Online Appendix
"Did Austerity Cause Brexit?"

For Online Publication

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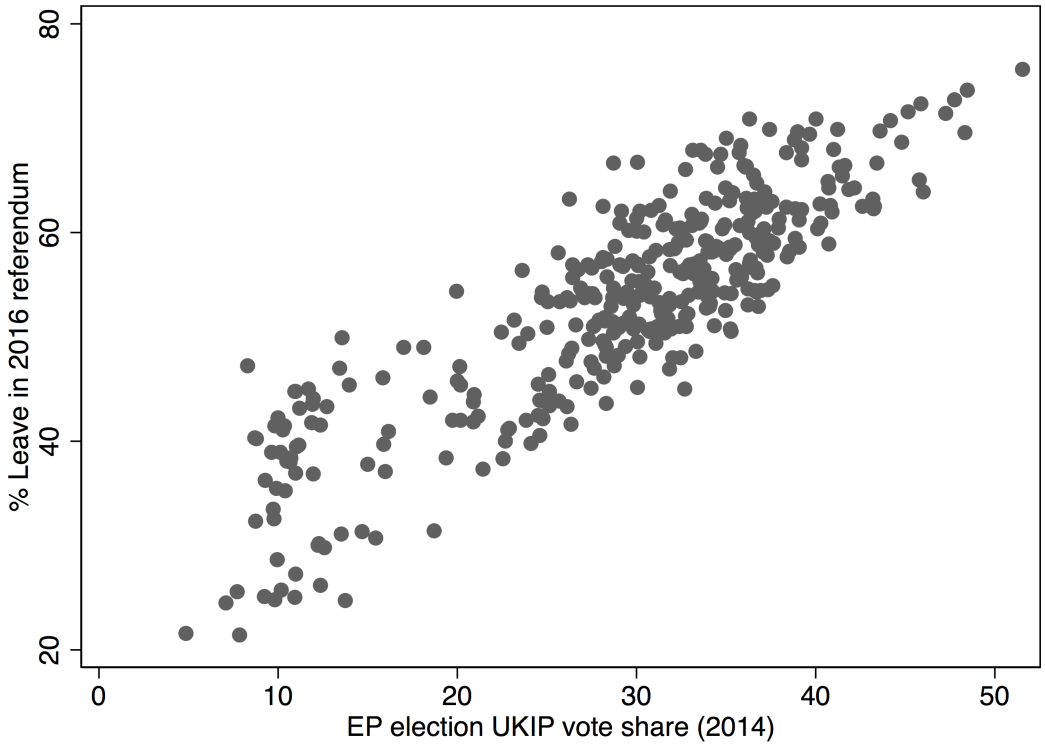
This appendix is subdivided into three sections. Section A presents further robustness checks and additional results as figures or tables that were omitted from the main paper due to space constraints. These results are directly referred to in the main text and discussed in the main body or in footnotes. Section B presents further descriptions of the underlying data as well as additional background materials. The relevant sections are referred to in the main text. Section C presents a set of auxiliary results only indirectly referred to in the main text, they are discussed in detail in this appendix section.

