Supplementary Materials for

Rising Educational Divides in Attitudes: How Polarization Across Cohorts Can Mask Age-Related Polarization

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This PDF file includes:

Supplementary Table S1. Semi-parametric spline regressions of immigration concerns on age and education

	POLS	POLS	FE
Education (ref.: Low)			
Medium	-0.043***	0.179***	0.000
High	-0.046**	0.269***	0.000
17 < Age < 25	0.013***	0.013***	0.016***
25 < Age < 30	0.002	0.009*	0.009*
30 < Age < 35	0.005	0.008*	0.013***
35 < Age < 40	-0.007	0.001	0.004
40 < Age < 45	0.002	0.012**	0.011**
45 < Age < 50	-0.002	0.003	0.003
50 < Age < 55	0.003	0.011**	0.013***
55 < Age < 60	-0.007	-0.000	0.002
60 < Age < 65	0.006	0.009**	0.013***
65 < Age < 70	-0.005	-0.003	-0.001
70 < Age < 75	-0.001	-0.000	0.008**
75 < Age < 80	-0.009*	-0.009*	0.001
[17 < Age < 25] x Medium	-0.002	-0.002	-0.006
[17 < Age < 25] x High	-0.020***	-0.020***	-0.017***
[25 < Age < 30] x Medium	0.003	-0.003	-0.006
[25 < Age < 30] x High	-0.004	-0.012**	-0.009
[30 < Age < 35] x Medium	-0.006	-0.008*	-0.008*
[30 < Age < 35] x High	-0.006	-0.010*	-0.012**
[35 < Age < 40] x Medium	0.006	-0.001	0.001
[35 < Age < 40] x High	0.008	-0.001	0.001
[40 < Age < 45] x Medium	0.002	-0.006	-0.003
[40 < Age < 45] x High	0.001	-0.010*	-0.006
[45 < Age < 50] x Medium	0.002	-0.001	0.002
[45 < Age < 50] x High	0.000	-0.004	-0.000
[50 < Age < 55] x Medium	-0.003	-0.010*	-0.006
[50 < Age < 55] x High	-0.000	-0.010*	-0.008
[55 < Age < 60] x Medium	0.008	0.002	0.004
[55 < Age < 60] x High	0.010*	0.001	0.003
[60 < Age < 65] x Medium	-0.007*	-0.009*	-0.009**
[60 < Age < 65] x High	-0.002	-0.006	-0.008*
[65 < Age < 70] x Medium	0.005	0.003	0.005
[65 < Age < 70] x High	0.010*	0.006	0.006
[70 < Age < 75] x Medium	0.000	-0.000	-0.002
[70 < Age < 75] x High	0.005	0.004	-0.004
[75 < Age < 80] x Medium	0.011*	0.011*	0.005
[75 < Age < 80] x High	0.013*	0.013**	0.007
Gender (ref.: Male)			
Female	-0.021***	-0.020***	
Place of residence (ref.: West-Germany)			
East-Germany	0.073***	0.072***	
Social origin (ref.: Low)			
High	-0.050***	-0.050***	
Missing	-0.036***	-0.034***	
GDP growth rate (in %)	0.016***	0.017***	0.017***
Growth rate of real disp. income (in %)	-0.010***	-0.011***	-0.011***

