

Fixed-Term Work Contracts and
Anti-Immigration Attitudes.
A Novel Test of Ethnic Competition Theory
Supplementary Materials
Socio-Economic Review

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Cross-national analyses

Table A1: Sample size by country and survey round

	ESS round									Total
	1	2	3	4	5	6	7	8	9	
Austria	733	643	728	0	0	0	670	732	871	4,377
Belgium	593	583	600	611	572	591	553	575	569	5,247
Denmark	590	522	501	510	514	497	506	0	0	3,640
Finland	719	689	627	739	0	691	600	573	534	5,172
France	0	0	746	741	594	622	613	603	608	4,527
Germany	900	826	842	851	962	900	978	955	734	7,948
Greece	437	324	0	432	472	0	0	0	0	1,665
Iceland	0	145	0	0	0	175	0	269	0	589
Ireland	546	444	321	372	438	505	489	614	512	4,241
Italy	302	364	0	0	0	219	0	595	556	2,036
Luxembourg	340	563	0	0	0	0	0	0	0	903
Netherlands	755	614	632	598	583	563	545	455	484	5,229
Norway	826	678	677	619	599	643	520	563	524	5,649
Portugal	424	498	567	493	450	462	307	210	273	3,684
Spain	409	473	605	776	567	492	508	544	480	4,854
Sweden	759	719	724	699	493	614	583	505	477	5,573
Switzerland	664	746	581	611	488	495	505	514	524	5,128
United Kingdom	669	478	681	685	647	549	594	524	622	5,449
Total	9,666	9,309	8,832	8,737	7,379	8,018	7,971	8,231	7,768	75,911

Source: European Social Survey (2002–18, [ESS](#), [2002](#), [2004](#), [2006](#), [2008](#), [2010](#), [2012](#), [2014](#), [2016](#), [2018](#)), own calculations.

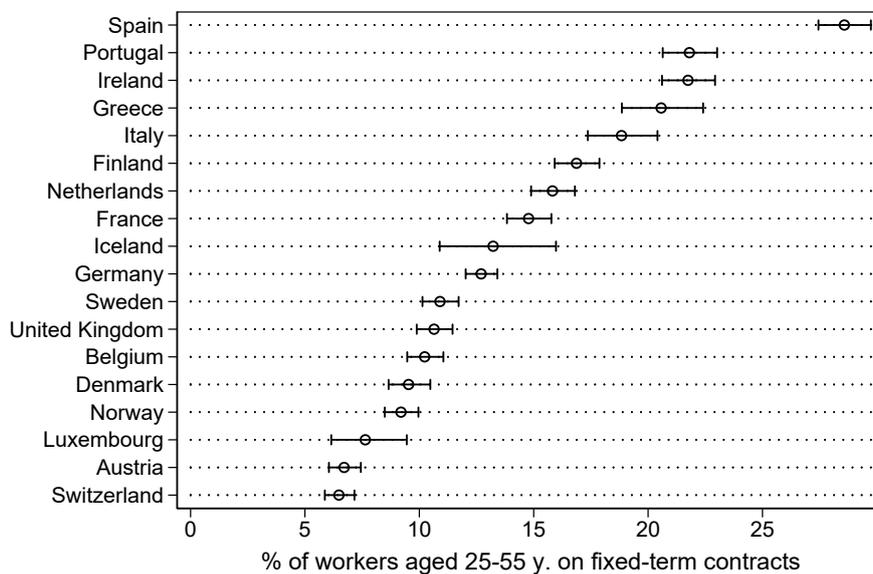


Figure A1: Percentage fixed-term workers aged 25–55 y. by country

Source: European Social Survey (2002–18, ESS, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018), own calculations. Note: Error bars denote 95 per cent confidence intervals.

Table A2: Anti-immigrant attitude regressed on contract type and control variables, interaction models, OLS regression, unstandardized coefficients (standard errors in parentheses).