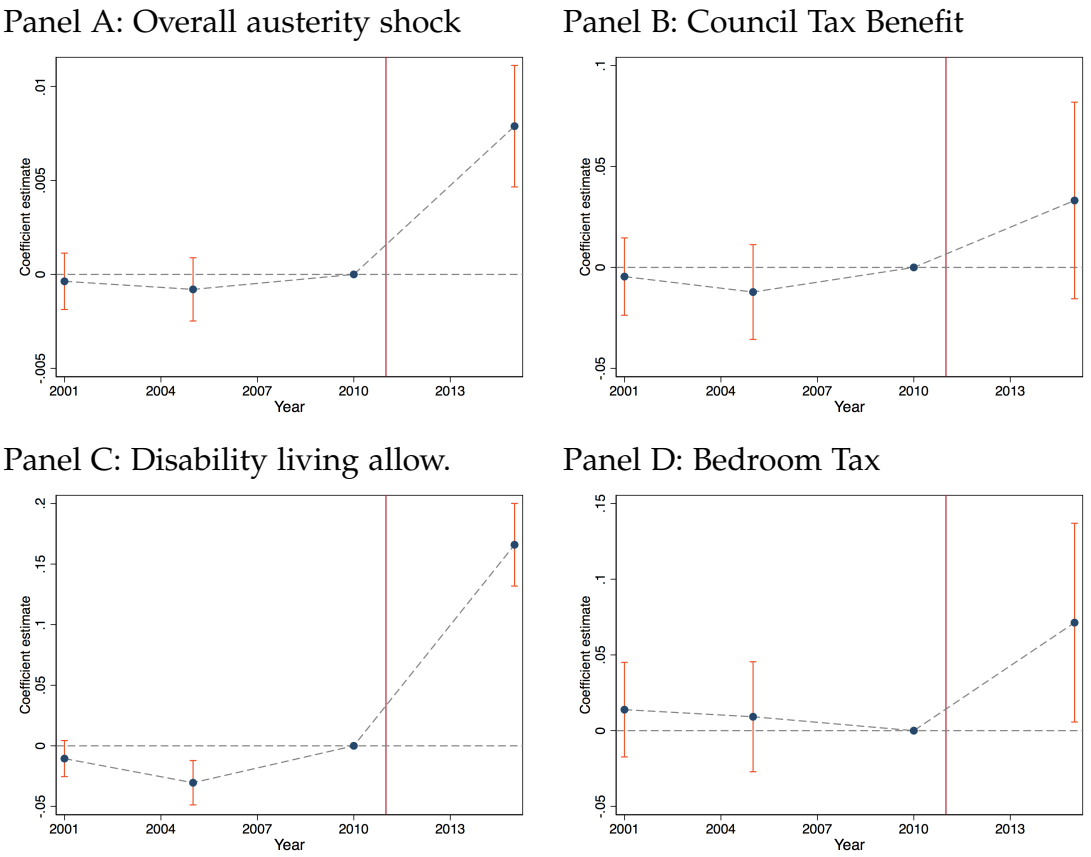
A Further Robustness Checks and Additional Results

Figure A1: UKIP Election Result in 2014 EP elections and EU referendum vote leave.



