

Biased Media and Foreign Policy Preferences: Online Appendix

Anonymous

Contents

A Background	2
B Attitudes and public opinion before the EU referendum	3
B.1 TV media exposure	3
B.2 Confidence in the European Union and NATO	4
B.3 Confidence in NATO	5
B.4 Political attitudes	6
C Russian TV media coverage of Latvia	7
D Russian television reception	8
E The Model	10
F Descriptive statistics	11
G Balance test	13
H Robustness regressions	14
I Effect-Heterogeneity	15
I.1 Full Output of the Interactive Models	16
I.2 More Flexible Interactive Model	17
I.3 KRLS-Based Heterogeneity Estimates	18

A Background

Latvia has five regions, one of them, Latgale, sharing a mutual border with Russia, Belarus and Estonia. Latgale has the highest share of Russian speakers, 65.6 percent, followed by the region of the capital, Riga, with 56 percent. Before the European Union referendum, ethnic Latvian and Russian population in the country had compatible demographic background: average age was 46.6 and 48.5, age of completed education – 20.6 and 19.8 respectively, and average household income – 101-150 LVL a month.¹ Latvian is a second language for 20.8 percent of the population, and 43.7 percent speak Russian as a second language. In total, 71 percent of ethnic Latvians speak Russian, and 52 percent of ethnic Russians speak Latvian in a census from 2011. Latvia experienced an influx of Russian-speaking immigrants during the Soviet Union period. The region received substantial industrial investments from the Soviet government — a large number of Soviet factories and enterprises were located in the region. After the fall of the Soviet Union in 1991, many Russian speakers in Riga left the country, but a significant amount chose to remain in the Eastern regions. Latgale is the most impoverished region in the country — it has the highest unemployment rate and the lowest level of individual income tax per capita among the counties' budgets.² In general, the economic development of Latvia has been marked by peaks and valleys, witnessing a particularly dangerous volatility before and after World War II, in 1991, and after the crisis in 2008. The country survived the most significant level of depopulation in these same years. These events do not coincide with the period of analysis of this study.

Table 1: The most popular TV channels in Latvia in 2015

Rank	TV Channel	Founded	Share, %	Language	Genre	Ownership	Founder	Funding
1	TV3	1998	11.5	Latvian	General	Private	Modern Times Group	Commercials
2	LTV1	1954	9.8	Latvian, Russian	General	Public	Latvia's Television	Latvian government, commercials
3	PBK	2002	8.8	Russian	General	Private	Baltijas Mediju Alianse	Russian government, commercials
4	LNT	1996	8.3	Latvian	General	Private	Modern Times Group	Commercials
5	NTV Mir Baltic	2011	7.4	Russian	General	Private	Baltijas Mediju Alianse	Russian government, commercials

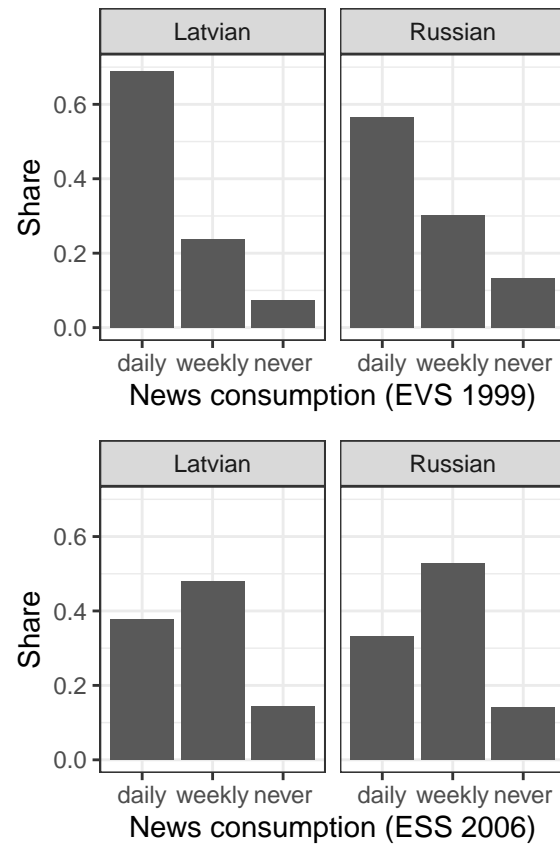
Source: TNS Latvia 2015. Share, % - share of viewing, the percentage of the total viewing audience watching over a given period of time.

¹European Values Survey 1999.