	Education		% Foreigners in industry		% Unemployed in industry		Three-way	EPL gap	
	Model (1)	Model (2)	Model (1)	Model (2)	Model (1)	Model (2)	Model	Model (1)	Model (2)
Fixed-term contract (<i>Ref.</i> permanent)	-0.04*** (0.01)	0.00 (0.02)	-0.04*** (0.01)	-0.03* (0.02)	-0.04*** (0.01)	-0.04*** (0.01)	-0.03 (0.02)	-0.04*** (0.01)	-0.05*** (0.01)
Education (<i>Ref.</i> low)									
Medium	-0.08*** (0.01)	-0.08*** (0.01)	-0.08*** (0.01)	-0.08*** (0.01)	-0.08*** (0.01)	-0.08*** (0.01)	-0.08*** (0.01)	-0.08*** (0.01)	-0.08*** (0.01)
High	-0.27*** (0.01)	-0.26*** (0.01)	-0.26*** (0.01)	-0.26*** (0.01)	-0.27*** (0.01)	-0.27*** (0.01)	-0.27*** (0.01)	-0.27*** (0.01)	-0.27*** (0.01)
Fixed-term × Medium education		-0.03 (0.03)							
Fixed-term × High education		-0.07** (0.02)							
% foreign-born in industry			-0.00 (0.00)	-0.00 (0.00)			-0.00 (0.00)		
Fixed-term × % foreign-born in industry				-0.00 (0.00)			-0.00 (0.00)		
% unemployed in industry					-0.00*** (0.00)	-0.00*** (0.00)	-0.00 (0.00)		
Fixed-term × % unemployed in industry						0.00 (0.00)	-0.00 (0.00)		
% unemployed × % foreign-born							-0.00 (0.00)		
Fixed-term × % unemployed × % foreign-born							0.00* (0.00)		
EPL gap								0.00 (0.09)	-0.00 (0.09)
Fixed-term × EPL gap									0.02** (0.01)

Female sex (<i>Ref.</i> male)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.05*** (0.01)	0.05*** (0.01)	0.05*** (0.01)	0.04*** (0.01)	0.04*** (0.01)
Foreign-born (<i>Ref.</i> native)	-0.18*** (0.02)								
Age	0.01** (0.00)	0.01** (0.00)	0.01** (0.00)	0.01** (0.00)	0.01* (0.00)	0.01* (0.00)	0.01* (0.00)	0.01** (0.00)	0.01** (0.00)
Age squared	0.00 (0.00)								
145 Occupation FE	Yes								
Country and round FE plus interactions	Yes								
Average outcome (SD)	2.23 (0.75)	2.23 (0.75)	2.23 (0.75)	2.23 (0.75)	2.24 (0.76)	2.24 (0.76)	2.25 (0.76)	2.23 (0.75)	2.23 (0.75)
$N_{\text{respondents}}$ ($N_{\text{countries}}$)	75,911 (18)	75,911 (18)	73,295 (18)	73,295 (18)	70,385 (18)	70,385 (18)	69,021 (18)	74,767 (17)	74,767 (17)

Source: European Social Survey (2002–18, [ESS, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018](#)), own calculations.

Note: Standard errors are cluster-robust at the country-year level. FE: Fixed effects. SD: Standard deviation. EPL: Employment protection legislation. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed). Models (2) are underlying Figure 1, Panels B to E in the main text.

Additional control variables and sample stratification

Table A3 contains additional control variables, namely the number of working hours, marital status, household income, and area of residence, which are not strictly exogenous and might, for some assumed theoretical models, lead to biased estimates of the fixed-term contract–attitudes association. We therefore left them out of the models in the main text. However, in other assumed theoretical models, these variables may confound the fixed-term contract–attitudes association. In Table A3 we show that including these variables in the regression equations from Table 2 leads to substantively similar findings.

Table A4 stratifies the sample in different ways to gauge the robustness of findings. The first two models are stratified by sex: for both men and women, fixed-term contracts are associated with somewhat more positive attitudes towards migrants, and there are no differences between men and women in the size of the association ($\chi^2(1) = .31, p = .58$).

The next three models in Table A4 compare participants in different partnership constellations: those who do not have a partner, single-earning members of couples, and members of dual-earner couples. Arguably, members of dual-earner couples are least likely to be affected by a potential job loss or job downgrading at the end of a fixed-term contract and consequently, contract status should have the smallest effect for this group. Conversely, single-earners in couples should be most financially at risk at the end of a fixed-term contract. Results show, that for all groups, workers on fixed-term contracts are less opposed to immigration than those on permanent contracts, though the relation is not significantly different for single-earners. The differences in the fixed-term contract–attitudes association between partnership status are not significant ($\chi^2(2) = 3.4, p = .18$).