Unemployment rate	0.029***	0.030***	0.034***
Number of asylum applications/100000	0.015***	0.015***	0.013***
Non-German immigrants/100000	0.010***	0.009***	0.006***
Non-European immigrants/100000	0.078***	0.078***	0.084***
Non-Western immigrants/100000	-0.089***	-0.087***	-0.086***
Panel conditioning (ref.: 4+ years in panel)			
1st year in panel	-0.003	-0.003	0.017***
2nd year in panel	-0.013***	-0.012***	0.007*
3rd year in panel	-0.007*	-0.006*	0.007**
Interviewer presence (ref.: Interviewer not present)			
Interviewer present	-0.027***	-0.027***	-0.028***
Years since interviewer change (ref.: 4 and more)			
1	-0.015***	-0.015***	-0.013***
2	-0.013***	-0.012***	-0.010***
3	-0.021***	-0.020***	-0.017***
Birth cohort (ref.: 1919-1949)			
1950-1961		0.076***	
1962-1974		0.152***	
1975-2002		0.269***	
Birth cohort (ref.: 1919-1949 x Medium)			
1950-1961 x Medium		-0.055**	
1962-1974 x Medium		-0.131***	
1975-2002 x Medium		-0.221***	
Birth cohort (ref.: 1919-1949) x High			
1950-1961 x High		-0.098***	
1962-1974 x High		-0.188***	
1975-2002 x High		-0.317***	
Constant	-0.133***	-0.407***	-0.333***
Person years	444918	444918	444918
Individuals	60400	60400	60400

Panel robust standard errors in parentheses (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$).
Data source: SOEP v37, own computations.

Supplementary Table S2. Cohort-specific regressions of immigration concerns on age and education
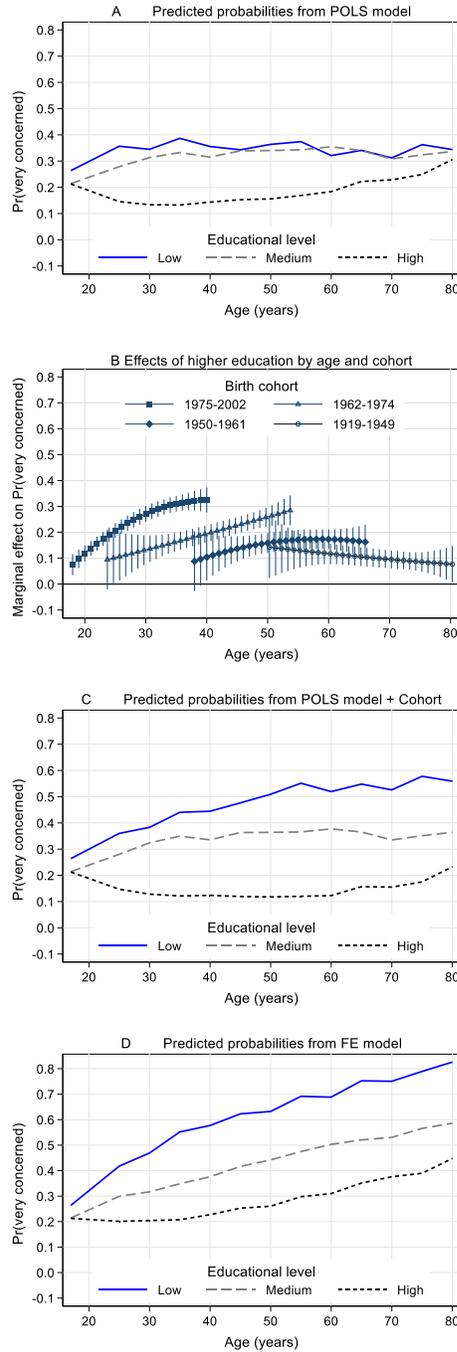
	Year of birth			
	1919-1949	1950-1961	1962-1974	1975-2002
Age (in years)	0.0394***	0.0114	0.0073	0.0251***
	(0.0118)	(0.0147)	(0.0096)	(0.0070)
Age2	-0.0003***	-0.0001	-0.0000	-0.0003*
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Education (ref.: Low)				
Medium	1.3110**	0.1427	0.1764	0.0332
	(0.4431)	(0.4073)	(0.2033)	(0.0992)
High	1.3179**	0.2720	-0.0368	0.4878***
	(0.4946)	(0.4207)	(0.2127)	(0.1046)
Education (ref.: Low) x Age				
Medium x Age	-0.0393**	-0.0022	-0.0053	-0.0046
	(0.0132)	(0.0153)	(0.0101)	(0.0076)
High x Age	-0.0460**	-0.0135	-0.0013	-0.0400***
	(0.0147)	(0.0158)	(0.0105)	(0.0078)
Education (ref.: Low) x Age2				
Medium x Age2	0.0003**	-0.0000	0.0000	0.0000
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
High x Age2	0.0004***	0.0001	-0.0001	0.0005***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Gender (ref.: Male)				
Female	-0.0252***	-0.0176**	-0.0206***	-0.0158**
	(0.0064)	(0.0068)	(0.0058)	(0.0053)
West Germany				
East Germany	0.0367***	0.0839***	0.0942***	0.0758***
	(0.0075)	(0.0080)	(0.0076)	(0.0067)
Social origin (ref.: Low)				
High	-0.0508***	-0.0581***	-0.0557***	-0.0499***
	(0.0082)	(0.0083)	(0.0066)	(0.0066)
Missing	-0.0498***	-0.0249*	-0.0169	-0.0539***
	(0.0106)	(0.0111)	(0.0094)	(0.0102)
GDP growth rate (in %)	0.0200***	0.0183***	0.0163***	0.0133***
	(0.0014)	(0.0015)	(0.0014)	(0.0015)
Growth rate of real disp. income (in %)	-0.0151***	-0.0123***	-0.0109***	-0.0064***
	(0.0013)	(0.0014)	(0.0013)	(0.0013)
Unemployment rate	0.0354***	0.0287***	0.0289***	0.0201***
	(0.0013)	(0.0016)	(0.0015)	(0.0015)
Number of asylum applications/100000	0.0202***	0.0150***	0.0127***	0.0144***
	(0.0021)	(0.0021)	(0.0018)	(0.0016)
Non-German	0.0098***	0.0077***	0.0117***	0.0061***