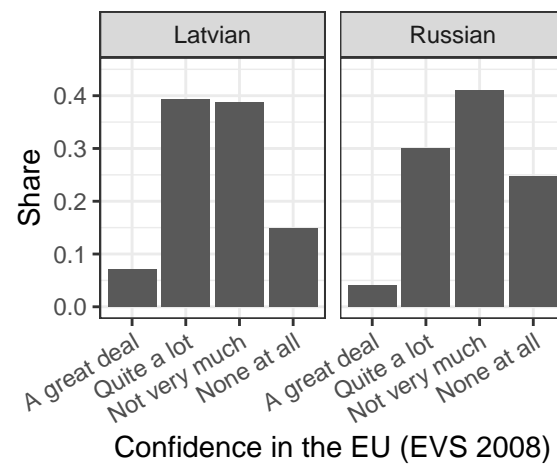
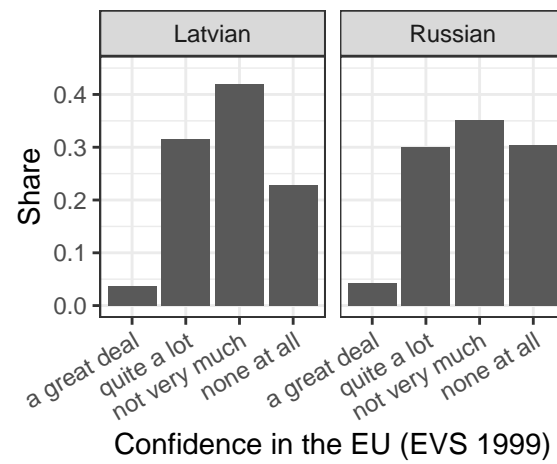
²Central Statistical Bureau of Latvia 2005.

B Attitudes and public opinion before the EU referendum

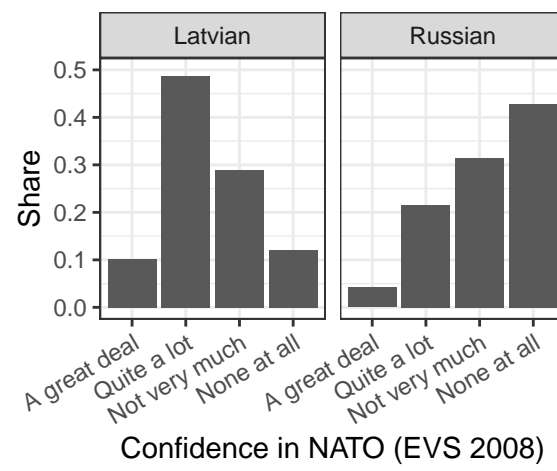
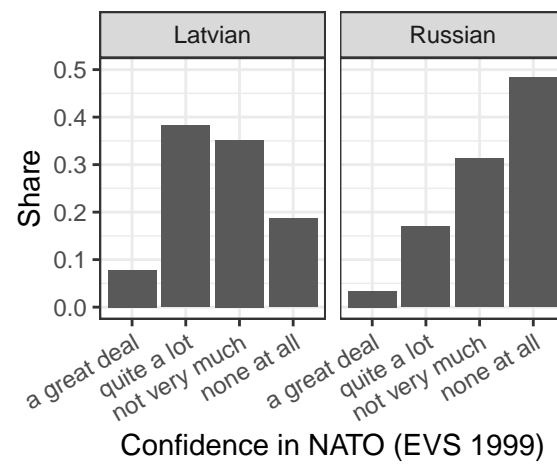
B.1 TV media exposure



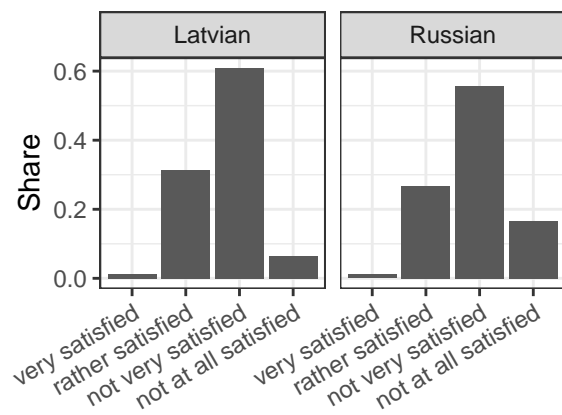
B.2 Confidence in the European Union and NATO



