.135	0.136	0.114	0.135	0.136
p-value: β(Prot.) = β(Musl.)	0.050**	0.037**	0.016**	0.070*	0.047**	0.022**
Panel B. The effect of the share of Protestant deportees						
Share of Protestant deportees	0.0237**	0.0256***	0.0157***	0.0203*	0.0231**	0.0129**
	(0.0107)	(0.0098)	(0.0060)	(0.0111)	(0.0101)	(0.0063)
R-squared	0.114	0.135	0.136	0.114	0.135	0.136
Oster's delta	2.705	6.076	1.982	1.824	4.381	1.428
Observations	1,457,810	1,416,362	1,416,362	1,458,164	1,416,609	1,416,609
Mean of dependent var.	0.750	0.750	0.750	0.750	0.750	0.750
Region FE, deport. controls, age, mun. size	✓	✓	✓	✓	✓	✓
1939 pop, family type & size, baseline controls		✓	✓		✓	✓
Extended geographic controls, FLFP in 1897			✓			✓

Orbis firms' data

- Firm's data contain full names of company directors
- "Memorial" foundation collected lists of names of ethnic deportees
  - Using these data, we predict ethnicity of directors
    - 63,703 out of 4,464,402 directors are from deportee ethnicities (1.4%)
  - Calculate the share of females among directors with nondeportee ethnicities

Female leadership among nondeportee groups

Use list of names of German and Chechen deportees from Memorial to determine the ethnicity of directors, focus only on directors of non-deportee ethnicities

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable, both panels:	Female director dummy			Share of female directors		
Sample, directors:	Nondeported ethnicities only					
Sample, firms:	All	Small	Service sector	All	Small	Service sector
Panel A. The effect of the numbers of Protestant and Muslim deportees						
log(Protestant deportees + 1)	0.0035***	0.0026***	0.0043***	0.0023**	0.0023**	0.0024**
	(0.0009)	(0.0010)	(0.0012)	(0.0008)	(0.0010)	(0.0012)
log(Muslim deportees + 1)	-0.0004	-0.0009	0.0016	-0.0009	-0.0007	0.0007
	(0.0010)	(0.0011)	(0.0015)	(0.0009)	(0.0010)	(0.0014)
R-squared	0.094	0.099	0.061	0.058	0.056	0.025
p-value: β(Prot.) = β(Musl.)	0.009***	0.032**	0.218	0.020**	0.073**	0.415
Panel B. The effect of the share of Protestant deportees						
Share of Protestant deportees	0.0283***	0.0203**	0.0373***	0.0233***	0.0206**	0.0295**
	(0.0097)	(0.0103)	(0.0124)	(0.0079)	(0.0095)	(0.0118)
R-squared	0.0942	0.0986	0.0605	0.0585	0.0564	0.0254
Oster's delta	0.256	0.162	0.386	0.334	0.259	0.541
Observations	1,249,664	1,084,032	351,002	1,249,664	1,084,032	351,002
Mean of dependent var.	0.298	0.295	0.394	0.260	0.259	0.348
SD of dependent var.	0.457	0.456	0.489	0.419	0.420	0.454
Region FE, deportation controls	✓	✓	✓	✓	✓	✓
Firm & geo controls, industry FE	✓	✓	✓	✓	✓	✓

LiTS contains ethnicity: focus on titular nationals

Attitudes toward the role of women, fertility, female entrepreneurship, and education

	(1)	(2)	(3)	(4)
Dep. var., both panels:	Chose to disagree or strongly disagree with the statement:			1st Pr. 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	Pro-gender-equality attitudes, normalized b/w 0 and 1
Sample:	All respondents, both genders			
Panel A. The effect of the numbers of Protestant and Muslim deportees				
log(Protestant deportees + 1)	0.029***	0.019**	0.020**	0.023***
	(0.002)	(0.008)	(0.009)	(0.004)
log(Muslim deportees + 1)	-0.002	-0.008	-0.017	-0.009
	(0.008)	(0.008)	(0.011)	(0.008)
R-squared	0.169	0.107	0.135	0.164
p-value: β(Prot.) = β(Musl.)	0.000***	0.022**	0.022**	0.0001***
Panel B. The effect of the share of Protestant deportees				
Share of Protestant deportees	0.182***	0.147***	0.133	0.154***
	(0.028)	(0.049)	(0.083)	(0.040)
R-squared	0.167	0.112	0.138	0.166
Oster's delta	1.499	-1.579	2.031	46.528
Observations	2,913	2,904	2,870	2,822
Mean of dependent var.	0.152	0.182	0.213	0.181
Region FE and all baseline controls	✓	✓	✓	✓

What is the mechanism through which deportee group composition affects local nondeportee gender norms?

Horizontal between-group cultural transmission? (Yes)

- Predictions:

1. One should expect stronger diffusion of norms that are less costly and more beneficial
   - Gender-equality norms are both less costly because they are in line with the official ideology in the USSR and more beneficial as educating girls paid off even in the USSR
   - In addition, Germans may have appeared as better role models than Chechns
   - This explans why we see effects of exposure to Protestants and not to Muslims

2. Transmission should be higher for culturally closer groups
   - Use the fact that Germans were culturally closer to Russians than to Central Asians

Need to hold the environment constant

Compare the effects on Russian minority vs. on Central Asians in Central Asia

	(1)	(2)
Dependent variable, both panels:	1st principal component Pro-gender-equality attitudes	
Sample:	Central Asia, all respondents with known (nondeportee) ethnicities, LiTS	
Panel A. The effect of the numbers of Protestant and Muslim deportees		
log(Protestant deportees + 1)	0.021***	0.021***
	(0.003)	(0.003)
log(Muslim deportees + 1)	-0.010	-0.010
	(0.007)	(0.007)
log(Protestant deportees + 1) × Ethnic Russian respondent		0.015**
		(0.006)
log(Muslim deportees + 1) × Ethnic Russian respondent		0.001
		(0.010)
R-squared	0.167	0.168
Panel B. The effect of the share of Protestant deportees		
Share of Protestant deportees	0.120**	0.106***
	(0.047)	(0.041)
Share of Protestant deportees × Ethnic Russian respondent		0.167*
		(0.092)
R-squared	0.162	0.164
Observations	3,215	3,215
Mean of dependent var.	0.184	0.184
Region and year FE, controls	✓	✓

Deportees affecting economic development and sector composition? (Not enough)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Potential mechanism:	Economic development		Sector composition					
Dependent variable,	Nighttime light	Revenue per	Sector employment share:					
both panels:	density (ln)	worker (ln)	Agriculture	Construction	Industry	Public	Services	Trade
Panel A. The effect of the numbers of Protestant and Muslim deportees								
log(Protestant deportees + 1)	0.0317	-0.0131**	-0.0038	-0.0054***	-0.0028	0.0180***	0.0002	-0.0043*
	(0.0412)	(0.0061)	(0.0038)	(0.0018)	(0.0044)	(0.0038)	(0.0029)	(0.0024)
log(Muslim deportees + 1)	0.0665	-0.0104	-0.0098***	-0.0013	0.0021	0.0192***	-0.0031	-0.0075***
	(0.0441)	(0.0074)	(0.0037)	(0.0015)	(0.0049)	(0.0045)	(0.0032)	(0.0024)
R-squared	0.405	0.179	0.426	0.268	0.197	0.471	0.216	0.246
p-value: β(Prot.) = β(Musl.)	0.591	0.820	0.346	0.160	0.514	0.862	0.487	0.426
Panel B. The effect of the share of Protestant deportees								
Share of Protestant deportees	-0.4147	0.1227	-0.0245	-0.0234	-0.0101	-0.0128	0.0603*	0.0371*
	(0.3825)	(0.0809)	(0.0410)	(0.0167)	(0.0544)	(0.0511)	(0.0357)	(0.0216)
R-squared	0.404	0.179	0.421	0.254	0.192	0.383	0.223	0.238
Oster's delta	1.448	-0.424	0.252	0.293	-0.464	-0.196	0.305	0.480
Observations	1,054	374,043	814	766	811	782	817	814
Mean of dependent var.	-4.716	3.139	0.215	0.0561	0.251	0.139	0.239	0.116
Region FE, baseline controls	✓	✓	✓	✓	✓	✓	✓	✓
Unit of analysis	Municipalities	Orbis firms	Municipalities	Municipalities	Municipalities	Municipalities	Municipalities	Municipalities

Educational inputs? (Not enough)