immigrants/100000				
	(0.0015)	(0.0018)	(0.0016)	(0.0014)
Non-European immigrants/100000	0.0923***	0.0993***	0.0777***	0.0506***
	(0.0047)	(0.0050)	(0.0042)	(0.0037)
Non-Western immigrants/100000	-0.1095***	-0.1090***	-0.0883***	-0.0536***
	(0.0045)	(0.0053)	(0.0043)	(0.0035)
Panel conditioning (ref.: 4th Year in panel or later)				
First year in panel	-0.0211**	-0.0085	0.0018	0.0015
	(0.0080)	(0.0082)	(0.0068)	(0.0060)
Second year in panel	-0.0119*	-0.0231***	-0.0111	-0.0047
	(0.0060)	(0.0066)	(0.0058)	(0.0055)
Third year in panel	-0.0068	-0.0240***	0.0055	-0.0027
	(0.0059)	(0.0064)	(0.0058)	(0.0052)
Interviewer presence (ref.: Interviewer not present)				
Interviewer present	-0.0307***	-0.0253***	-0.0189**	-0.0358***
	(0.0072)	(0.0072)	(0.0062)	(0.0065)
Years since interviewer change (ref.: 4 and more)				
1	-0.0147*	-0.0069	-0.0134*	-0.0197**
	(0.0071)	(0.0078)	(0.0067)	(0.0066)
2	-0.0196**	-0.0066	-0.0108	-0.0097
	(0.0064)	(0.0073)	(0.0064)	(0.0066)
3	-0.0278***	-0.0087	-0.0183**	-0.0216**
	(0.0063)	(0.0073)	(0.0065)	(0.0066)
Constant	-1.4354***	-0.4536	-0.3437	-0.3613***
	(0.3984)	(0.3935)	(0.1945)	(0.0954)
Person years	116646	100210	121133	106929
Number of persons	12944	11297	16825	19338

Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Based on panel robust standard errors. Standard errors in parentheses.
Data source: SOEP v37, own computations.