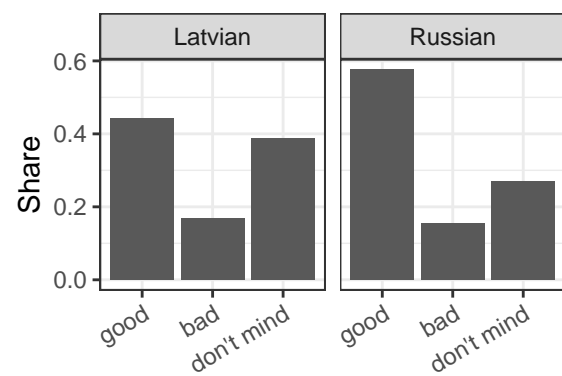
B.3 Confidence in NATO



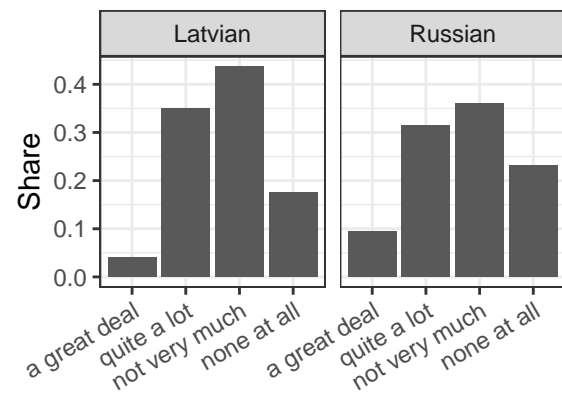
B.4 Political attitudes



Satisfaction with democracy (EVS 1999)

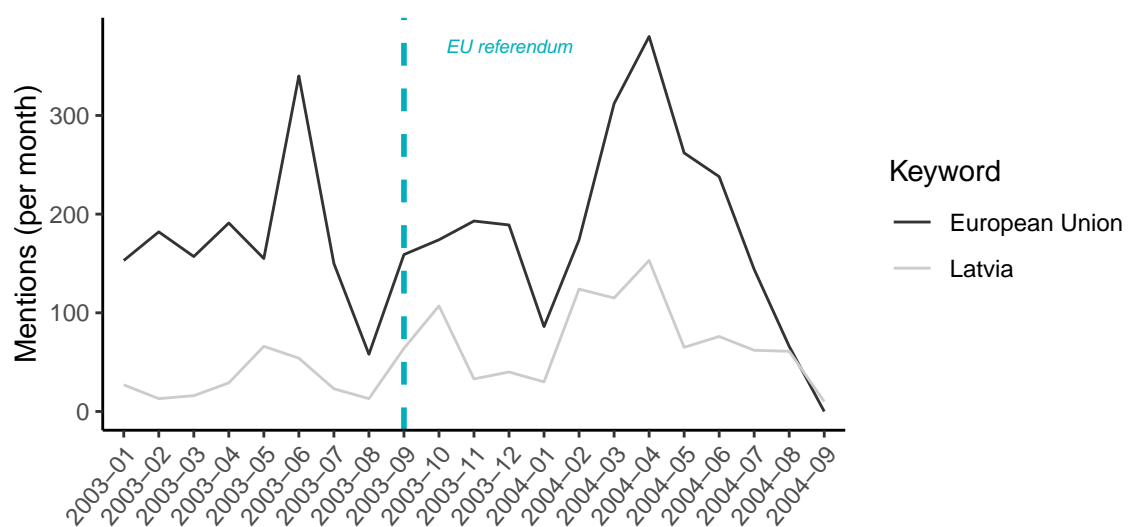


Respect for authority (EVS 1999)



Confidence in the police (EVS 1999)