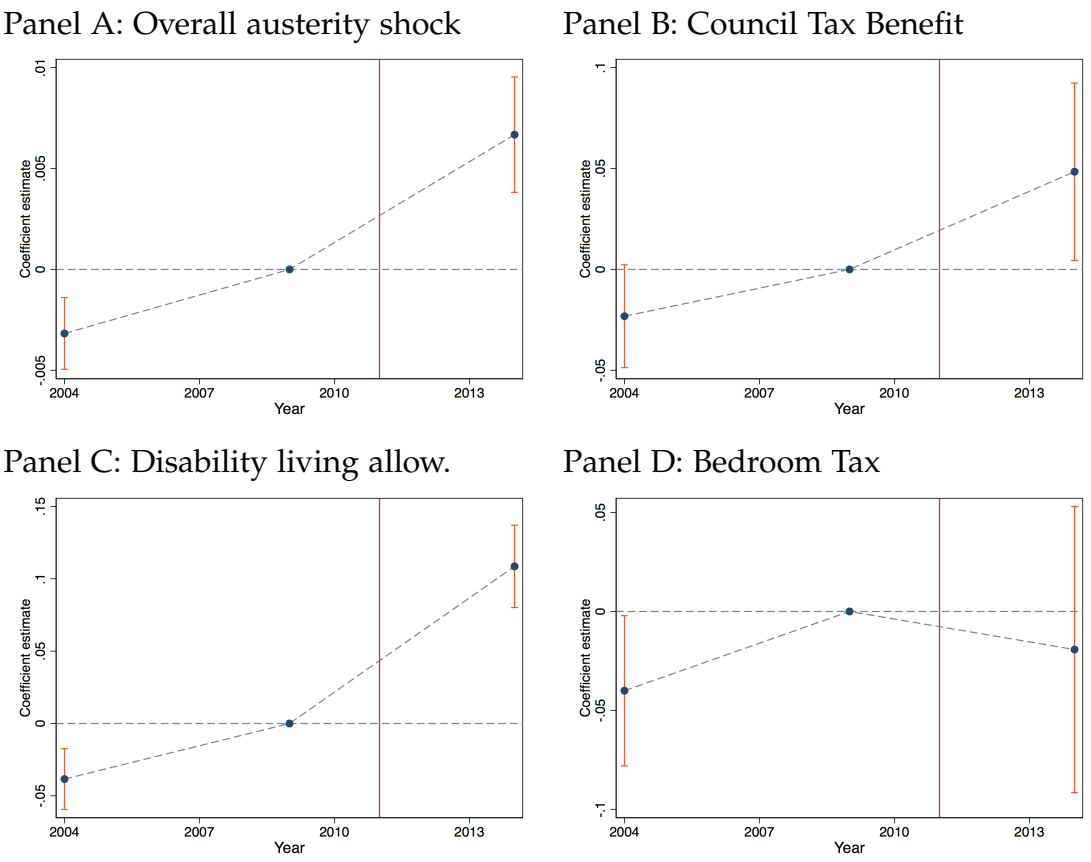
Notes: This figure is reproduced from Appendix Figure A2 in (Becker et al., 2017). The R-squared of a univariate cross-sectional regression of support for Leave and UKIP vote share in the 2014 elections is 75%, and the point estimate is a near straight line with an intercept of 25 percentage points, suggesting that UKIP EP vote share plus 25% does a reasonably good job predicting the EU referendum vote share for Leave.

Figure A2: Non-parametric effect of austerity on support for UKIP overall and by individual measures studying *Westminster elections*.



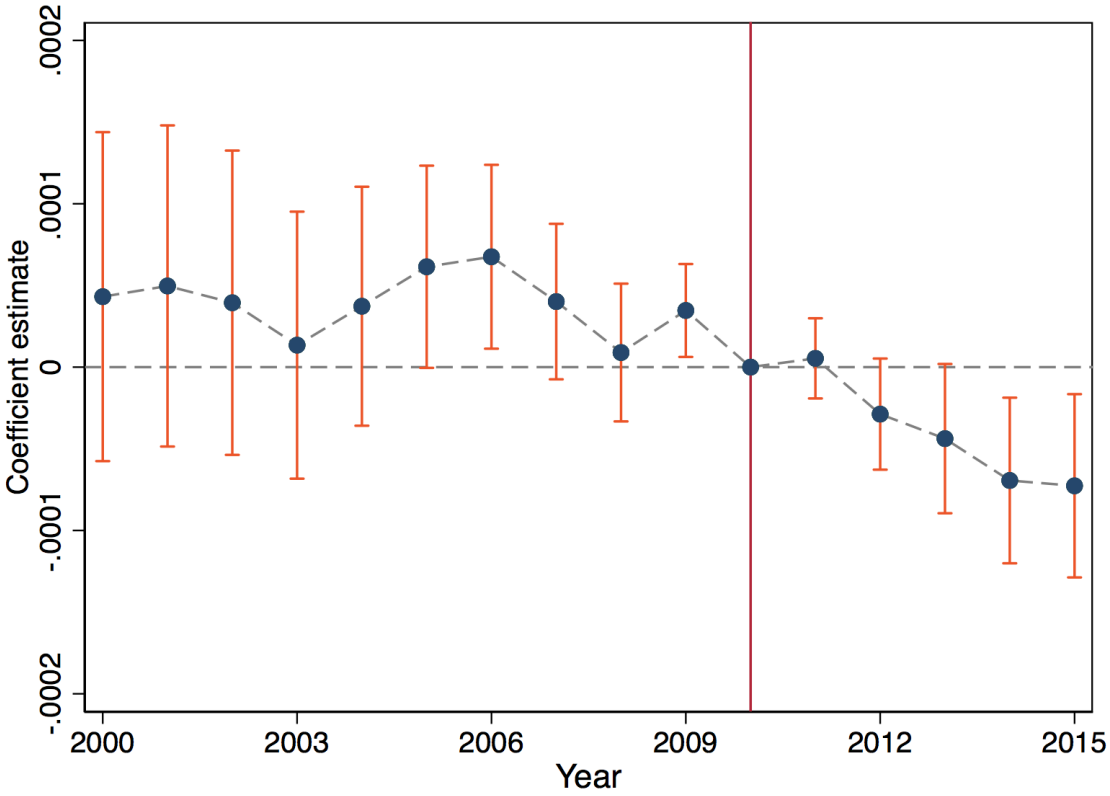
Notes: The dependent variable is the percentage of votes for UKIP in Westminster elections across the 570 harmonized constituencies in the 2001, 2005, 2010 and 2015 Westminster elections. The graph plots point estimates of the interaction between the simulated incidence of the austerity measures and a set of year fixed effects with 2010 as omitted year. All regression include constituency fixed effects and NUTS1 region by year fixed effects. Standard errors are clustered at the constituency level with 90% confidence bands indicated.