	(1)	(2)	(3)	(4)	(5)
Dependent variable, both panels:	Total budget expenditure per capita	Share of expenditures on education	Nb of schools per 100 pupils	Preschool attendance rate	Share of preschools with degraded buildings
Panel A. The effect of the numbers of Protestant and Muslim deportees					
log(Protestant deportees + 1)	-1.3274**	0.2126	0.0007	0.0053***	-0.5242
	(0.5227)	(0.1477)	(0.0054)	(0.0018)	(0.5917)
log(Muslim deportees + 1)	-1.1046**	0.0048	-0.0137**	-0.0001	0.5459
	(0.5412)	(0.1327)	(0.0058)	(0.0021)	(0.5141)
R-squared	0.231	0.592	0.617	0.196	0.214
p-value: β(Prot.) = β(Musl.)	0.711	0.323	0.118	0.087*	0.223
Panel B. The effect of the share of Protestant deportees					
Share of Protestant deportees	-0.9658	1.7593	0.1482**	0.0182	-1.2954
	(3.9502)	(1.6127)	(0.0744)	(0.0226)	(5.2768)
R-squared	0.231	0.592	0.614	0.196	0.212
Oster's delta	-0.359	4.814	16.99	-3.086	-0.600
Unit of analysis	Municipalities × Years				
Years in sample	2006 to 2018	2006 to 2018	2006 to 2017	2009 to 2011	2012 to 2018
Observations	6,546	6,799	6,105	1,082	2,170
Mean of dependent var.	26.65	49.74	0.639	0.701	12.23
Region and year FE, baseline controls	✓	✓	✓	✓	✓

Selective in-migration of nondeportee population? (No)

Deportees could not move, but nondeportees could: Focus on respondents whose ancestors lived in the same region before WWII

	(1)	(2)	(3)
Sample:	Ancestors lived in the same place as respondent		
Dependent variable, both panels:	1st Principal Comp. Pro-gender-equality attitudes		Tried to start a business
Sample, gender:	Female	Male	Female
Panel A. The effect of the numbers of Protestant and Muslim deportees			
log(Protestant deportees + 1)	0.016*	0.015***	0.018*
	(0.008)	(0.003)	(0.010)
log(Muslim deportees + 1)	0.001	0.006	-0.011
	(0.013)	(0.010)	(0.013)
R-squared	0.212	0.253	0.0948
Panel B. The effect of the share of Protestant deportees			
Share of Protestant deportees	0.100	0.117***	0.137
	(0.096)	(0.043)	(0.090)
R-squared	0.216	0.247	0.0956
Observations	1,006	738	1,030
Mean of dependent var.	0.118	0.126	0.113
Region FE and Controls	✓	✓	✓

Selective outmigration of nondeportee population? (No)

Unit of analysis: ancestor of respondent, who lived in deportation region

	(1)	(2)
Sample:	Ancestors in deportation regions	
Dependent variable, both panels:	Family moved out	Gender attitudes
Panel A. The effect of the numbers of Protestant and Muslim deportees		
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)
R-squared	0.305	0.155
Panel B. The effect of the share of Protestant deportees		
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)
R-squared	0.303	0.154
Observations	9,277	8,661
Mean of dependent var.	0.388	0.210
Country of destination and of origin FEs	✓	✓

Robustness

Results are robust to:

- The choice of covariates
  - Provided that we control for region fixed effects and the size of deportations
  - Robustness Tables:
    - ▸ Controls in Orbis
    - ▸ Controls in Census
    - ▸ Controls in LiTS
- Alternative assumptions about variance-covariance matrix
  - Robustness Tables:
    - ▸ Clusters in Census and Orbis
    - ▸ Clusters in LiTS

Conclusions

- We document the horizontal cultural transmission of gender norms from Protestant deportees to the local population
  - These norms translate into behavior
  - The local population exogenously exposed to a deportee group with more equitable gender norms adopted pro-gender-equality attitudes and behavior through imitation and learning
- The big-picture lesson: cultural polarization in not inevitable even when there is no preset conditions for cooperation

Appendix

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	Meskhetian Turks
Protestants:	**52.7%**	**31.1%**	**19.5%**	**0.3%**	**0.7%**	**1%**	**0.1%**
Germans (97%)	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 and Ingush (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, by republic	1,131	774	190	97	55	12	3

Notes: "Chechen and Ingush" refers mostly to Chechen and some Ingush. No data on Koreans.

back

Summary statistics: 10% Russian Census

Sample:	10% of Census 2010 respondents			
	All ages		Age 17-60	
	Mean	SD	Mean	SD
Main outcomes:				
Labor force participation	0.5272	0.4993	0.7889	0.4081
Respondent has a child	0.3841	0.4864	0.5098	0.4999
Age at birth of first child	25.6707	5.3966	25.1729	5.0680
Completed higher education	0.1820	0.3859	0.2420	0.4283
Post-graduate education	0.0035	0.0594	0.0038	0.0618
Main explanatory variables and controls:				
Protestant deportees (ln)	6.4844	2.1542	6.4927	2.1511
Muslim deportees (ln)	2.1188	2.6738	2.1160	2.6711
Other ethnic deportees (ln)	6.9874	1.9129	6.9960	1.9095
Non ethnic deportees (ln)	3.7086	3.2212	3.7363	3.2198
All deportees (ln)	7.3746	1.7323	7.3867	1.7260
Share of Protestant deportees	0.6096	0.3358	0.6074	0.3359
Share of other ethnic deportees	0.8126	0.2780	0.8107	0.2789
Share of non-ethnic deportees	0.1874	0.2780	0.1893	0.2789
Ratio deportees to 1939 population	0.0523	0.1278	0.0533	0.1341
Other baseline controls:				
Female	0.5447	0.4980	0.5301	0.4991
Age	37	21	38	12
Population (ln)	12.4008	1.4890	12.4385	1.4764
Area of district (ln)	8.2268	1.2898	8.2389	1.3134
Married couple without children	0.1855	0.3887	0.1868	0.3898
Married couple without children under 18	0.1199	0.3248	0.1672	0.3732
Married couple with children under 18	0.3114	0.4631	0.2892	0.4534
Mother without children under 18	0.0705	0.2561	0.0889	0.2846
Mother with children under 18	0.0848	0.2786	0.0626	0.2422
Father without children under 18	0.0087	0.0928	0.0109	0.1040
Father with children under 18	0.0075	0.0863	0.0056	0.0746
Single person	0.2116	0.4085	0.1888	0.3913
Family size	2.5169	1.1341	2.5340	1.0756
Unemployment rate in district	0.0934	0.0170	0.0934	0.0170
Urban	0.4858	0.4998	0.4912	0.4999
Rural	0.5142	0.4998	0.5088	0.4999
Log of 1939 population	11.1613	1.1548	11.1636	1.1685
Male labor force participation	0.8552	0.0272	0.8549	0.0272
Distance to capital city (ln)	6.8743	0.5602	6.8787	0.5602
Precipitation (Dec-Feb) (ln)	3.2133	0.4601	3.2131	0.4595
Precipitation (June-August) (ln)	4.1956	0.2185	4.1950	0.2188
Extended set of controls:				
Distance to railroad (ln)	2.1822	1.2933	2.1789	1.2995
Distance to Gulag camps (ln)	3.5817	1.3471	3.5759	1.3597
Distance to water (ln)	2.5682	1.1635	2.5631	1.1641
Ruggedness (ln)	4.4530	0.1628	4.4531	0.1621
Temperature (June-August)	16.600	2.0190	16.5827	2.0522
Temperature (Dec-Feb)	-15.131	4.618	-15.172	4.654
Soil Suitability high inputs (ln)	1.1701	0.3917	1.1747	0.3938
Soil Suitability low inputs (ln)	1.3760	0.3686	1.3808	0.3701
Observations	4,416,144		2,823,574	

Summary statistics: Orbis sample

Sample:	Orbis firms in Russia and Central Asia in Russia and Central Asia	
	Mean	SD
Main outcomes:		
Female director dummy	0.2978	0.4573
Share of female directors	0.2591	0.4183
Operating revenue per worker (ln)	3.1395	1.8949
Main explanatory variables and controls:		
Protestant deportees (ln)	5.4050	2.9365
Muslim deportees (ln)	5.3200	3.4927
Other ethnic deportees (ln)	2.1234	2.7050
Non-ethnic deportees (ln)	1.3932	2.4543
All deportees (ln)	7.7961	1.3591
Share of Protestant deportees	0.3571	0.3540
Share of other ethnic deportees	0.0658	0.1800
Share of non-ethnic deportees	0.0804	0.2321
Other baseline controls:		
Number of directors	1.2826	0.9856
Number of firms in district	41998	47010
Firm size: Small	0.8679	0.3386
Firm size: Medium	0.0606	0.2386
Firm size: Large	0.0049	0.0700
Firm size: Very large	0.0011	0.0339
Firm size: Missing	0.0655	0.2473
Agriculture sector	0.0817	0.2739
Construction sector	0.1166	0.3210
Industry sector	0.0837	0.2770
Public sector	0.1062	0.3081
Services sector	0.3483	0.4764
Trade sector	0.2635	0.4405
Log of 1939 population	11.0967	0.9863
Distance to capital city (ln)	4.8410	2.2359
Precipitation (June-August) (ln)	3.3821	1.0273
Precipitation (Dec-Feb) (ln)	3.3039	0.4555
Extended set of controls:		
Distance to railroad (ln)	1.5180	1.1790
Distance to Gulag camps (ln)	3.1580	1.8481
Distance to water (ln)	2.2672	0.9524
Ruggedness (ln)	4.4822	0.1710
Average summer temperature	20.3976	4.0161
Average winter temperature	-8.6955	7.6982
Soil Suitability high inputs (ln)	1.1155	0.3711
Soil Suitability low inputs (ln)	1.4033	0.3065
Observations	1,271,589	