Supplementary Figure S1. Sensitivity analyses when using inverse probability weighting to account for selective attrition

Note: **A** – Pooled OLS trajectories, control variables include time-constant factors (i.e., gender, living in western or eastern Germany when first observed, and social origin) and time-varying variables (i.e., GDP growth rate, growth rate of real disposable income, unemployment rate, number of asylum applications, number of non-German immigrants, number of non-European immigrants, number of non-Western immigrants, first three years of participation in the survey, interviewer presence, and interviewer change).
B – Pooled OLS effects, control variables are the same as in **A.**
C – Pooled OLS trajectories, control variables include all variables from A and cohort groups + their interactions with educational attainment.
D – FE model, control variables include all time-varying variables.
Source: SOEP v37, own calculations.

Supplementary Figure S2. Sensitivity analyses when excluding controls for period and method effects
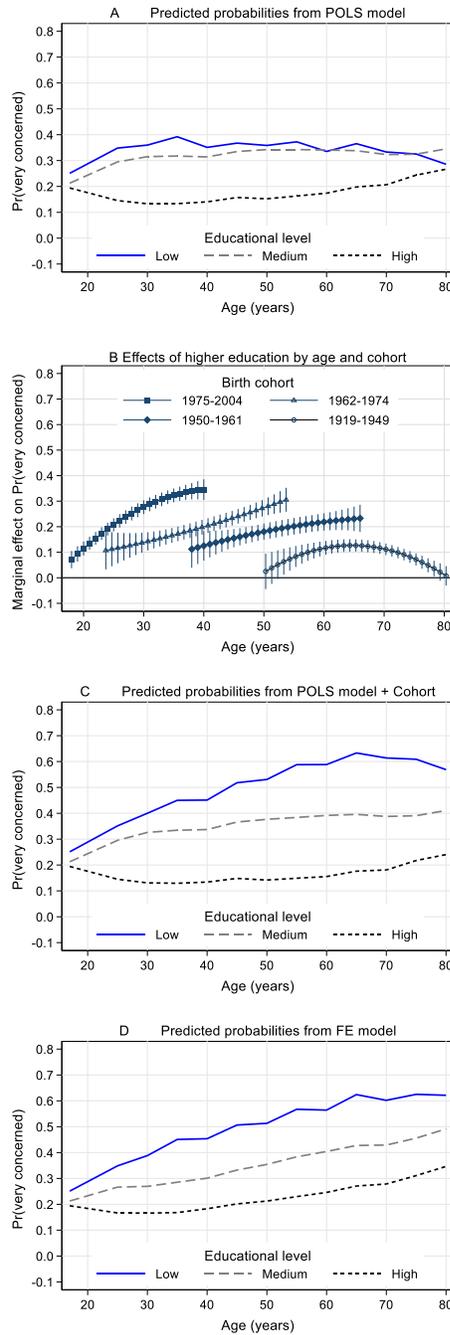
Note: **A** – Pooled OLS trajectories, control variables include time-constant confounding factors (i.e., gender, living in western or eastern Germany when first observed, social origin to capture individual-specific selection variables).
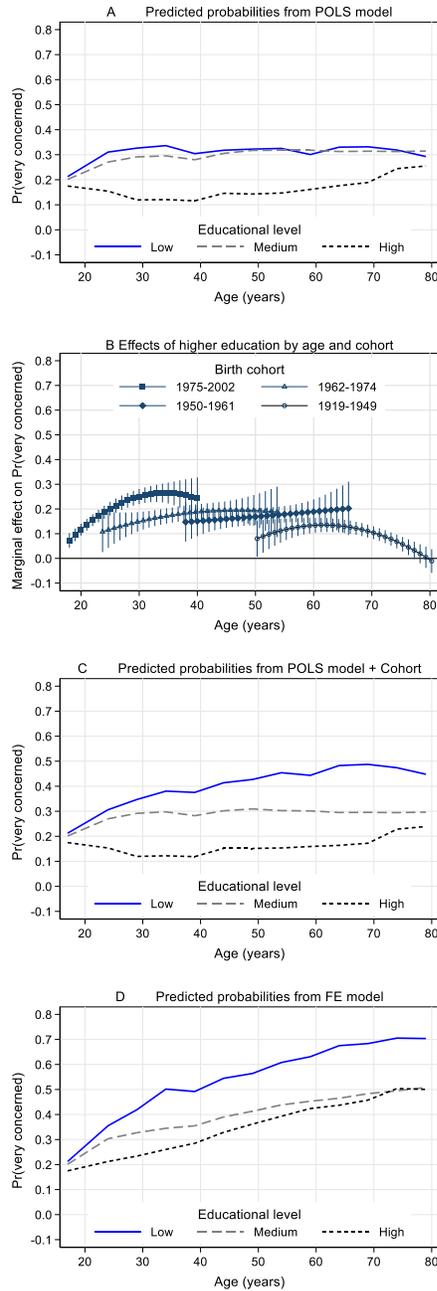**B** – Pooled OLS effects, control variables are the same as in **A.**
C – Pooled OLS trajectories, control variables include all variables from A and cohort groups + interactions with educational attainment.
D – FE model, without control variables.
Source: SOEP v37, own calculations.