Figure A3: Non-parametric effect of austerity on support for UKIP overall and by individual measures studying *European elections*.



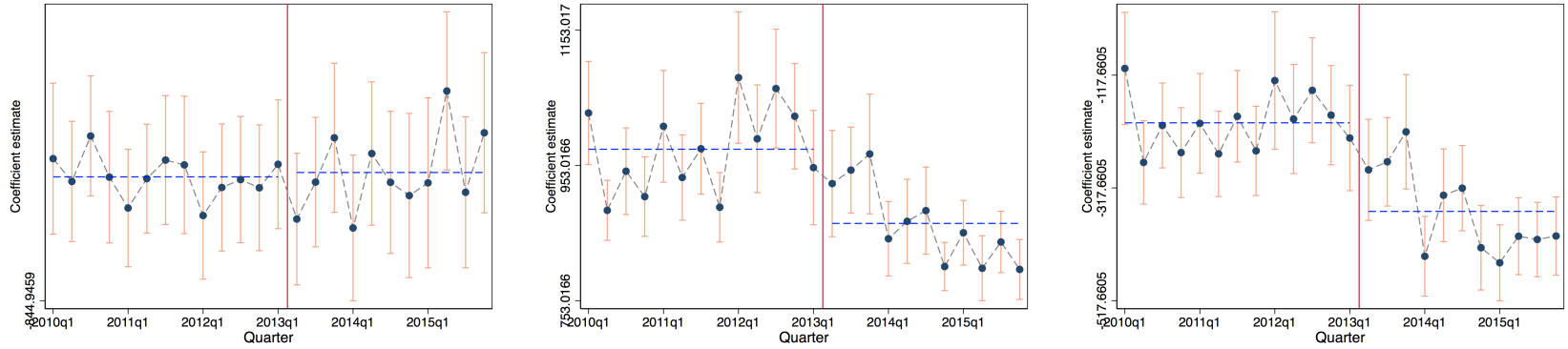
Notes: The dependent variable is the percentage of votes for UKIP in European Parliamentary elections of 2004, 2009 and 2014 at the district level. The graph plots point estimates of the interaction between the simulated incidence of the austerity measures and a set of year fixed effects with 2009 being the omitted year. All regression include district fixed effects and NUTS1 region by year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Figure A4: Effect of Austerity on Local Area Gross Value Added per capita



Notes: The dependent variable is the log value of the gross value added per working age adult in a local authority area between 2000 to 2015. The graph plots point estimates of the interaction between the overall simulated local authority area austerity incidence and a set of year fixed effects. All regression include local authority district fixed effects and NUTS1 region by year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