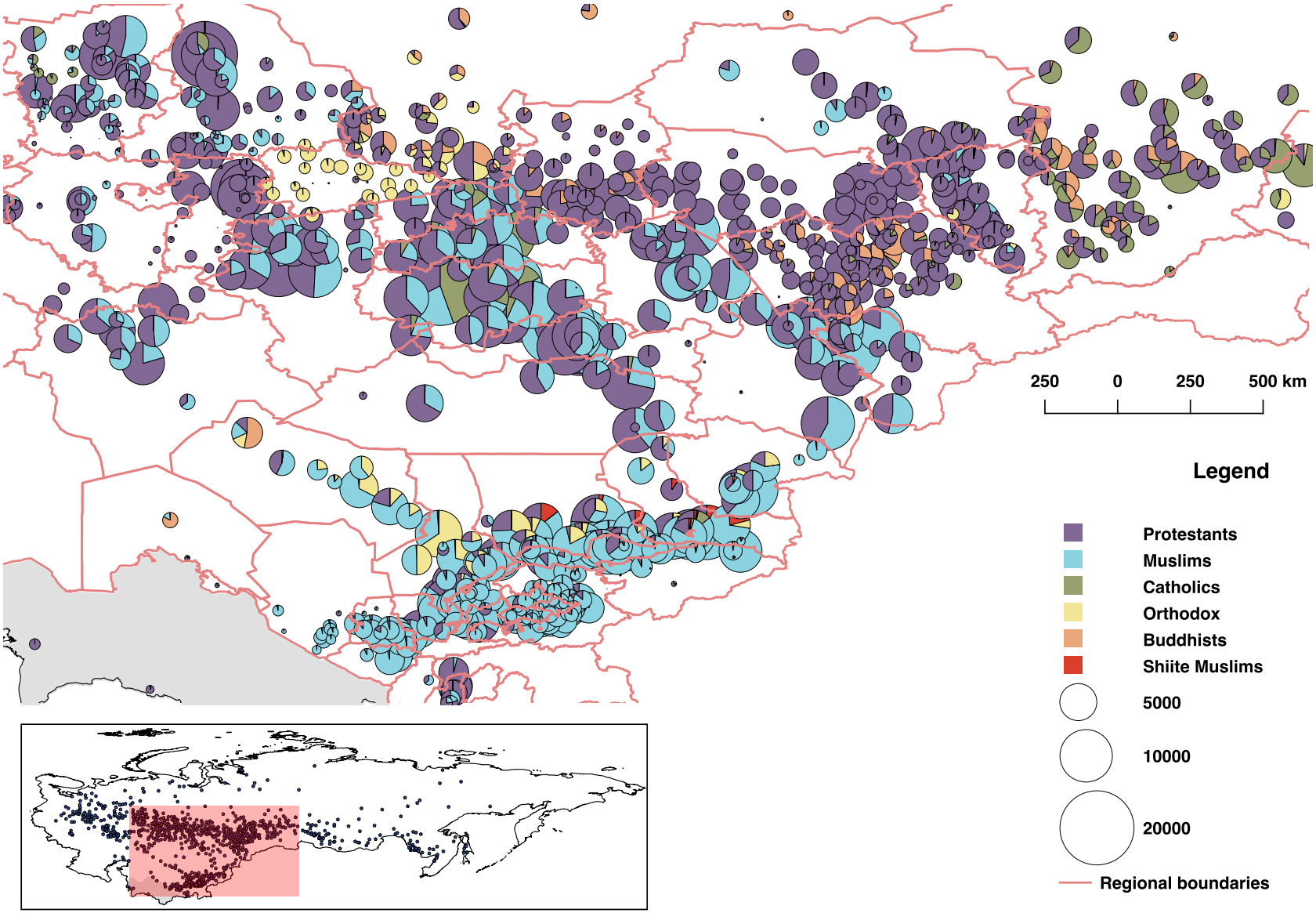
Summary statistics, LiTs Sample

Sample:	Life in Transition Survey respondents	
	Mean	SD
Main outcomes:		
Disagree: A woman should do most of the household chores	0.1521	0.3592
Disagree: It is better for everyone if the man earns the money	0.1801	0.3844
Disagree: Men make better political leaders	0.2159	0.4115
Pro-gender-equality attitudes 1st PC	0.1818	0.2710
Tried to start a business	0.1497	0.3568
Respondent has a child	0.5355	0.4988
Mother completed tertiary education	0.1388	0.3458
Father completed tertiary education	0.1923	0.3942
Main explanatory variables and controls:		
Protestant Deportees (ln)	5.4884	2.7213
Muslim Deportees (ln)	6.8885	2.7396
Other ethnic deportees (ln)	1.7463	2.5045
Total non-ethnic deportations (ln)	1.1987	2.3641
All deportations (ln)	8.1881	1.4516
Share of Protestant deportees	0.3059	0.3442
Share of other ethnic deportees	0.0346	0.1166
Share of non-ethnic deportees	0.0363	0.1282
Other baseline controls:		
Age of respondent	42.8194	14.9012
Highest education completed	4.8012	1.1447
Household net monthly income (ln)	11.0423	2.6209
Mother's educational level	4.0632	1.3584
Father's educational level	4.3243	1.4113
Predicted mother's age	69.4435	15.8819
Log of 1939 population	11.4811	1.7973
Capital (old or new)	0.1243	0.3299
Urban	0.4511	0.4977
Travel distance to capital city (ln)	5.0388	1.6396
Precipitation (June-August) (ln)	2.5127	1.0984
Precipitation (Dec-Feb) (ln)	3.4148	0.4366
Extended set of controls:		
Distance to railroad (ln)	1.8243	1.1459
Distance to Gulag camps (ln)	4.2487	1.4344
Temperature (June-August)	22.4381	4.3601
Temperature (Dec-Feb)	-3.8851	6.6354
Soil Suitability low inputs (ln)	1.4267	0.2350
Distance to water (ln)	2.1701	0.8998
Ruggedness (ln)	4.3527	0.2715
Soil Suitability high inputs (ln)	1.2133	0.3309
Evacuated enterprise dummy	0.4442	0.4970
Share of Kazakhs in 1939	0.4260	1.7995
Share of Karakalpaki in 1939	0.0009	0.0096
Share employed in industry in 1897	0.1741	0.1172
Observations	2,913	

Summary statistics: municipalities

Sample:	Russian municipalities	
	Mean	SD
Main outcomes:		
Per capita municipal budget expenditure	26.75	57.52
Share of expenditures on education	49.74	13.53
Number of schools per 100 people	0.0740	0.0460
Number of schools per 100 pupils	0.6411	0.3483
Preschool attendance rate	0.7033	0.1028
Share of degraded preschool buildings, percentage	12.397	20.252
Main explanatory variables and controls:		
Protestant Deportees (ln)	5.7259	2.2161
Muslim Deportees (ln)	1.1510	2.1522
Other ethnic deportees (ln)	2.5446	2.9791
Total non-ethnic deportations (ln)	3.0091	3.0371
All deportations (ln)	6.7324	1.7773
Share of Protestant deportees	0.6221	0.3638
Share of other ethnic deportees	0.1433	0.2511
Share of non-ethnic deportees	0.1771	0.2760
Other baseline controls:		
Log of 1939 population	13.1505	5.3756
Log of Distance to capital city	15.7309	0.0787
Log of Average winter precipitation	3.1605	0.4732
Log of Average summer precipitation	4.2083	0.2149
Log of population	10.2798	1.0175
Urban municipality	0.1794	0.3837
Observations	6,799	

Ethnic deportations location, their size and composition



Variance decomposition: 1939 population

Variable in 1939 Census	Type	Mean	Std. Dev.	Min	Max
Share of Russians	overall	0.6154	0.3348	0.0082	0.9960
	between regions		0.3085	0.0409	0.9813
	within region		0.1575	-0.1076	1.2645
Share of Uzbeks	overall	0.0710	0.2090	0.0000	0.9519
	between regions		0.2361	0.0000	0.7888
	within region		0.0672	-0.5177	0.5780
Share of Kazakhs	overall	0.0811	0.1842	0.0000	0.8636
	between regions		0.2052	0.0000	0.8240
	within region		0.0819	-0.3471	0.6410
Share of Kyrghiz	overall	0.0288	0.1299	0.0000	0.9763
	between regions		0.1033	0.0000	0.5879
	within region		0.0598	-0.5004	0.5206
Share of Tartars	overall	0.0267	0.0651	0.0000	0.6924
	between regions		0.0685	0.0000	0.5442
	within region		0.0426	-0.2179	0.4516
Share of Turkmen	overall	0.0008	0.0105	0.0000	0.2743
	between regions		0.0199	0.0000	0.1326
	within region		0.0077	-0.0425	0.2317
Share of Tajiks	overall	0.0095	0.0541	0.0000	0.7014
	between regions		0.0678	0.0000	0.4693
	within region		0.0360	-0.4230	0.4783
Share of Karakalpaki	overall	0.0007	0.0126	0.0000	0.3800
	between regions		0.0267	0.0000	0.2304
	within region		0.0075	-0.1489	0.1503
Share of Udmurts	overall	0.0053	0.0482	0.0000	0.7347
	between regions		0.0499	0.0000	0.4322
	within region		0.0208	-0.4149	0.3079
Share of Chuvashs	overall	0.0130	0.0862	0.0000	0.9698
	between regions		0.0721	0.0000	0.6219
	within region		0.0419	-0.6072	0.3609
Share of Koreans	overall	0.0036	0.0190	0.0000	0.2819
	between regions		0.0212	0.0000	0.1417
	within region		0.0145	-0.1366	0.2437