C Russian TV media coverage of Latvia



D Russian television reception

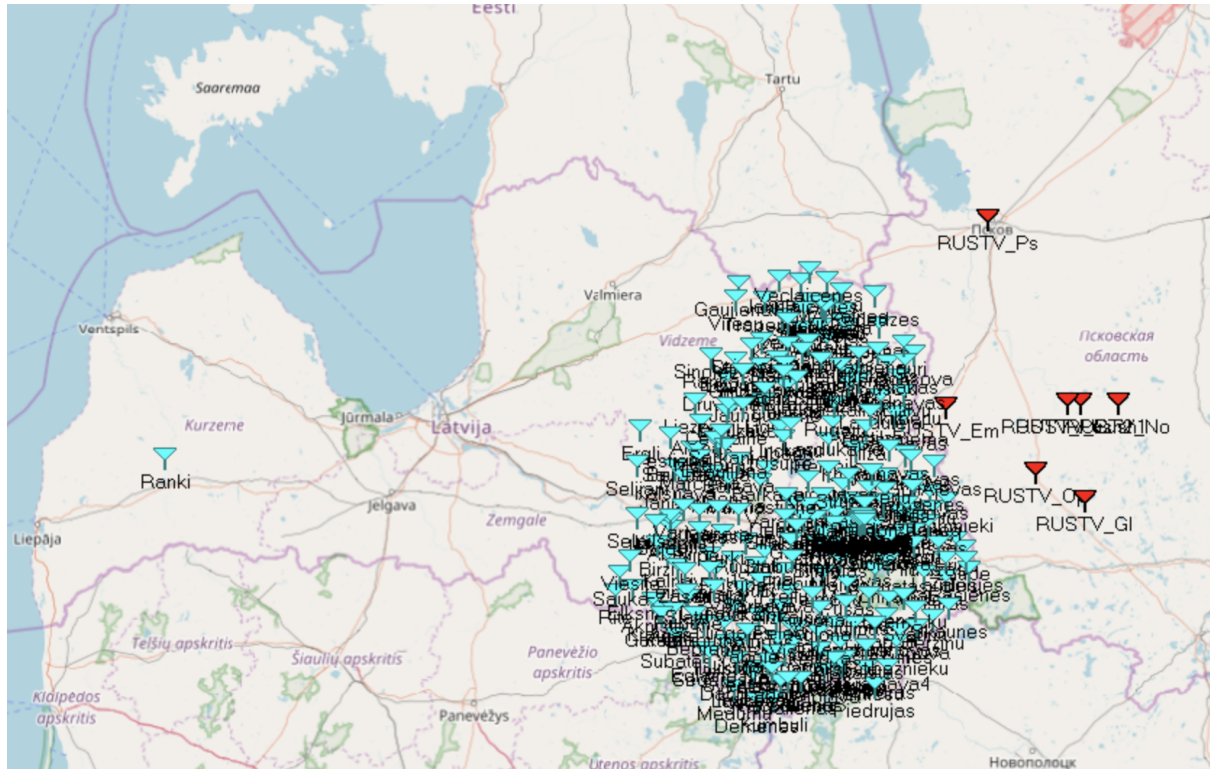


Figure 1: Mapped precincts in Latvia, up to 150 km from the Russian border. Source: Radio Mobile, ITU 2003.