Supplementary Figure S3. Sensitivity analyses when the years after 2014, with high issue salience of the migration topic are excluded

Note: **A** – Pooled OLS trajectories, control variables include time-constant factors (i.e., gender, living in western or eastern Germany when first observed, and social origin) and time-varying variables (i.e., GDP growth rate, growth rate of real disposable income, unemployment rate, number of asylum applications, number of non-German immigrants, number of non-European immigrants, number of non-Western immigrants, first three years of participation in the survey, interviewer presence, and interviewer change).
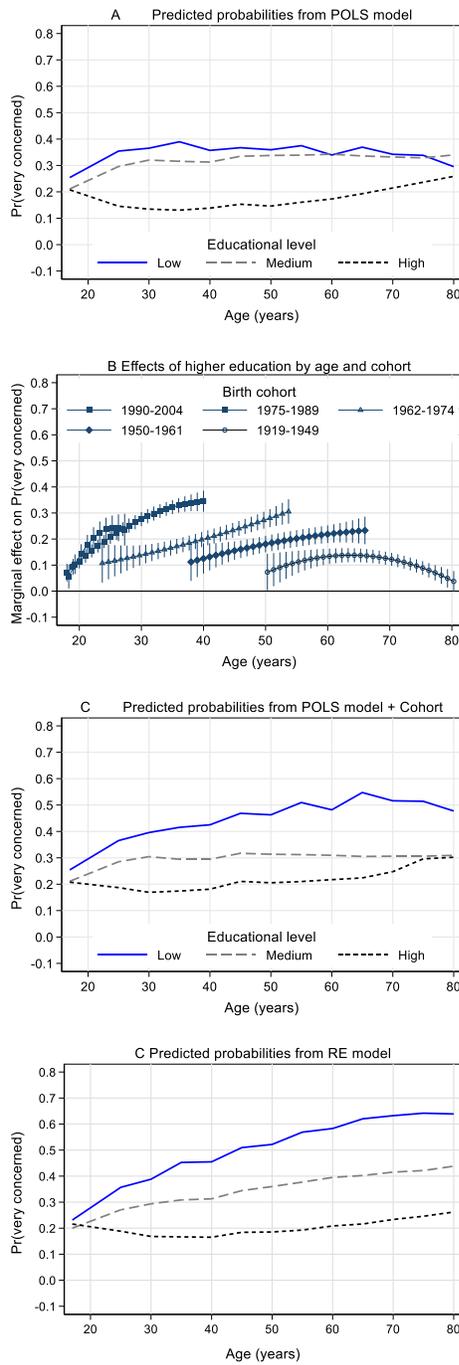**B** – Pooled OLS effects, control variables are the same as in **A.**
C – Pooled OLS trajectories, control variables include all variables from A and cohort groups + their interactions with educational attainment.
D – FE model, control variables include all time-varying variables.
Source: SOEP v37, own calculations.