Balance: deportation destinations, levels

	(1)	(2)	(3)	(4)	(5)	(6)
Main explanatory variable:	Protestant deportees (ln)		Muslim deportees (ln)			β(Prot) = β(Musl)
Sample:	Municipalities with deportations					
PLACEBO OUTCOME VAR:	COEF	SE	COEF	SE	N	P-value
Panel A. Geographic characteristics and evacuated enterprises						
Distance to water (ln)	-0.0002	(0.0217)	-0.0267	(0.0239)	1,074	0.459
Distance to railroad (ln)	-0.0992***	(0.0270)	-0.0566**	(0.0264)	1,074	0.302
Distance to Gulag (ln)	-0.0705***	(0.0203)	-0.0504***	(0.0176)	1,074	0.498
Travel distance to capital city (ln)	-0.0034	(0.0070)	-0.0217***	(0.0066)	1,068	0.0773*
Ruggedness	-0.2498	(0.2192)	0.0583	(0.1804)	1,074	0.328
Soil Suitability low inputs	-0.0344	(0.0238)	0.0378*	(0.0203)	1,074	0.0331**
Soil Suitability high inputs	-0.0217	(0.0279)	0.0233	(0.0202)	1,074	0.223
Precipitation (June-August) (ln)	0.0018	(0.0037)	0.0051	(0.0036)	1,074	0.544
Precipitation (Dec-Feb) (ln)	0.0008	(0.0041)	0.0100***	(0.0038)	1,074	0.120
Temperature (June-August)	-0.0565	(0.0377)	0.0029	(0.0352)	1,074	0.271
Temperature (Dec-Feb)	-0.0024	(0.0510)	0.0432	(0.0434)	1,074	0.530
Evacuated enterprise dummy	0.0200***	(0.0067)	0.0192***	(0.0069)	1,068	0.936
Panel B. Population characteristics, 1939 USSR						
Log of total population, 1939	0.05218***	(0.01334)	0.04420***	(0.01348)	1,068	0.686
Share of Chechens, 1939	0.00001	(0.00001)	-0.00000	(0.00000)	1,068	0.179
Share of Germans, 1939	0.00126***	(0.00038)	0.00081**	(0.00036)	1,068	0.388
Share of Russians, 1939	0.00847***	(0.00312)	0.01013***	(0.00292)	1,068	0.702
Share of Uzbeks, 1939	-0.00196	(0.00174)	-0.00068	(0.00102)	1,068	0.553
Share of Turkmens, 1939	-0.00012	(0.00010)	0.00001	(0.00007)	1,068	0.238
Share of Tajiks, 1939	0.00038	(0.00040)	-0.00011	(0.00052)	1,068	0.456
Share of Kazakhs, 1939	-0.00301**	(0.00146)	-0.01290***	(0.00289)	1,068	0.001***
Share of Kirghiz, 1939	-0.00299*	(0.00154)	-0.00302**	(0.00153)	1,068	0.989
Share of Koreans, 1939	-0.00007	(0.00029)	0.00037*	(0.00019)	1,068	0.283
Share of Karakalpaki, 1939	-0.00022	(0.00016)	0.00007	(0.00008)	1,068	0.212
Share of Udmurts, 1939	0.00005	(0.00051)	0.00013	(0.00015)	1,068	0.890
Share of Tartars, 1939	0.00002	(0.00114)	-0.00077	(0.00096)	1,068	0.613
Share of Mariians, 1939	-0.00028*	(0.00016)	-0.00004	(0.00014)	1,068	0.342
Share of Chuvashs, 1939	-0.00077	(0.00097)	-0.00125	(0.00079)	1,068	0.586
Panel C. Population characteristics, 1897 Russian empire						
Population density (sq km), 1897 (ln)	-0.00520	(0.01524)	-0.02131*	(0.01289)	1,042	0.461
Share living in city, 1897	-0.00219	(0.00179)	-0.00633	(0.00432)	1,042	0.413
Share of Russians, 1897	0.00625	(0.00386)	-0.00576	(0.00524)	1,042	0.0666*
Share of Germans, 1897	-0.00012	(0.00020)	-0.00079*	(0.00046)	1,042	0.195
Labor force participation, 1897	0.00090	(0.00086)	-0.00273*	(0.00158)	1,042	0.0587*
Share employed in agriculture, 1897	-0.00180	(0.00360)	0.00977	(0.00710)	1,042	0.161
Share employed in industry, 1897	0.00188	(0.00219)	-0.00154	(0.00218)	1,042	0.224
Share employed in services, 1897	-0.00045	(0.00035)	-0.00069	(0.00071)	1,042	0.784
Share employed in white collar jobs, 1897	0.00002	(0.00016)	-0.00066	(0.00044)	1,042	0.184
Share literate, 1897	0.00068	(0.00092)	-0.00264	(0.00213)	1,042	0.184
Share of Muslims, 1897	0.00110	(0.00169)	0.00888**	(0.00446)	1,042	0.119
Share of Orthodox, 1897	-0.00178	(0.00125)	0.00061	(0.00093)	1,042	0.145
Share of Protestants, 1897	0.00007	(0.00025)	-0.00089*	(0.00050)	1,042	0.110
Share of Catholics, 1897	0.00011*	(0.00007)	-0.00022*	(0.00013)	1,042	0.0535
Share of Buddhists, 1897	-0.00069	(0.00049)	-0.00001	(0.00021)	1,042	0.274
Share of Jews, 1897	0.00010	(0.00008)	-0.00025*	(0.00014)	1,042	0.0525*

Balance: LiTS

	(1)	(2)	(3)
Main explanatory variable:	Share of Protestant deportees		
Sample:	PSUs with deportations from LiTS		
PLACEBO OUTCOME VAR:	COEF	SE	N
Panel A. Geographic characteristics and evacuated enterprises			
Distance to water (ln)	0.432	(0.267)	235
Distance to railroad (ln)	0.250	(0.342)	235
Distance to Gulag (ln)	0.005	(0.428)	235
Travel distance to capital city (ln)	-0.177	(0.372)	235
Ruggedness	1.403	(3.728)	235
Soil Suitability low inputs	-0.519*	(0.269)	235
Soil Suitability high inputs	-0.114	(0.310)	235
Precipitation (June-August) (ln)	-0.046	(0.132)	235
Precipitation (Dec-Feb) (ln)	0.002	(0.134)	235
Temperature (June-August)	-1.762*	(1.030)	235
Temperature (Dec-Feb)	-2.159**	(1.050)	235
Evacuated enterprise dummy	-0.263	(0.168)	235
Panel B. Population characteristics, 1939 USSR			
Log of 1939 population, 1939	-0.068	(0.651)	235
Share of Chechens, 1939	0.003	(0.003)	235
Share of Germans, 1939	0.001	(0.015)	235
Share of Russians, 1939	0.043	(0.180)	235
Share of Uzbeks	-0.038	(0.072)	235
Share of Turkmens, 1939	-0.001	(0.001)	235
Share of Tajiks, 1939	0.039	(0.033)	235
Share of Kazakhs, 1939	0.789	(0.638)	235
Share of Kirghiz, 1939	0.028	(0.156)	235
Share of Koreans, 1939	-0.007	(0.016)	235
Share of Karakalpaki, 1939	-0.001	(0.002)	235
Share of Udmurts, 1939	0.003	(0.003)	235
Share of Tartars, 1939	0.006	(0.010)	235
Share of Mariians, 1939	-0.000*	(0.000)	235
Share of Chuvashs, 1939	-0.005	(0.005)	235
Panel C. Population characteristics, 1897 Russian empire			
Population density (sq km) 1897 (ln)	-0.065	(0.407)	198
Share living in city, 1897	-0.039	(0.047)	198
Share of Russians, 1897	0.022	(0.080)	198
Share of Germans, 1897	0.001	(0.001)	198
Labor force participation, 1897	-0.032	(0.029)	198
Share employed in agriculture, 1897	0.093	(0.088)	198
Share employed in industry, 1897	-0.072	(0.065)	198
Share employed in services, 1897	-0.006	(0.010)	198
Share employed in white collar jobs, 1897	0.000	(0.003)	198
Share literate, 1897	-0.017	(0.017)	198
Share of Muslims, 1897	-0.019	(0.073)	198
Share of Orthodox, 1897	0.002	(0.010)	198
Share of Protestants, 1897	0.001	(0.001)	198
Share of Catholics, 1897	-0.000	(0.001)	198
Share of Buddhists, 1897	-0.004	(0.003)	198
Share of Jews, 1897	-0.000	(0.001)	198