The last column in Table A4 shows the fixed-term contract-attitudes association for the ‘most likely’ case, being low-educated, single-earners in working-class occupations. As job availability for this group is generally low, the possibility that migrants can take up their job comparatively high, and the financial consequences of non-renewal/not finding a new position comparatively large, one would expect a particularly pronounced relation

between contract type and anti-immigration attitudes. However as can be seen from the Table, the coefficient is negative, small and not significantly different from zero.

Table A3: Anti-immigrant attitude regressed on contract type and control variables, OLS regression, unstandardized coefficients including controls for marital status, working hours, household income, and area of residence (standard errors in parentheses).

	Full sample		Education			Social class		
	Model (1)	Model (2)	Low	Medium	High	Working	Intermediate	Salariat
Fixed-term contract (<i>Ref.</i> permanent)	-0.06*** (0.01)	-0.04*** (0.01)	0.01 (0.02)	-0.02 (0.01)	-0.07*** (0.01)	-0.02 (0.01)	-0.05* (0.02)	-0.05*** (0.01)
Female sex (<i>Ref.</i> male)		0.04*** (0.01)	0.07*** (0.02)	0.07*** (0.01)	-0.00 (0.01)	0.06*** (0.01)	0.06*** (0.01)	0.00 (0.01)
Foreign-born (<i>Ref.</i> native)		-0.17*** (0.02)	-0.38*** (0.03)	-0.19*** (0.02)	-0.06*** (0.02)	-0.28*** (0.02)	-0.11*** (0.02)	-0.04** (0.01)
Education (<i>Ref.</i> low)								
Medium		-0.08*** (0.01)				-0.09*** (0.01)	-0.10*** (0.02)	-0.10*** (0.03)
High		-0.25*** (0.01)				-0.27*** (0.02)	-0.29*** (0.02)	-0.25*** (0.03)
No. working hours (/10)		0.01 (0.00)	-0.00 (0.01)	0.01** (0.00)	0.00 (0.00)	0.01 (0.00)	0.01 (0.01)	0.01 (0.01)
Marital status (<i>Ref.</i> unmarried)								
Married		0.03*** (0.01)	0.04* (0.02)	0.03* (0.01)	0.02* (0.01)	0.02 (0.01)	0.03 (0.02)	0.04** (0.01)
Separated/widowed/divorced		0.06*** (0.01)	0.06** (0.02)	0.04** (0.02)	0.06*** (0.01)	0.05** (0.02)	0.03 (0.02)	0.08*** (0.02)
Household income (<i>Ref.</i> poorest quintile)								
Q2		-0.01 (0.01)	0.01 (0.02)	-0.02 (0.02)	0.02 (0.02)	0.00 (0.01)	-0.04 (0.03)	-0.01 (0.02)
Q3		-0.01 (0.01)	0.03 (0.02)	-0.02 (0.02)	0.01 (0.02)	0.02 (0.01)	-0.04 (0.03)	-0.03 (0.02)
Q4		-0.03* (0.01)	-0.01 (0.03)	-0.05*** (0.01)	0.00 (0.02)	-0.02 (0.01)	-0.06* (0.03)	-0.04 (0.02)
Q5 (Richest)		-0.06*** (0.01)	-0.04 (0.03)	-0.07*** (0.02)	-0.04* (0.02)	-0.06** (0.02)	-0.09** (0.03)	-0.07** (0.02)
Missing information		0.07*** (0.02)	0.08** (0.03)	0.05* (0.02)	0.10*** (0.02)	0.08*** (0.02)	0.02 (0.03)	0.07* (0.03)
Area of residence (<i>Ref.</i> town or small city)								
Big city		-0.07*** (0.01)	-0.06* (0.03)	-0.03* (0.01)	-0.10*** (0.01)	-0.05** (0.02)	-0.09*** (0.02)	-0.08*** (0.01)
Suburbs or outskirts		-0.03*** (0.01)	-0.02 (0.02)	-0.04** (0.01)	-0.03* (0.01)	-0.04* (0.01)	-0.03* (0.02)	-0.03** (0.01)
Country village		0.04*** (0.01)	0.02 (0.02)	0.04*** (0.01)	0.04*** (0.01)	0.03* (0.01)	0.05*** (0.02)	0.04*** (0.01)
Farm or home in countryside		0.04** (0.01)	-0.01 (0.04)	0.04* (0.02)	0.05** (0.02)	0.02 (0.02)	0.05 (0.03)	0.05** (0.02)
Age (/10)		0.00 (0.00)	0.01 (0.01)	-0.00 (0.01)	0.00 (0.01)	0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)
Age (/10) squared		0.00 (0.00)	-0.01 (0.01)	-0.00 (0.01)	0.01* (0.01)	-0.01 (0.01)	0.01 (0.01)	0.02** (0.01)
148 Occupation FE	No	Yes						
Country and round FE plus interactions	Yes							
Average outcome (SD)	2.23 (0.75)	2.23 (0.75)	2.54 (0.79)	2.34 (0.73)	2.00 (0.69)	2.42 (0.76)	2.21 (0.73)	2.02 (0.69)
$N_{\text{respondents}}$ ($N_{\text{countries}}$)	75,911 (18)	75,911 (18)	12,240 (18)	31,788 (18)	31,883 (18)	31,799 (18)	15,165 (18)	28,947 (18)