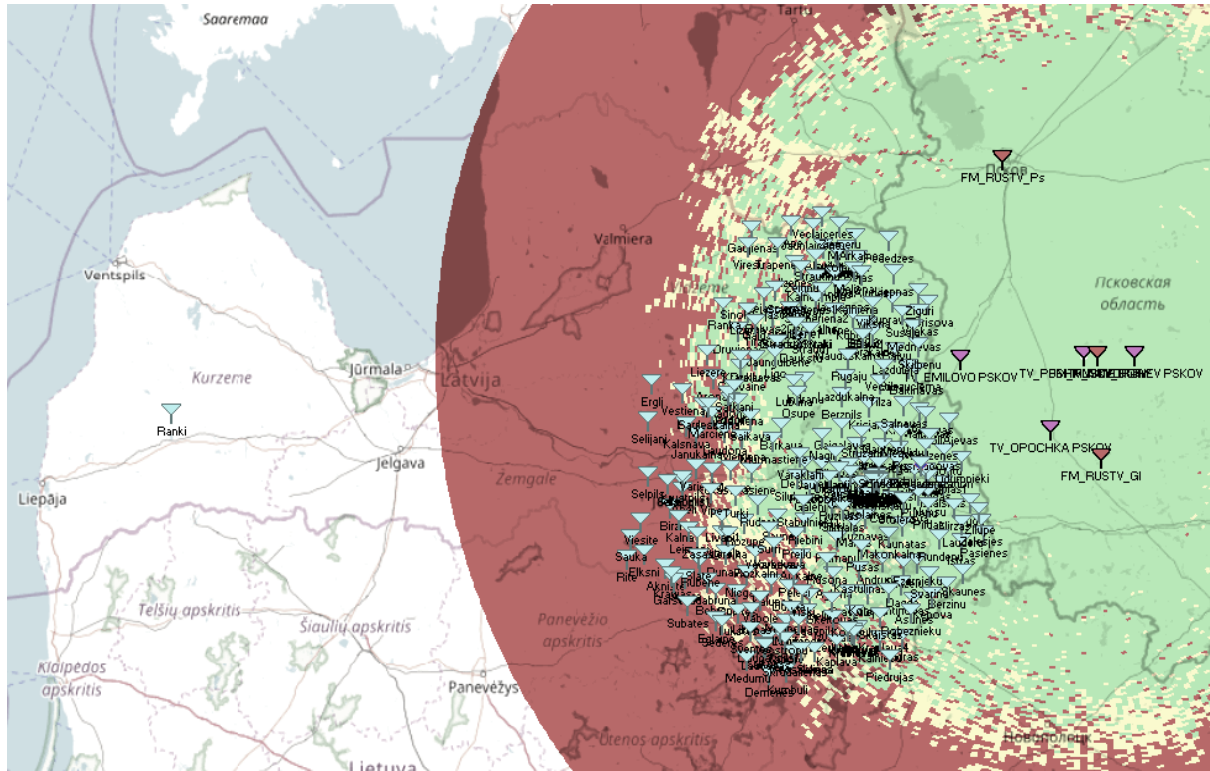


Figure 2: Estimated coverage of Russian analog TV transmitters in Latvian. Green is a good reception (watching TV is possible), yellow is a moderate reception (poor quality of picture), and red – no signal. Triangles in Latvia are Latvian precincts, and in Russia – Russian analog TV towers. For illustration, FM towers are also placed on the map, but not included in the estimation of the coverage.

E The Model

To formalize the issue, I will use the notation from Jasjeet Titunik. Let M_i be equal to 1 if a county i has the Russian TV signal and equal to 0 if a county i has no signal, and let R_i be equal to 1 if a county i has 60 or more percent of ethnic Russians, and 0 if otherwise. Then, the vote share against joining the EU in a county i will be Y_{0i} if $M_i=0$ and $R_i=0$ (the county has no signal of Russian TV and less than 60 percent of ethnic Russians), then Y_{1i} vote share against joining the EU if $M_i=0$ and $R_i=1$ (the county has no signal and the share of ethnic Russians 60 or more percent), and Y_{2i} if $M_i=1$ and $R_i=1$ (the county has the signal and the share of ethnic Russians 60 or more percent). Hence, we observe the following vote share against joining the EU:

$$Y_i = Y_{0i} \cdot (1 - M_i) \cdot (1 - R_i) + Y_{1i} \cdot (1 - M_i) \cdot R_i + Y_{2i} \cdot M_i \cdot R_i. \quad (1)$$

The average treatment effect on the treated (ATT) will be

$$ATT_0 = E[Y_{2i} - Y_{0i} | M_i = 1, R_i = 1]. \quad (2)$$

$$ATT_1 = E[Y_{2i} - Y_{1i} | M_i = 1, R_i = 1]. \quad (3)$$

However, as I mentioned above, distance to Russia and the presence of a river or lake in a county may jeopardize the randomness of the assignment of the signal strength to a county. Thus, I control for these factors and derive a weaker version of my research design:

$$ATT_0 = E[Y_{2i} - Y_{0i} | M_i = 1, R_i = 1, \mathbf{X}]. \quad (4)$$

$$ATT_1 = E[Y_{2i} - Y_{1i} | M_i = 1, R_i = 1, \mathbf{X}], \quad (5)$$

where \mathbf{X} is a vector of observable traits.

I derive the following equation:

$$Russian_TV_Signal_i = \beta X_i + \epsilon_i, \quad (6)$$

where $Russian_TV_Signal_i$ represents the availability of Russian television and X_i is a matrix of controls.

The stochastic component of the model I define as the following:

$$Y_i \sim N(y_i | \theta_i, \alpha), \quad (7)$$

where Y_i is the normally distributed dependent variable. The systematic component of the model looks as

$$\theta_i = g(\mathbf{X}_i, \beta), \quad (8)$$

where \mathbf{X}_i is the matrix of key explanatory variables and control variables:

$$\beta_1 Signal + \beta_2 Distance_i + \beta_3 Controls + \epsilon_i, \quad (9)$$