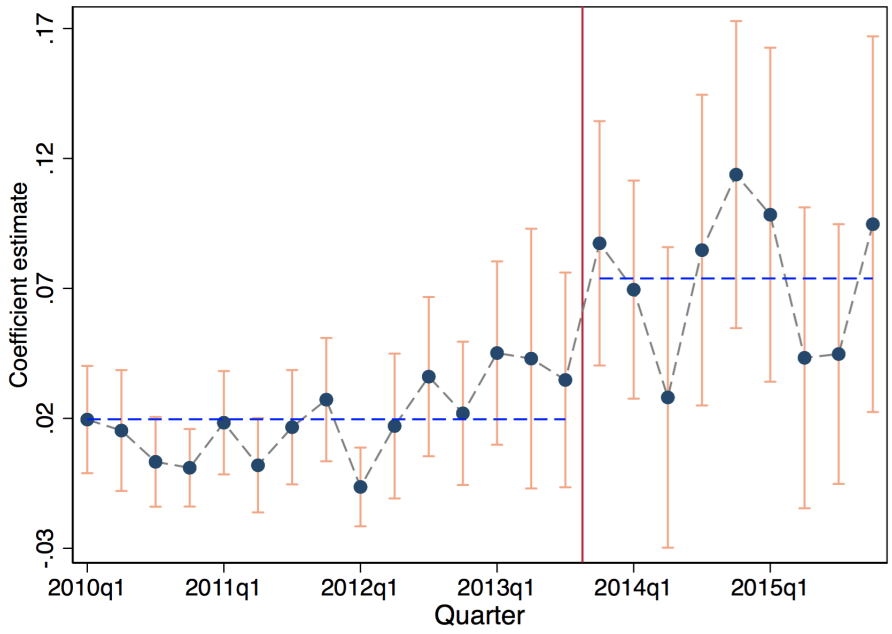
Figure A5: Evolution of labor, benefit and gross income for individuals affected by the council tax benefit abolishment



Labor income | Benefit income | Gross income

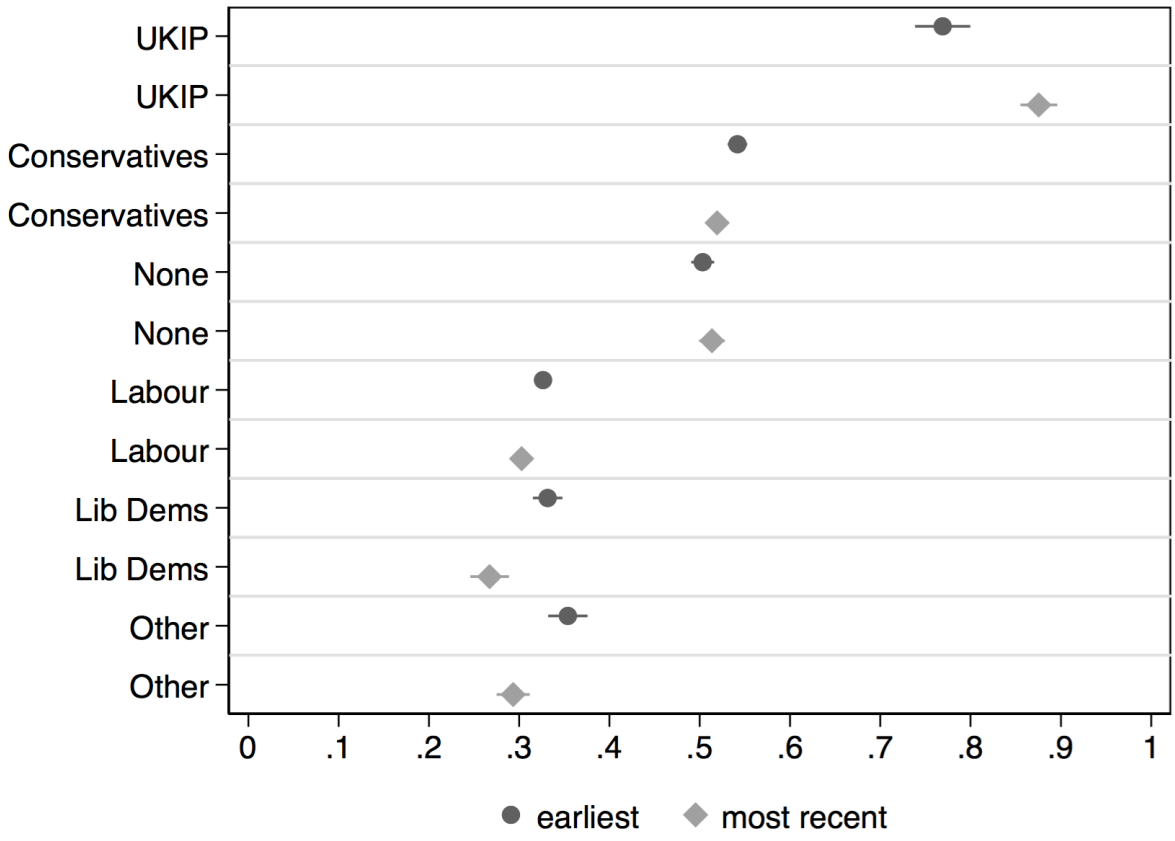
Notes: The dependent variable is the monthly labor income on the left, the monthly social benefit income in the center and gross income in the right. Estimated coefficients capture interaction between whether an individual has always received council tax benefit. The vertical line indicates the time from which council tax benefit was abolished and those previously claiming benefits were send a council tax demand letter. Regressions absorb local authority and region by time effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Figure A6: Impact of "disability living allowance" conversion starting October 28 2013 on support for UKIP