Source: European Social Survey (2002–18, [ESS](#), [2002](#), [2004](#), [2006](#), [2008](#), [2010](#), [2012](#), [2014](#), [2016](#), [2018](#)). Notes: Standard errors are cluster-robust at the country-year level. FE: Fixed effects. SD: Standard deviation. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed)

Table A4: Anti-immigrant attitude regressed on contract type and control variables, unstandardized coefficients (standard errors in parentheses), stratified by family constellation and restricted to the ‘most likely’ case, i.e. lower-educated, single-earner participants in working-class occupations

	Sex		Partner status			Most likely case
	Men	Women	No partner	Single-earner	Dual-earner	
Fixed-term contract (<i>Ref.</i> permanent)	-0.05** (0.01)	-0.03* (0.01)	-0.06*** (0.01)	-0.02 (0.03)	-0.03* (0.01)	-0.01 (0.06)
Foreign-born (<i>Ref.</i> native)	-0.20*** (0.02)	-0.15*** (0.02)	-0.20*** (0.02)	-0.22*** (0.03)	-0.15*** (0.02)	-0.49*** (0.06)
Education (<i>Ref.</i> low)						
Medium	-0.08*** (0.01)	-0.09*** (0.01)	-0.07*** (0.02)	-0.10*** (0.02)	-0.08*** (0.01)	
High	-0.23*** (0.02)	-0.31*** (0.02)	-0.25*** (0.02)	-0.24*** (0.03)	-0.27*** (0.01)	
Age (/10)	0.01 (0.01)	0.02** (0.01)	0.02** (0.01)	0.01 (0.01)	0.01 (0.00)	0.03 (0.02)
Age (/10) squared	0.01 (0.00)	-0.00 (0.00)	-0.00 (0.01)	0.00 (0.01)	0.00 (0.00)	-0.04 (0.03)
Female sex (<i>Ref.</i> male)			0.02* (0.01)	0.09*** (0.02)	0.04*** (0.01)	0.16** (0.06)
148 Occupation FE	Yes	Yes	Yes	Yes	Yes	Yes
Country and round FE plus interactions	Yes	Yes	Yes	Yes	Yes	Yes
Average outcome (SD)	2.23 (0.75)	2.22 (0.76)	2.25 (0.77)	2.30 (0.77)	2.20 (0.74)	2.58 (0.81)
$N_{\text{respondents}}$ ($N_{\text{countries}}$)	38,453 (18)	37,458 (18)	22,162 (18)	9,322 (18)	44,427 (18)	1,940 (18)

Additional comparison groups on the labor market

Analyses shown in the main text compare those on a fixed-term contract to those with a permanent contract. In this section, we compare these key groups with other groups on the labor market, namely those without a work contract, the unemployed—distinguishing by prior contract status—, and the self-employed.

Workers without a contract are more opposed to immigration than those on a fixed-term or a permanent contract, although the difference with the latter is not significant. Workers without a contract are a heterogeneous group consisting of workers in the informal economy, helping family members, and civil servants with high job security. Consequently, the presumed exposure to labor market competition with immigrants varies within the no-contract group, making it difficult to interpret this result as evidence for or against ethnic competition theory.

As shown in Figure A2, the unemployed are more opposed to immigration than those on fixed-term or permanent contracts. This finding is in line with the expectations of ethnic competition theory. Interestingly, the pattern across (prior) contract status—permanent, fixed or none—is similar to that of those currently employed. The self-employed are also more opposed to immigrants than those on fixed-term contracts. Similar to workers without a contract, this group is heterogeneous in its exposure to competition with immigrants, making it difficult to interpret this difference against the backdrop of ethnic competition theory.