Fertility and educational attainment

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable, both panels:	Has children		Higher education		Post-graduate education	
Sample – gender:	Females	Males	Females	Males	Females	Males
Sample – age:	Adults < 30 years old		Adults > 30 years old			
Panel A. The effect of the numbers of Protestant and Muslim deportees						
log(Protestant deportees + 1)	-0.0057**	-0.0021	0.0044	0.0050*	0.0003	0.0004*
	(0.0029)	(0.0017)	(0.0030)	(0.0027)	(0.0002)	(0.0002)
log(Muslim deportees + 1)	0.0019	0.0007	-0.0010	-0.0015	-0.0001	-0.0002
	(0.0012)	(0.0009))	(0.0013)	(0.0012)	(0.0001)	(0.0001)
R-squared	0.235	0.168	0.0740	0.0469	0.00365	0.00737
p-value: β*(Prot.)* $=$ β*(Musl.)*	0.010***	0.133	0.068*	0.017**	0.022**	0.014**
Panel B. The effect of the share of Protestant deportees						
Share of Protestant deportees	-0.0259**	0.0049	0.0222**	0.0215*	0.0021***	0.0025***
	(0.0120)	(0.0091)	(0.0102)	(0.0112)	(0.0006)	(0.0009)
R-squared	0.235	0.168	0.074	0.047	0.004	0.007
Observations	472,868	445,260	1,507,255	1,131,450	1,507,255	1,131,450
Mean of dependent var.	0.409	0.226	0.232	0.206	0.00427	0.00659
Region FE, all controls	✓	✓	✓	✓	✓	✓

Back

Auxiliary outcomes in LiTS

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable, both panels:	Respondent's parent has higher education		Tried to start a business		Respondent has a child	
Sample, gender:	Mother	Father	Female	Male	Female	Male
Panel A. The effect of the numbers of Protestant and Muslim deportees						
log(Protestant deportees + 1)	0.003	0.014***	0.012*	-0.008*	-0.022**	-0.015***
	(0.005)	(0.005)	(0.007)	(0.005)	(0.009)	(0.005)
log(Muslim deportees + 1)	-0.007	-0.007	-0.011	0.011	0.022**	0.007
	(0.009)	(0.008)	(0.007)	(0.013)	(0.011)	(0.014)
R-squared	0.215	0.174	0.0745	0.0939	0.116	0.191
p-value: β(Prot.) = β(Musl.)	0.330	0.007***	0.035**	0.169	0.007***	0.116
Panel B. The effect of the share of Protestant deportees						
Share of Protestant deportees	0.116**	0.135***	0.122**	-0.090	-0.148*	-0.105
	(0.058)	(0.039)	(0.058)	(0.078)	(0.084)	(0.087)
R-squared	0.219	0.175	0.0807	0.0898	0.114	0.193
Oster's delta	-1.130	-1.598	-16.425	23.030	-1.336	25.494
Observations	2,363	2,337	1,688	1,271	1,688	1,271
Mean of dependent var.	0.169	0.229	0.116	0.206	0.517	0.551
Region FE and controls	✓	✓	✓	✓	✓	✓

Effect on attitudes by gender, LiTS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable, both panels:	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		Pro-gender-equality attitudes Normalized b/w 0 and 1	
Sample, gender:	Females	Males	Females	Males	Females	Males	Females	Males
Panel A. The effect of the numbers of Protestant and Muslim deportees								
log(Protestant deportees + 1)	0.039***	0.024***	0.017**	0.030***	0.022	0.018*	0.027***	0.025***
	(0.003)	(0.006)	(0.008)	(0.007)	(0.015)	(0.010)	(0.004)	(0.005)
log(Muslim deportees + 1)	0.002	-0.008	-0.008	-0.014*	-0.028**	-0.007	-0.011	-0.010
	(0.009)	(0.010)	(0.011)	(0.007)	(0.012)	(0.010)	(0.009)	(0.007)
R-squared	0.219	0.173	0.123	0.140	0.174	0.131	0.196	0.175
p-value: β(Prot.) = β(Musl.)	0.00***	0.00***	0.06*	0.00***	0.02***	0.08*	0.00***	0.00***
Panel B. The effect of the share of Protestant deportees								
Share of Protestant deportees	0.182***	0.222***	0.148***	0.210**	0.196**	0.086	0.168***	0.178***
	(0.039)	(0.063)	(0.053)	(0.091)	(0.099)	(0.074)	(0.043)	(0.058)
R-squared	0.212	0.176	0.129	0.140	0.176	0.131	0.196	0.176
Oster's delta	2.233	1.948	-1.236	-10.930	1.802	1.827	-7.061	2.610
Observations	1,662	1,251	1,654	1,250	1,639	1,231	1,616	1,206
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	✓	✓	✓	✓	✓	✓	✓	✓
Baseline controls	✓	✓	✓	✓	✓	✓	✓	✓
Additional LiTS controls	✓	✓	✓	✓	✓	✓	✓	✓

Did your mother obtain tertiary education? Pre-trends

	(1)		(2)	(3)
Specification:	The effect of the number of Protestant deportees	**Specification:**	The effect of the share of Protestant deportees	
Dependent variable:	Female respondent completed higher education	**Dependent variable:**	Female respondent completed higher education	Mother of respondent completed higher education
Source of data:	Census 2010, 10% sample	**Source of data:**	Census 2010, 10% sample	Life in Transition Survey
Regressors:		**Regressors:**		
		Birth cohort -2 (before) × ln nb of Protestant deportees		-0.023
				(0.045)
Birth cohort -1 (before) × log(Protestant deportees + 1)	-0.0013	Birth cohort -1 (before) × Share of Protestant deportees	0.0054	0.001
	(0.0030)		(0.0155)	(0.061)
Birth cohort +1 (after) × log(Protestant deportees + 1)	0.0033	Birth cohort +1 (after) × Share of Protestant deportees	0.0354***	0.092**
	(0.0031)		(0.0129)	(0.045)
Birth cohort +2 (after) × log(Protestant deportees + 1)	0.0062**	Birth cohort +2 (after) × Share of Protestant deportees	0.0543***	0.078
	(0.0031)		(0.0112)	(0.049)
Birth cohort +3 (after) × log(Protestant deportees + 1)	0.0045	Birth cohort +3 (after) × Share of Protestant deportees	0.0145	0.098*
	(0.0032)		(0.0102)	(0.058)
Birth cohort +4 (after) × log(Protestant deportees + 1)	0.0062**	Birth cohort +4 (after) × Share of Protestant deportees	0.0197*	
	(0.0031)		(0.0105)	
Birth cohort +5 (after) × log(Protestant deportees + 1)	0.0042	Birth cohort +5 (after) × Share of Protestant deportees	0.0250**	
	(0.0032)		(0.0125)	
Observations	1,507,255		1,507,255	3,352
Region and birth-year FE and baseline controls	✓		✓	✓
Data-source specific controls	✓		✓	✓
Sample	Census, female respondents		Census, female respondents	LiTs, both genders
R-squared	0.074		0.073	0.207
Mean of dependent var.	0.232		0.232	0.148
SD of dependent var.	0.422		0.422	0.355

Robustness to controls: female leadership in firms

Back

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable, both panels:	Female director dummy						
Sample, firms:	All						
Specification:	Baseline	Robustness					
Panel A. The effect of the numbers of Protestant and Muslim deportees							
log(Protestant deportees + 1)	0.0035***	0.0134***	0.0149***	0.0115***	0.0035***	0.0034***	0.0020**
	(0.0009)	(0.0014)	(0.0014)	(0.0012)	(0.0009)	(0.0010)	(0.0009)
log(Muslim deportees + 1)	-0.0005	-0.0108***	-0.0080***	-0.0075***	-0.0007	-0.0007	-0.0012
	(0.0010)	(0.0020)	(0.0019)	(0.0017)	(0.0010)	(0.0010)	(0.0010)
R-squared	0.0938	0.0220	0.0597	0.0902	0.0942	0.0942	0.0933
p-value: β(Protestant) = β(Muslim)	0.007***	0.000***	0.000***	0.000***	0.005***	0.006***	0.027**
Panel B. The effect of the share of Protestant deportees							
Share of Protestant deportees	0.0288***	0.1714***	0.1850***	0.1453***	0.0189*	0.0203*	0.0222**
	(0.0097)	(0.0358)	(0.0340)	(0.0270)	(0.0109)	(0.0109)	(0.0091)
R-squared	0.0937	0.0191	0.0564	0.0884	0.0940	0.0940	0.0933
Oster's delta	0.239	0.410	33.54	7.054	0.143	0.150	0.140
Observations	1,271,589	1,679,789	1,271,912	1,271,912	1,271,589	1,271,589	1,240,247
Mean of dependent var.	0.298	0.319	0.298	0.298	0.298	0.298	0.301
SD of dependent var.	0.457	0.466	0.457	0.457	0.457	0.457	0.459
Region FE, deportation controls	✓	✓	✓	✓	✓	✓	✓
Industry FE	✓		✓	✓	✓	✓	✓
Company controls	✓			✓	✓	✓	✓
Baseline geographic controls	✓				✓	✓	✓
Extended geographic controls					✓	✓	✓
Number of firms in municipality						✓	✓
FLFP in 1897							✓