Notes: Figure plots event studies studying the impact of the abolishment of council tax benefit on previous recipients. The dependent variable in the left panel is a dummy variable indicating whether the respondent revealed a political preference in support of UKIP. The dependent panel in the right hand side is an indicator variable indicating whether the respondent is behind with his or her council tax payments. The regressions control for counil by survey wave by time fixed effects. The graph plots point estimates of the interaction between an indicator variable indicating whether the individual respondents received council tax benefit at each point in time in the three years prior to the reform in which they were observed in the sample interacted with an indicator for the survey quarter. Standard errors are clustered at the district level with 90% confidence bands indicated.

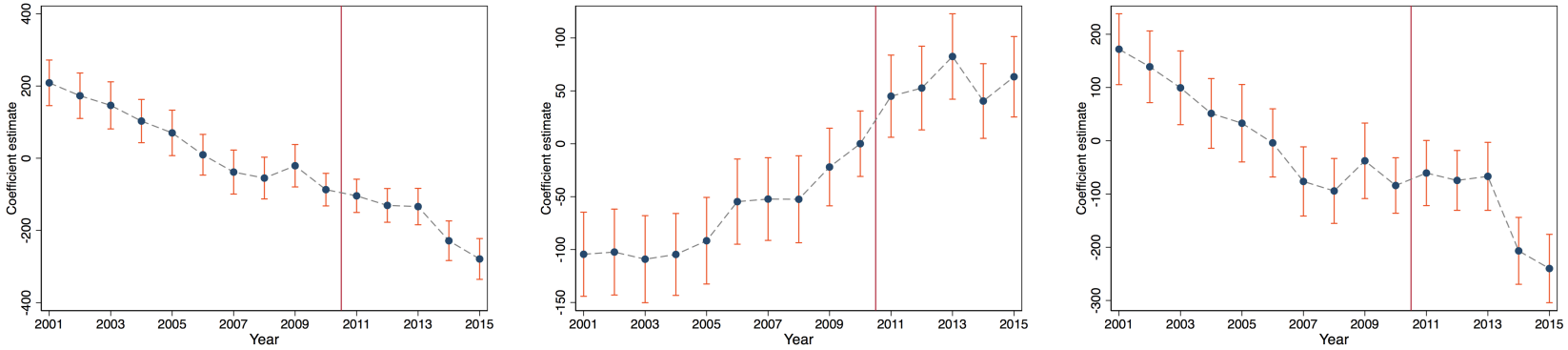
Figure A7: Support for Leave in EU referendum by respondent's political party preference



Notes: The plot presents sample averages of Leave support in Wave 8 of the USOC survey by the respondents expressed political support for UKIP, the Conservatives, Labour or the Liberal Democrats at the earliest instance and the latest instance.