Supplementary Figure S4. Sensitivity analyses when using alternative cohort groupings

Note: **A** – Pooled OLS trajectories, control variables include time-constant factors (i.e., gender, living in western or eastern Germany when first observed, and social origin) and time-varying variables (i.e., GDP growth rate, growth rate of real disposable income, unemployment rate, number of asylum applications, number of non-German immigrants, number of non-European immigrants, number of non-Western immigrants, first three years of participation in the survey, interviewer presence, and interviewer change).
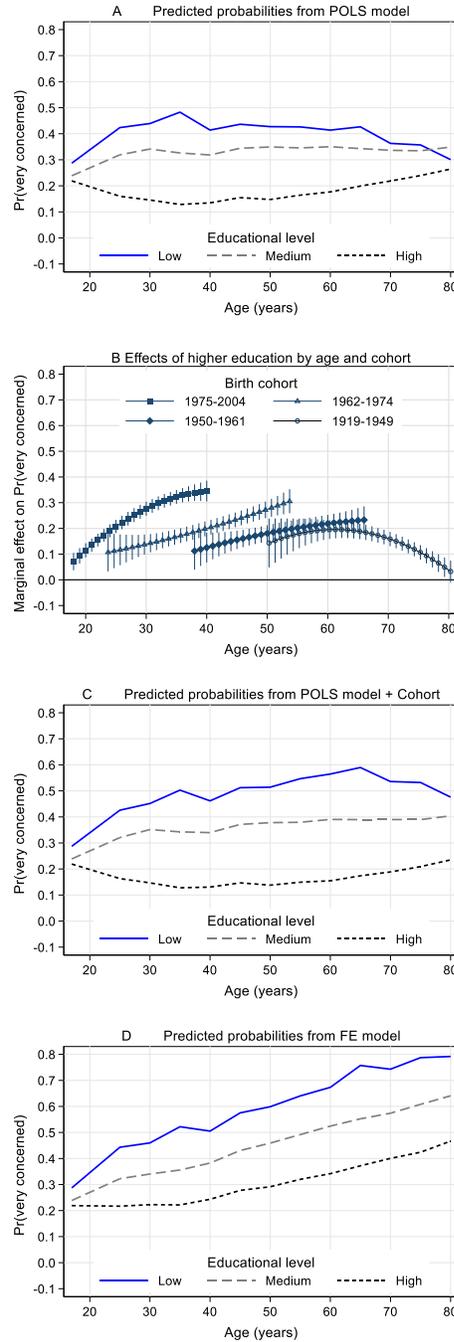**B** – Pooled OLS effects, control variables are the same as in **A.**
C – Pooled OLS trajectories, control variables include all variables from A and cohort groups + their interactions with educational attainment.
D – FE model, control variables include all time-varying variables.
Source: SOEP v37, own calculations.

Supplementary Figure S5. Sensitivity analyses when individuals with migration background are excluded

Note: **A** – Pooled OLS trajectories, control variables include time-constant factors (i.e., gender, living in western or eastern Germany when first observed, and social origin) and time-varying variables (i.e., GDP growth rate, growth rate of real disposable income, unemployment rate, number of asylum applications, number of non-German immigrants, number of non-European immigrants, number of non-Western immigrants, first three years of participation in the survey, interviewer presence, and interviewer change).

B – Pooled OLS effects, control variables are the same as in **A.**

C – Pooled OLS trajectories, control variables include all variables from A and cohort groups + their interactions with educational attainment.

D – FE model, control variables include all time-varying variables.

Source: SOEP v37, own calculations.