Robustness to controls: LiTS

Back

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable, both panels:	1st Principal Component of Pro-gender-equality Attitudes							
Sample:	All respondents, both genders							
Specification:	Baseline	Robustness						
Panel A. The effect of the numbers of Protestant and Muslim deportees								
log(Protestant deportees + 1)	0.023***	0.025***	0.023***	0.023***	0.023***	0.024***	0.025***	0.025***
	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
log(Muslim deportees + 1)	-0.009	-0.006	-0.007	-0.010	-0.010	-0.011	-0.009	-0.011
	(0.008)	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.009)	(0.009)
R-squared	0.164	0.130	0.130	0.139	0.142	0.143	0.180	0.180
p-value: β(Protestant) = β(Muslim)	0.0002***	0.000***	0.0001***	0.000***	0.000***	0.000***	0.000***	0.000***
Panel B. The effect of the share of Protestant deportees								
Share of Protestant deportees	0.154***	0.111**	0.122***	0.145***	0.148***	0.149***	0.167***	0.171***
	(0.040)	(0.049)	(0.038)	(0.038)	(0.037)	(0.040)	(0.047)	(0.047)
R-squared	0.166	0.119	0.125	0.138	0.141	0.142	0.178	0.180
Oster's delta	46.529		1.879	-24.868	-13.370	-92.400	19.263	12.226
Observations	2,822	3,262	3,262	3,262	3,262	3,262	2,340	2,242
Mean of dependent var.	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181
SD of dependent var.	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271
Region FE	✓	✓	✓	✓	✓	✓	✓	✓
Deportee controls	✓		✓	✓	✓	✓	✓	✓
Locality controls	✓			✓	✓	✓	✓	✓
Demographic controls	✓				✓	✓	✓	✓
Extended locality controls	✓					✓	✓	✓
Socio-economic controls	✓						✓	✓
Extended set of historical controls							✓	✓
Parental education controls								✓

Within-region variation in the data: 2010 census data

2010 Census baseline sample					
Number of observations (respondents)	2,744,284				
Number of female respondents	1,454,153				
Number of regions	41				
Number of municipalities	543				
	Mean	Std. dev.	Median	Min	Max
Number of municipalities per region	18.390	10.77	16	1	50
Number of respondents per municipality	34,280	32,645	24,156	265	105,654
Number of female respondents per municipality	18,708.25	17,614.79	13,106	135	57,080
Treatment variables:	Type	Mean	Std. dev.	Min	Max
log(Protestant deportees + 1)	overall	6.468	2.167	0	10.044
	between regions		2.021	0.313	8.993
	within region		1.351	-0.494	12.444
log(Muslim deportees + 1)	overall	2.167	2.685	0	8.171
	between regions		1.955	0	6.086
	within region		1.315	-3.918	8.224
Share of Protestant deportees	overall	0.612	0.339	0	1
	between regions		0.320	0.004	1
	within region		0.184	-0.283	1.473
Outcome variables:	Type	Mean	Std. dev.	Min	Max
LFP if respondent is female	overall	0.741	0.438	0	1
	between regions		0.024	0.693	0.800
	within region		0.438	-0.058	1.048
LFP if respondent is male	overall	0.843	0.363	0	1
	between regions		0.016	0.810	0.869
	within region		0.363	-0.026	1.033
Higher education attainment if respondent is female	overall	0.276	0.447	0	1
	between regions		0.058	0.140	0.385
	within region		0.445	-0.109	1.136
Higher education attainment if respondent is male	overall	0.200	0.400	0	1
	between regions		0.051	0.088	0.314
	within region		0.398	-0.114	1.111

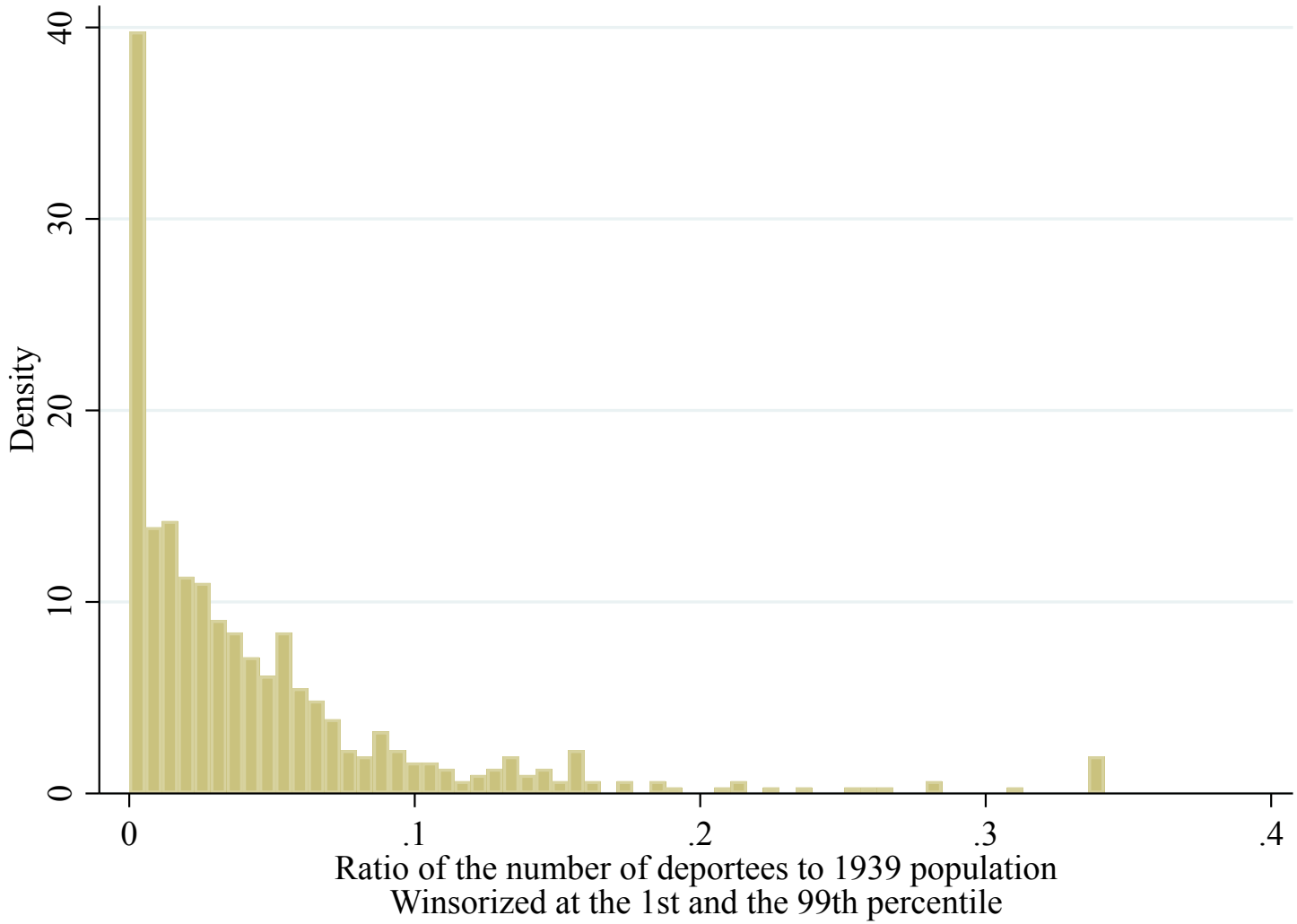
Within-region variation in the data: Orbis firms data