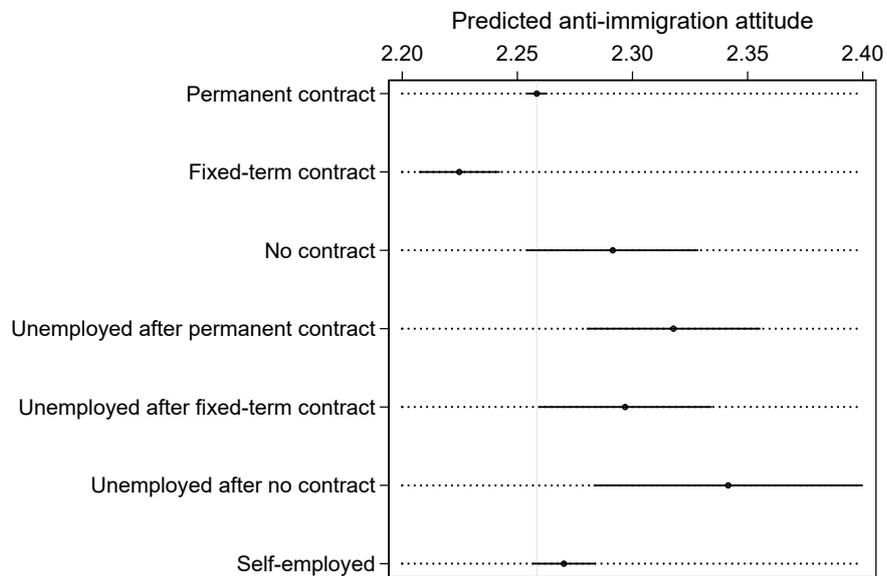


Figure A2: Differences in anti-immigration attitudes between labor market groups

Source: European Social Survey (2002–18, ESS, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018), own calculations. *Notes:* Vertical gray line indicates predicted anti-immigration attitude of those with a permanent contract. Error spikes denote 95 per cent confidence intervals. Based on a model accounting for all control variables of Model (2) of Table 2.

No changes in the fixed-term contract–anti-immigration attitude association over time

One might assume that there are changes in the fixed-term contract–anti-immigration attitude association over time: a fixed-term contract in the early 2000’s might produce a very different effect than in the 2010’s, since unemployment rates declined substantially over this period. To test this, we re-estimated Model (2) of Table 2 with an interaction between survey round and fixed-term contract. Results are shown in Figure A3, which reveals that there is no difference in the size of the gap in anti-immigrant attitude between fixed-term and permanent contracts.

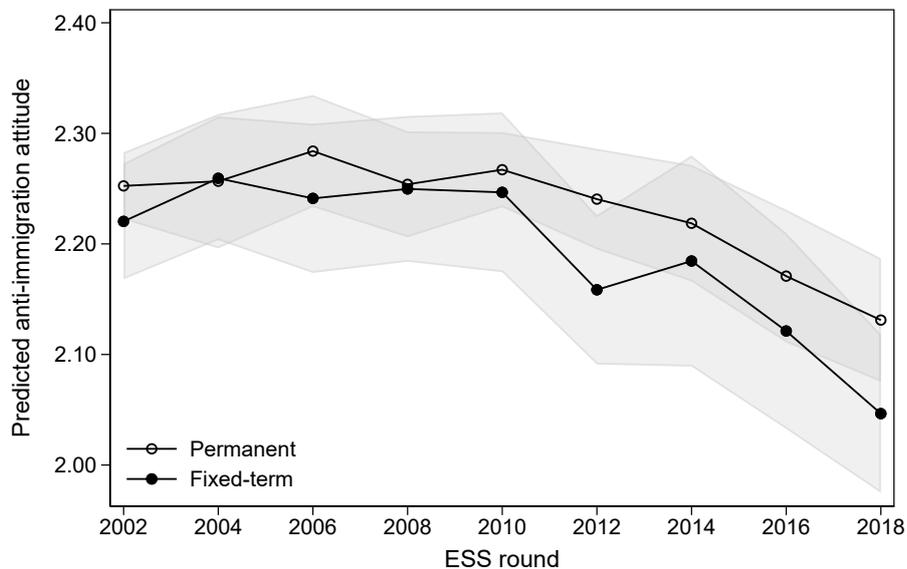


Figure A3: Fixed-term gap in anti-immigration attitude is relatively constant over time

Source: European Social Survey (2002–18, ESS, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018), own calculations. Note: Error bands denote 95 per cent confidence intervals.