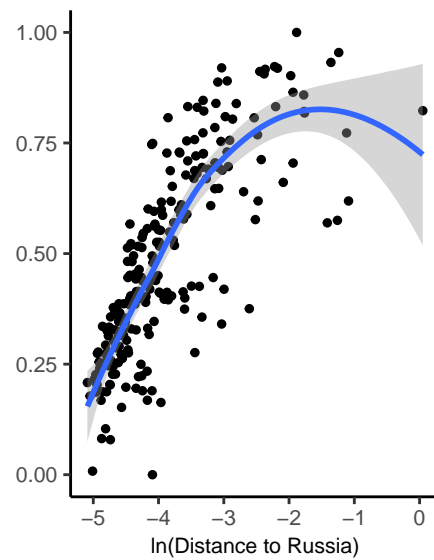
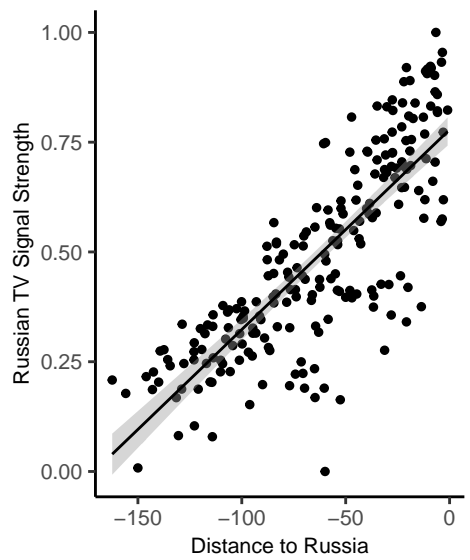
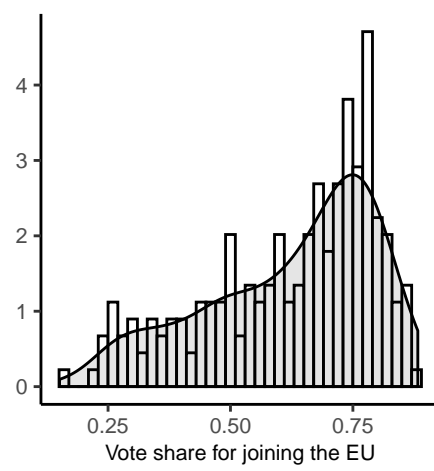
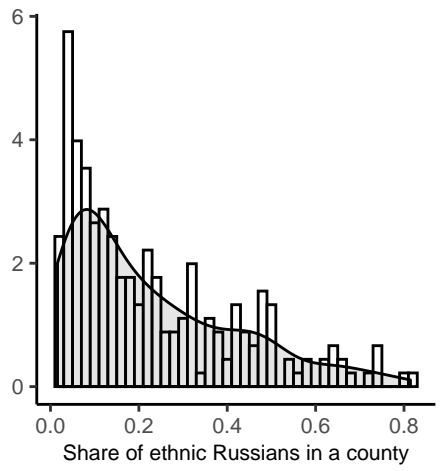
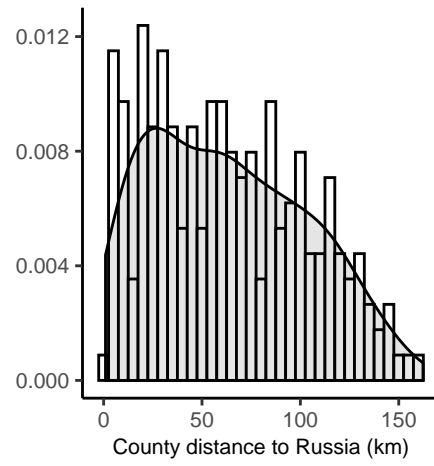
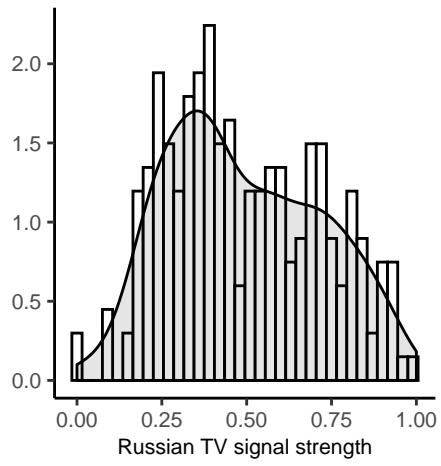
To make a mechanism of the interaction effect more intuitive, I write the model as follows:

$$\beta_1 Signal_i + (\beta_2 + \beta_3 Signal_i) Russians_i + Controls_i \beta_4, \quad (10)$$

F Descriptive statistics

Table 2: This table report essential statistics for county-level covariates. Dummies like Village, Main roads, Railways, River or Lake, Former USSR Factory are not included into this table.