Orbis baseline sample:					
Number of observations (firms)	1,271,589				
Number of regions	50				
Number of municipalities	873				
	Mean	Std. dev.	Median	Min	Max
Number of municipalities per region	20.551	14.345	15	1	54
Number of firms per municipality	41998.44	47009.57	14837	1	119928
Treatment variables:	Type	Mean	Std. dev.	Min	Max
log(Protestant deportees + 1)	overall	5.405	2.937	0	10.044
	between regions		2.308	0	9.120
	within region		2.039	-2.662	11.930
log(Muslim deportees + 1)	overall	5.320	3.493	0	9.861
	between regions		3.163	0	8.427
	within region		1.290	-2.504	13.209
Share of Protestant deportees	overall	0.357	0.354	0	1
	between regions		0.348	0	1
	within region		0.173	-0.515	1.277
Outcome variables:	Type	Mean	Std. dev.	Min	Max
Dummy for female company director	overall	0.298	0.457	0	1
	between regions		0.053	0.183	0.438
	within region		0.454	-0.140	1.115
Share of females among company directors	overall	0.259	0.418	0	1
	between regions		0.045	0.168	0.396
	within region		0.416	-0.137	1.091

Within-region variation in the data: LiTS survey

LiTS baseline sample (members of the majority group in each country):					
Number of observations (respondents)	3,425				
Number of regions	35				
Number of PSUs	230				
	Mean	Std. dev.	Median	Min	Max
Number of PSUs per region	10.799	5.632	11	1	22
Number of respondents per PSU	17.326	4.148	19	1	23
Treatment variables:	Type	Mean	Std. dev.	Min	Max
log(Protestant deportees + 1)	overall	5.630	2.735	0	10.009
	between regions		2.180	0	8.728
	within region		1.407	0.347	12.092
log(Muslim deportees + 1)	overall	6.856	2.734	0	10.118
	between regions		2.564	0	9.448
	within region		1.255	0.992	11.389
Share of Protestant deportees	overall	0.329	0.353	0	1
	between regions		0.286	0	0.962
	within region		0.161	-0.142	0.921
Outcome variables:	Type	Mean	Std. dev.	Min	Max
Disagree with:					
A woman should always do	overall	0.152	0.359	0	1
most of the household chores	between regions		0.150	0	0.571
	within region		0.334	-0.419	1.135
Disagree with:					
It is better if the man earns	overall	0.182	0.386	0	1
the money in the family	between regions		0.147	0.048	0.593
	within region		0.371	-0.411	1.133
Disagree with:					
Men make better political	overall	0.213	0.409	0	1
leaders than women do	between regions		0.171	0.048	0.750
	within region		0.389	-0.537	1.164

Distribution of the ratio of the number of deportations to the local population in 1939



Balance: Geography, climate, and wartime evacuations

Main Explanatory Var.:	Share of Protestant Deportees		
Sample:	All deportation locations		
PLACEBO OUTCOME VAR	COEF	SE	N
Distance to water (ln)	0.146	(0.215)	1,074
Distance to railroad (ln)	0.201	(0.234)	1,074
Distance to Gulag (ln)	0.022	(0.158)	1,074
Travel distance to capital city (ln)	0.167**	(0.070)	1,068
Ruggedness	0.912	(1.871)	1,074
Soil Suitability low inputs	-0.140	(0.201)	1,074
Soil Suitability high inputs	-0.070	(0.192)	1,074
Precipitation (June-August) (ln)	-0.062*	(0.036)	1,074
Precipitation (Dec-Feb) (ln)	-0.066**	(0.032)	1,074
Temperature (June-August)	-0.020	(0.328)	1,074
Temperature (Dec-Feb)	-0.482	(0.389)	1,074
Evacuated enterprise dummy	-0.098	(0.070)	1,068

Back

Balance: 1939 USSR Population Census

Main Explanatory Var.:	Share of Protestant Deportees		
Sample:	All deportation locations		
PLACEBO OUTCOME VAR	COEF	SE	N
Log of total population, 1939	-0.092	(0.113)	1,068
Share of Chechens, 1939	0.000	(0.000)	1,068
Share of Germans, 1939	0.006	(0.004)	1,068
Share of Russians, 1939	-0.020	(0.025)	1,068
Share of Uzbeks, 1939	-0.018	(0.013)	1,068
Share of Turkmens, 1939	-0.001	(0.001)	1,068
Share of Tajiks, 1939	0.000	(0.004)	1,068
Share of Kazakhs, 1939	0.046**	(0.019)	1,068
Share of Kirghiz, 1939	0.005	(0.013)	1,068
Share of Koreans, 1939	-0.001	(0.003)	1,068
Share of Karakalpaki, 1939	-0.001	(0.000)	1,068
Share of Udmurts, 1939	-0.001	(0.001)	1,068
Share of Tartars, 1939	0.007	(0.007)	1,068
Share of Mariians, 1939	-0.004	(0.003)	1,068
Share of Chuvashs, 1939	0.007*	(0.004)	1,068

Back

Balance: 1897 Russian empire Census

Main Explanatory Var.:	Share of Protestant Deportees		
Sample:	All deportation locations		
PLACEBO OUTCOME VAR	COEF	SE	N
Population density (sq km) 1897 (ln)	0.035	(0.102)	1,042
Share living in city, 1897	0.005	(0.028)	1,042
Share of Russians, 1897	0.017	(0.032)	1,042
Share of Germans, 1897	0.003	(0.003)	1,042
Labor force participation, 1897	0.008	(0.011)	1,042
Share employed in agriculture, 1897	-0.032	(0.049)	1,042
Share employed in industry, 1897	0.005	(0.020)	1,042
Share employed in services, 1897	-0.004	(0.005)	1,042
Share employed in white collar jobs, 1897	0.002	(0.003)	1,042
Share literate, 1897	0.008	(0.013)	1,042
Share of Muslims, 1897	-0.040	(0.028)	1,042
Share of Orthodox, 1897	0.022	(0.016)	1,042
Share of Protestants, 1897	0.004	(0.003)	1,042
Share of Catholics, 1897	0.001	(0.001)	1,042
Share of Buddhists, 1897	-0.000	(0.002)	1,042
Share of Jews, 1897	0.001	(0.001)	1,042

Back

Robustness: different clusters

Back

	(1)	(2)
Dependent variable:	LFP, females	Female director
Source of data:	2010 Census	Orbis
Panel A. Full baseline samples		
Coefficient: Share of Protestant deportees	0.0246	0.0288
SEs: clustered by municipality (baseline)	(0.0093)***	(0.0097)***
SEs: clustered by region	(0.0103)**	(0.0130)**
R-squared	0.153	0.094
Observations	1,454,153 (individuals)	1,271,415 (firms)
Panel B. 10% random draw from the full baseline samples		
Coefficient: Share of Protestant deportees	0.0280	0.0288
SEs: clustered by municipality	(0.0113)***	(0.0130)**
SEs: Conley, 150km radius	(0.0112)**	(0.0146)**
SEs: Conley, 200km radius	(0.0111)**	(0.0150)*
R-squared	0.154	0.095
Observations	145,413 (individuals)	126,992 (firms)
Panel C. Municipality-level regressions		
Coefficient: Share of Protestant deportees	0.0173	0.0236
SEs: robust	(0.0104)*	(0.0141)*
R-squared	0.420	0.689
Observations	541 (municipalities)	870 (municipalities)