Gender and anti-immigration attitude in the ESS

While women are generally known to have a lower anti-immigration attitude than men, Table 2 shows an unexpected positive coefficient for the gender

variable, suggesting that women have a stronger anti-immigration attitude than men. Generally, it can be misleading to interpret the coefficients of control variables in multivariable models, as they will be biased estimates of the causal effects (also known as the ‘Table 2 fallacy,’ [Westreich and Greenland, 2013](#)).

To demonstrate that the direction of the gender association is not because of a coding error, Figure A4 shows the size and direction of the association between gender and anti-immigration attitudes for different model specifications. Model M1 shows the expected gender difference: when controlling only for country and survey round, women have a lower anti-immigration attitude than men. M2 shows that this is by virtue of women’s generally higher education: When comparing men and women of the same educational level, we find no gender differences in anti-immigration attitude. This remains true when we add the remaining control variables from Table 2 to the equation (M3). Once we start comparing men and women in the same occupational group (M4), we see that women have a higher anti-immigrant attitude than men in the same occupational group. This holds true irrespective of the control variables (M5).

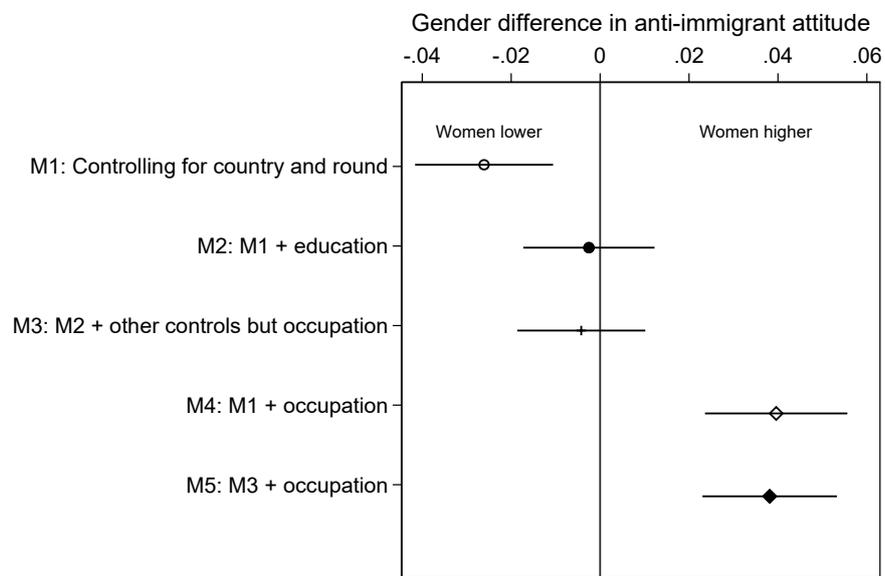


Figure A4: Gender coefficient for anti-immigration attitude in five different model specifications

Source: European Social Survey (2002–18, ESS, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018), own calculations. *Note:* Error bars denote 95 per cent confidence intervals.

Longitudinal analyses

Table A5: Concern about immigration and contract type, interactions with percentage foreigners in industry, fixed-effects LPM panel regression models (robust standard errors in parentheses)

	Contract type		Transition type	
	(1) FE	(2) FE	(3) FE	(4) FE
Fixed-term contract (<i>Ref.</i> permanent)	0.005 (0.005)	0.010 (0.010)		
Percentage foreigners in industry	0.001 (0.000)	0.001 (0.000)	0.001* (0.000)	0.001* (0.000)
Fixed-term \times Percentage foreigners in industry		-0.000 (0.001)		
Contract type transitions (<i>Ref.</i> permanent \rightarrow permanent)				
Permanent \rightarrow fixed			0.001 (0.008)	0.004 (0.016)
Fixed \rightarrow permanent			-0.007 (0.007)	0.000 (0.012)
Fixed \rightarrow fixed			-0.001 (0.008)	0.009 (0.014)
Interactions				
Permanent \rightarrow fixed \times Percentage foreigners in industry				-0.000 (0.001)
Fixed \rightarrow permanent \times Percentage foreigners in industry				-0.001 (0.001)
Fixed \rightarrow fixed \times Percentage foreigners in industry				-0.001 (0.001)
Age	-0.007** (0.003)	-0.007** (0.003)	-0.006* (0.003)	-0.006* (0.003)
Age squared	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)
Education (<i>Ref.</i> low)				
Medium	0.030 (0.018)	0.030 (0.018)	-0.021 (0.045)	-0.021 (0.045)
High	0.036 (0.020)	0.036 (0.020)	-0.024 (0.046)	-0.024 (0.046)
Intercept	0.362*** (0.068)	0.359*** (0.068)	0.341*** (0.083)	0.334*** (0.083)