Statistic	N	Mean	St. Dev.	Min	Max
Vote share for joining the EU	223	0.62	0.17	0.15	0.88
Vote share against joining the EU	223	0.37	0.17	0.12	0.85
Russian TV signal strength	223	0.49	0.22	0.00	1.00
Working age (share)	226	0.54	0.03	0.47	0.63
Aged 60 and over (share)	226	0.26	0.04	0.16	0.35
Ethnic Russians (share)	226	0.28	0.22	0.02	0.85
Higher Education (share)	226	0.05	0.02	0.01	0.10
Unemployed (share)	226	0.43	0.24	0.00	1.00
Turnout 1998, n	226	611.03	494.81	148	4,108
Results 1998	226	0.59	0.12	0.26	0.96
Voters 2003, n	223	576.55	528.18	121.00	4,679.00
Turnout 2003	223	0.49	0.15	0.02	0.81
Distance to Russia, km	226	63.05	39.87	0.95	162.36
Population, n	226	2,388.33	8,334.67	351	115,265



G Balance test

	County-level effects			District fixed effects			
	Est.	S.E.	p-val.	Est.	S.E.	p-val.	Obs.
Precinct population features							
1. Pro-Russian vote, 1998	-0.06	0.04	0.19	-0.05	0.05	0.33	220
2. Number of votes, 1998	0.12	0.21	0.58	-0.41	0.23	0.08	220
3. % Ethnic Russians	-0.02	0.06	0.77	-0.09	0.07	0.24	220
4. % Russian speakers	-0.19	0.07	0.01	-0.17	0.09	0.06	220
5. Population (log)	-0.17	0.33	0.59	-0.69	0.33	0.04	220
6. Rural precinct	0.15	0.13	0.22	0.23	0.14	0.10	220
7. Close to highways	0.44	0.18	0.01	0.41	0.18	0.03	220
8. Close to railways	-0.03	0.09	0.75	-0.10	0.09	0.23	220
9. Former USSR factory	-0.04	0.07	0.57	-0.07	0.07	0.29	220
10. % Working age	-0.00	0.01	0.92	-0.02	0.01	0.18	220
Precinct features							
11. Age 60 and more	-0.01	0.02	0.57	0.00	0.02	0.94	220
12. Higher education	0.00	0.01	0.95	-0.00	0.01	0.52	220
13. Large river or lake	-0.29	0.16	0.08	-0.24	0.18	0.18	220
14. % Unemployed	0.06	0.08	0.52	-0.01	0.09	0.95	220

Table 3: Balance tests. OLS coefficients for residualized Russian television reception.

H Robustness regressions

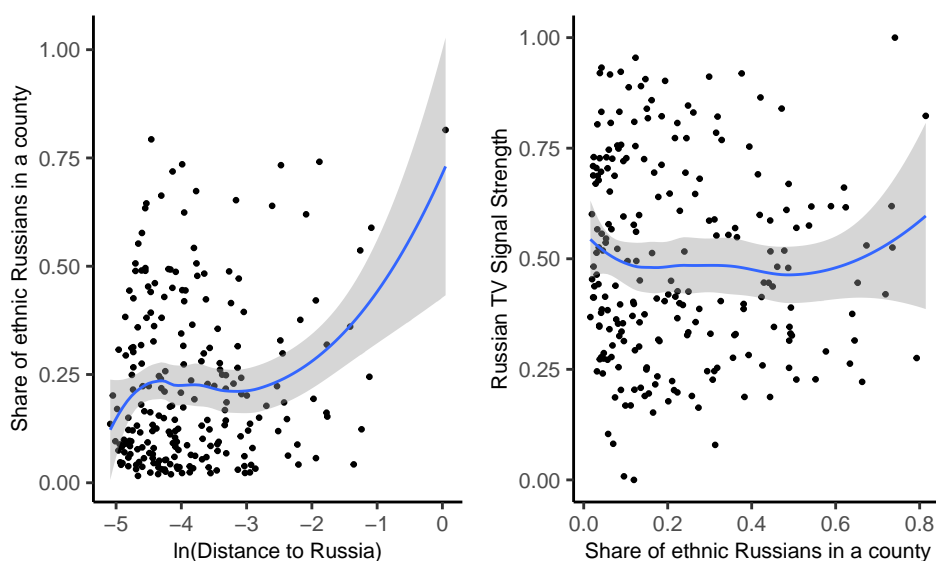
Table 4: Robustness checks: regression coefficients for Russian TV reception. All specifications include the full set of covariates