Robustness: different clusters, LiTS

Back

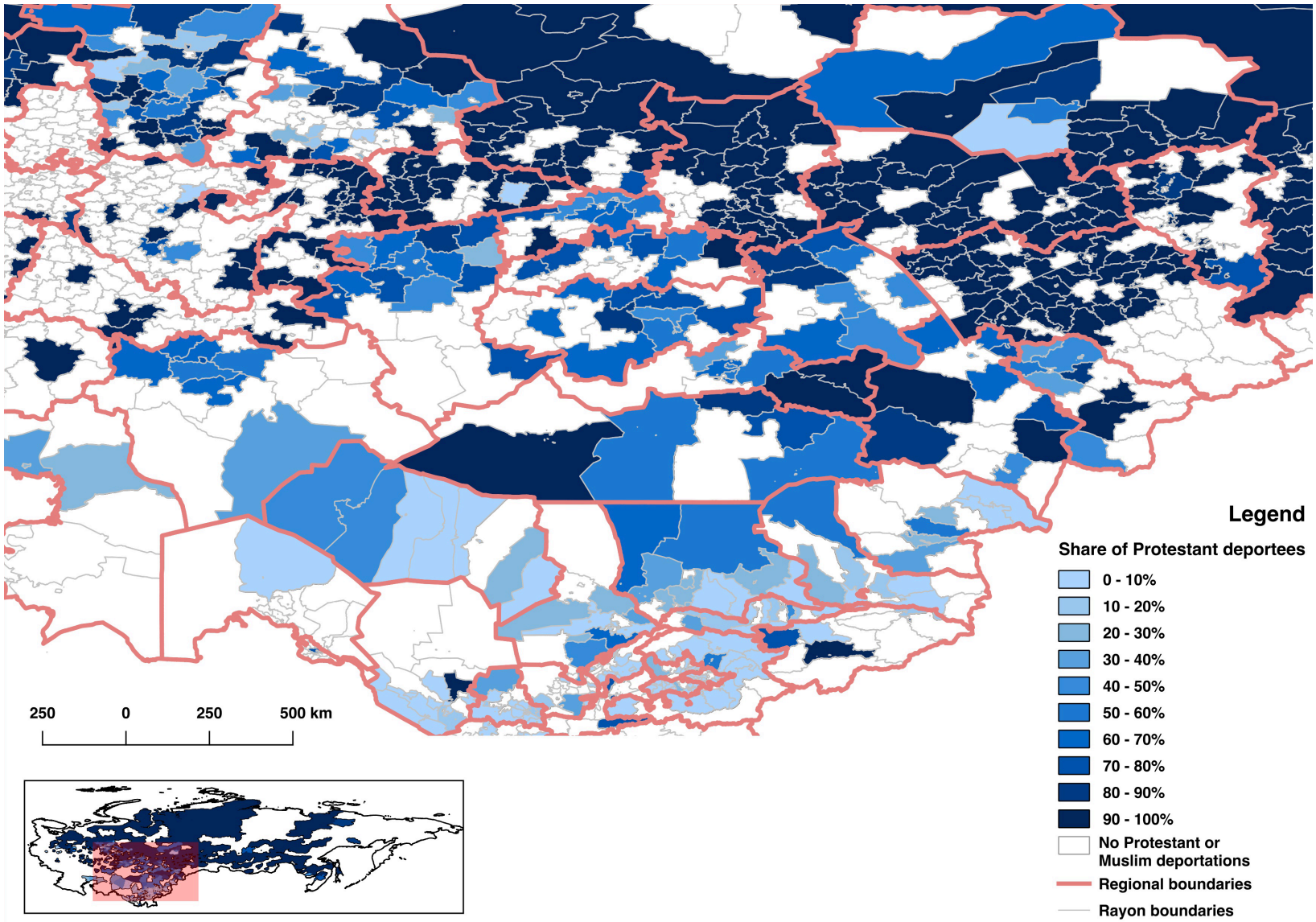
	(1) 1st Principal Component Progressive attitudes normalized b/w 0 and 1
Panel A. LiTS sample, individual respondents	
The share of Protestant deportees	0.154
SEs: Conley, 150km radius, baseline	(0.040)***
SEs: Conley, 200km radius	(0.032)***
SEs: clustered by PSU	(0.046)***
SEs: clustered by region	(0.036)***
Sample: gender	Both
Observations	2,822
R-squared	0.166
Panel B. LiTS sample, PSUs	
The share of Protestant deportees	0.145
SEs: Conley, 150km radius	(0.046)***
Observations	227
R-squared	0.482
Region FE and Controls	✓

Timeline of indiscriminate ethnic deportations

- Two main waves:
  - 1941–1942: "Preventive" deportations (Soviet Germans)
  - 1943–1944: "Retributive" deportations (Chechens, Crimean Tatars, Meskhetian Turks)
- Deportees were allowed to return to their homelands also in two waves:
  - 1960s: Chechens (and all other smaller groups, with the exception of the three groups)
  - 1990s: Soviet Germans, Crimean Tatars, Meskhetian Turks

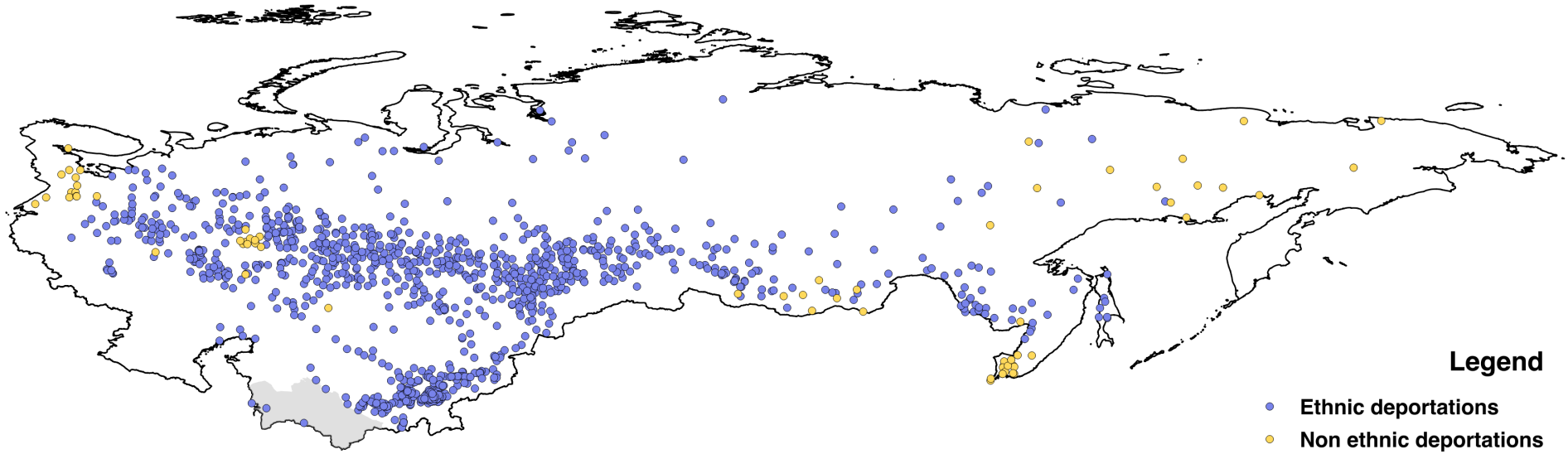
Back

Share of Protestants among deportees



Backs

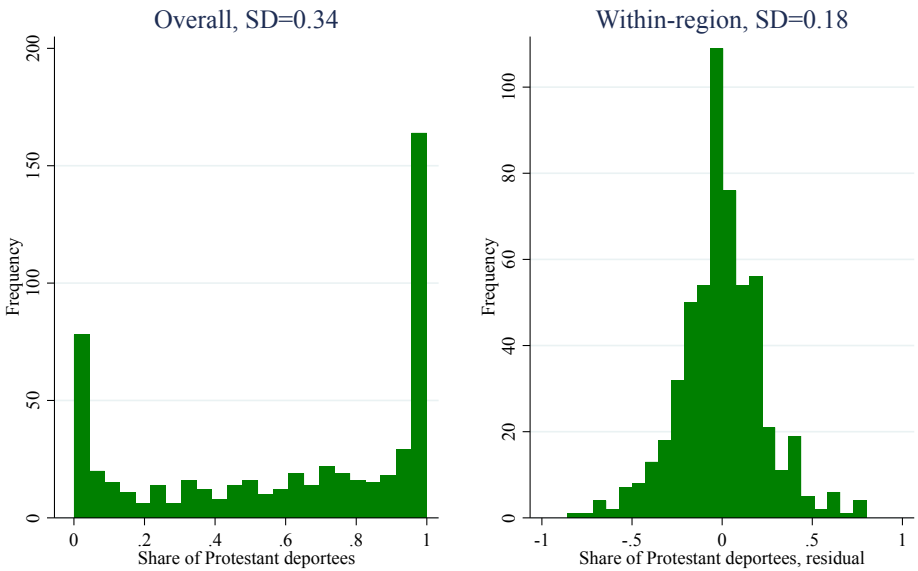
Deportation destinations



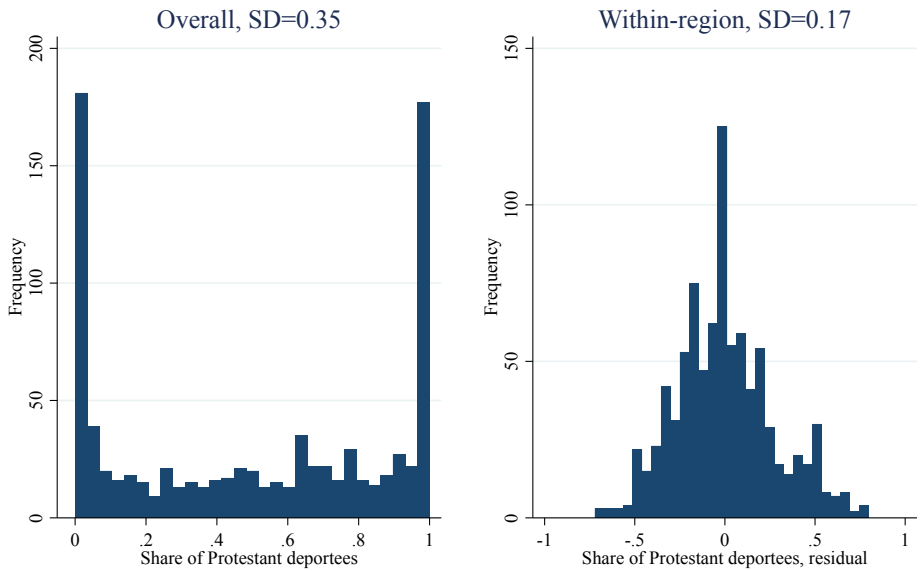
Back

Variation in the share of Protestant deportees across destinations in the data, overall and within-region

Russia Census
Across 543 localities in 41 regions



Orbis, Russia and Central Asia
Across 873 localities in 50 regions



▸ Map of the share of Protestant deportees

▸ Back to specification