110 Occupation FE included	Yes	Yes	Yes	Yes
Year FE included	Yes	Yes	Yes	Yes
$N_{\text{observations}}$	126,334	126,334	104,405	104,405
$N_{\text{individuals}}$	28,443	28,443	22,346	22,346

Source: German Socio-Economic Panel (GSOEP, 1999-2015, [Schupp et al., 2017](#)), own calculations. *Notes:* FE: Fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed). All models include year fixed effects (not shown). Predictions based on Models (2) and (4) shown in Figure 4 in the main text.

Table A6: Concern about immigration and contract type, interactions with percentage unemployed in industry, fixed-effects LPM panel regression models (robust standard errors in parentheses)

	Contract type		Transition type	
	(1) FE	(2) FE	(3) FE	(4) FE
Fixed-term contract (<i>Ref.</i> permanent)	0.005 (0.005)	0.006 (0.006)		
Percentage unemployed in industry	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)
Fixed-term \times Percentage unemployed in industry		-0.001 (0.002)		
Contract type transitions (<i>Ref.</i> permanent \rightarrow permanent)				
Permanent \rightarrow fixed			0.001 (0.008)	-0.001 (0.011)
Fixed \rightarrow permanent			-0.007 (0.007)	-0.005 (0.009)
Fixed \rightarrow fixed			-0.001 (0.008)	0.002 (0.009)
Interactions				
Permanent \rightarrow fixed \times % unemployed in industry				0.001 (0.005)
Fixed \rightarrow permanent \times % unemployed in industry				-0.002 (0.004)
Fixed \rightarrow fixed \times % unemployed in industry				-0.002 (0.003)
Age	-0.007* (0.003)	-0.007* (0.003)	-0.006* (0.003)	-0.006* (0.003)
Age squared	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)
Education (<i>Ref.</i> low)				
Medium	0.030 (0.018)	0.030 (0.018)	-0.022 (0.045)	-0.022 (0.045)
High	0.036 (0.020)	0.036 (0.020)	-0.025 (0.046)	-0.025 (0.046)
Intercept	0.363*** (0.068)	0.362*** (0.068)	0.339*** (0.083)	0.338*** (0.083)
110 Occupation FE included	Yes	Yes	Yes	Yes

Year FE included	Yes	Yes	Yes	Yes
$N_{\text{observations}}$	126,334	126,334	104,405	104,405
$N_{\text{individuals}}$	28,443	28,443	22,346	22,346

Source: German Socio-Economic Panel (GSOEP, 1999-2015, [Schupp et al., 2017](#)), own calculations. *Notes:* FE: Fixed effects. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed). All models include year fixed effects (not shown). Predictions based on Models (2) and (4) shown in Figure 4 in the main text.

Additional control variables

Table A7: Concern about immigration and contract type, random- and fixed-effects LPM panel regression models (robust standard errors in parentheses), additional controls for working hours, household income, and marital status