	Vote for the EU		Turnout		Obs.
	Coef.	S.E.	Coef.	S.E.	
1. Distance to Russia < 50 km	0.27***	(0.08)	0.10	(0.10)	93
2. Distance to Russia > 25 km	0.20***	(0.06)	0.07	(0.09)	171
3. Russian TV reception $\in (0.2, 0.8)$	0.17**	(0.05)	0.14	(0.09)	177
4. Only villages	0.23***	(0.06)	0.08	(0.06)	200
5. Only towns and cities	-0.54***	(0.06)	-1.47***	(0.30)	20
6. Only Daugavpils district	-0.48	(0.32)	0.13	(0.45)	26
7. Without Daugavpils district	0.25***	(0.06)	0.06	(0.07)	194
8. Control for ≥ 60 years olds (%)	0.20***	(0.05)	0.09	(0.07)	220
9. Control for unemployment rate	0.19***	(0.06)	0.06	(0.08)	220
10. $\geq 60\%$ Russian speakers	-3.10***	(0.00)	1.56***	(0.00)	14
11. $\leq 60\%$ Russian speakers	0.18**	(0.06)	0.05	(0.08)	206
12. Control for population N (log)	0.22***	(0.05)	0.09	(0.06)	220
13. Control for higher education (%)	0.22***	(0.05)	0.05	(0.07)	220

Note: Standard errors in parentheses; *p<0.05; **p<0.01; ***p<0.001.

I Effect-Heterogeneity

Is the effect of the biased foreign media consistent across all ethnic Russians due to their shared historical background? Will it be fair to state that all Russians are affected by state propaganda by default since there is a lack of the influential independent Russian media outlets both abroad and within the Russian Federation? I suggest analyzing the state propaganda effects on an intergroup level, assuming that the effects can differ even within the ethnic groups themselves. In particular, I expect that, within the community of ethnic Russians, the impact of the biased media will vary across age as the younger generation has more experience with alternative sources of information such as the Internet media in comparison with elderly Russian citizens. Inside the Latvian group, the effects will be stronger among those who benefited from Soviet regime by working in large factories that were closed after the fall of the regime.



I.1 Full Output of the Interactive Models

Table 5: Full output of the fully interactive regressions. Both specifications include splines for distance to Russia.

	Vote for the EU (1)	Turnout (2)
Russian TV Reception	−0.39* (0.15)	0.12 (0.29)
Percent Russian speakers	−0.55*** (0.09)	−0.18 (0.16)
Pro-Russian vote, 1998	−0.82*** (0.13)	−0.22 (0.24)
Rural precinct	−0.10* (0.04)	0.14 (0.08)
Close to highways	0.01 (0.04)	−0.06 (0.07)
Russian TV Reception x Percent Russian speakers	−0.02 (0.15)	0.05 (0.28)
Russian TV Reception x Pro-Russian vote, 1998	0.87*** (0.24)	0.09 (0.45)
Russian TV Reception x Rural precinct	0.14 (0.08)	−0.14 (0.15)
Russian TV Reception x Close to highways	−0.05 (0.07)	0.08 (0.13)
Constant	1.10*** (0.09)	0.53** (0.17)
N	220	220
R ²	0.83	0.18
Adjusted R ²	0.82	0.13
Residual Std. Error (df = 207)	0.07	0.14

*p < .05; **p < .01; ***p < .001

I.2 More Flexible Interactive Model

Table 6: Full output of the fully interactive regressions. Both specifications include splines for distance to Russia.

	Vote for the EU	Turnout
	(1)	(2)
Russian TV Reception	−0.39* (0.16)	−0.01 (0.30)
Percent Russian speakers	−0.65** (0.20)	−0.39 (0.38)
Pro-Russian vote, 1998	−0.74** (0.24)	−0.89* (0.44)
Rural precinct	−0.07 (0.11)	−0.10 (0.20)
Close to highways	0.12 (0.09)	−0.31 (0.16)
Russian TV reception x Percent Russian speakers	0.02 (0.15)	0.06 (0.28)
Russian TV reception x Pro-Russian vote, 1998	0.86*** (0.25)	0.21 (0.46)
Russian TV reception x Rural precinct	0.14 (0.08)	−0.11 (0.15)
Russian TV reception x Close to highways	−0.06 (0.07)	0.09 (0.13)
Pro-Russian vote, 1998 x Percent Russian speakers	0.13 (0.26)	0.34 (0.48)
Pro-Russian vote, 1998 x Rural precinct	−0.05 (0.17)	0.40 (0.31)
Pro-Russian vote, 1998 x Close to highways	−0.16 (0.13)	0.41 (0.23)
Constant	1.04*** (0.16)	0.96** (0.29)
N	220	220
R ²	0.83	0.20
Adjusted R ²	0.82	0.14
Residual Std. Error (df = 204)	0.07	0.14

*p < .05; **p < .01; ***p < .001

I.3 KRLS-Based Heterogeneity Estimates