	Contract type				Transition type	
	RE	RE	FE	FE	FE	FE
Fixed-term contract (<i>Ref.</i> permanent)	-0.000 (0.004)	0.010* (0.004)	0.007 (0.005)	0.008 (0.005)		
Contract type transitions (<i>Ref.</i> permanent → permanent)						
Permanent → fixed					0.007 (0.008)	0.007 (0.008)
Fixed → permanent					-0.005 (0.006)	-0.006 (0.006)
Fixed → fixed					0.001 (0.008)	-0.000 (0.008)
Female (<i>Ref.</i> male)		0.010* (0.005)				
Foreign-born (<i>Ref.</i> native)		-0.121*** (0.005)				
Age		-0.000 (0.002)		-0.005 (0.003)		-0.004 (0.003)
Age squared		0.000 (0.000)		0.000* (0.000)		0.000* (0.000)
No. working hours		0.012*** (0.001)		0.006** (0.002)		0.007*** (0.002)
Household income (<i>Ref.</i> poorest quintile)						
Q2		-0.005 (0.006)		-0.006 (0.007)		-0.008 (0.008)
Q3		0.003 (0.006)		0.006 (0.008)		0.003 (0.009)
Q4		-0.006 (0.006)		0.010 (0.008)		0.009 (0.009)
Q5 (richest)		-0.029*** (0.007)		0.005 (0.008)		0.004 (0.009)
Missing information		0.009 (0.008)		0.010 (0.010)		0.010 (0.011)
Education (<i>Ref.</i> low)						
Medium		-0.029*** (0.007)		0.030 (0.017)		-0.033 (0.042)
High		-0.115*** (0.008)		0.036 (0.020)		-0.035 (0.042)
Marital status (<i>Ref.</i> unmarried)						
Married		0.005 (0.005)		-0.018* (0.008)		-0.021* (0.009)
Divorced/widowed		0.010 (0.007)		-0.020 (0.012)		-0.024 (0.013)
Intercept	0.317*** (0.006)	0.326*** (0.046)	0.301*** (0.006)	0.284*** (0.068)	0.272*** (0.006)	0.268** (0.082)
110 Occupation FE	No	Yes	No	Yes	No	Yes
Year FE included	Yes	Yes	Yes	Yes	Yes	Yes
$N_{\text{observations}}$	130,498	130,498	130,498	130,498	107,985	107,985
$N_{\text{individuals}}$	29,576	29,576	29,576	29,576	23,411	23,411

Source: German Socio-Economic Panel (GSOEP, 1999–2015, [Schupp et al., 2017](#)), own calculations. Notes: * p < 0.05, ** p < 0.01, *** p < 0.001. (two-tailed)

Additional comparison groups on the labor market

Analyses shown in the main text compare those on a fixed-term contract to those with a permanent contract. Here, we compare those key groups with other groups on the labor market, namely those without a work contract, the unemployed, and the self-employed. Those without a work contract are a heterogeneous group consisting of workers in the informal economy, helping family members, civil servants with very high job security, and workers who are protected by the relatively stringent labor legislation in Germany.

Figure A5 shows that workers without a contract are slightly more concerned about immigration than those on permanent contracts, yet this difference is not significantly different from zero. Self-employed are very slightly less opposed than those on permanent contracts, but the difference is again not significant. As both workers without contracts and the self-employed are very heterogeneous groups, it is unclear whether they on the whole face more or less competition than people on fixed-term and permanent contracts. This raises doubt about whether the coefficients vs. permanent contract for these groups should be interpreted as support for ethnic competition theory or not.

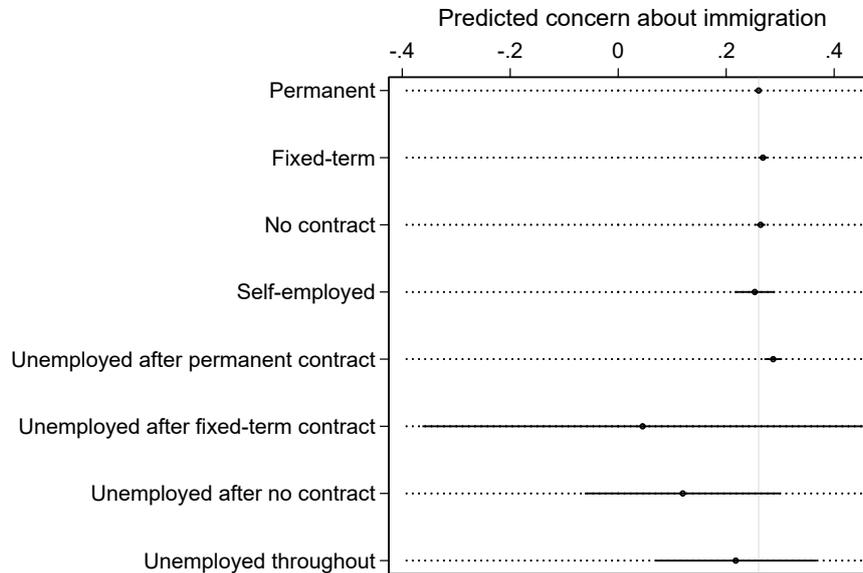


Figure A5: Differences in concern about immigration between labor market groups

Source: German Socio-Economic Panel (GSOEP, 1999-2015, Schupp *et al.*, 2017), own calculations. Notes: Vertical gray line indicates the predicted concern about immigration for workers with permanent contracts. Error spikes denote 95 per cent confidence intervals. Based on a fixed effects model accounting for all control variables of Model (2) of Table 2.

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