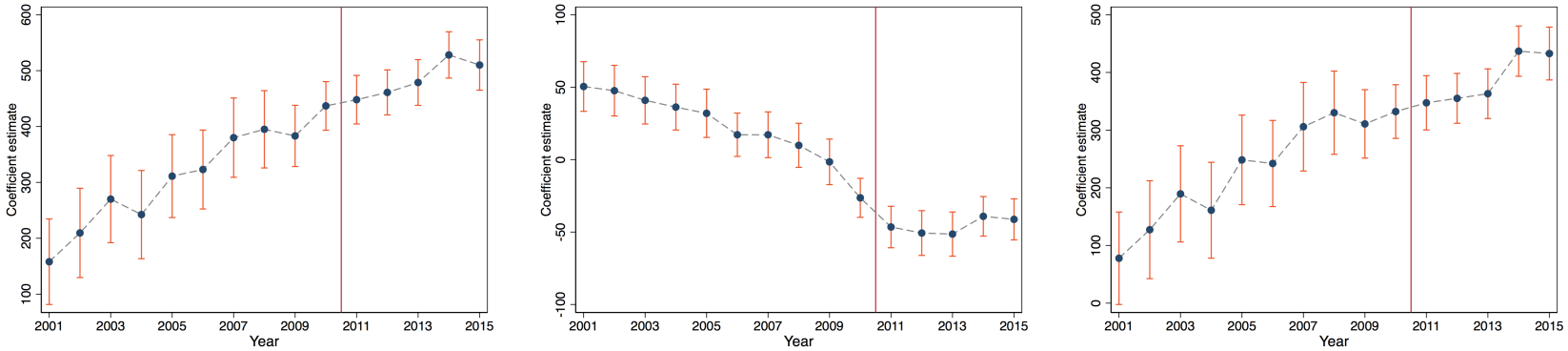
Figure A8: Excluding individuals ever having worked in manufacturing, mining or agriculture: Non-parametric estimates capturing the evolution of labor and benefit income *within-individuals* over time for respondents with low- and high levels of human capital

***Panel A:* Evolution of benefit and labor income for individuals with no qualifications**



Labor income | Benefit income | Gross income

***Panel B:* Evolution of benefit and labor income for individuals with university degree**



Labor income | Benefit income | Gross income

Notes: The dependent variable is the monthly gross labor income on the left, and the monthly benefit income on the right. The population is restricted to the sample of BHPS and USOC respondents that are not retired and that have never worked in manufacturing, mining or agriculture. The BHPS survey waves 11-18 start in 2001 and end in 2009, while the larger USOC survey starts in 2009 and includes some, but not all of the former BHPS from Wave 2 onwards. The graph plots point estimates of the interaction between the qualification status of respondents (having no qualifications in top row, versus having a university degree in bottom row) on monthly labor or benefit income. All regression include individual respondent fixed effects and local authority by survey wave by time fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Table A1: Summary statistics of main variables used

Panel A: District level			
Local election % for UKIP	4.454	7.571	3290
EL % UKIP	21.118	9.397	1140
% with No qual (2001)	0.286	0.062	346
% working in Routine occ (2001)	0.102	0.030	346
% working in Retail (2001)	0.169	0.021	346
% working in Manuf (2001)	0.154	0.054	346
Total Austerity Impact	447.122	121.110	378
Tax Credit Cuts	87.971	23.563	379
Child Benefit Cut	71.517	9.425	379
Council Tax Benefit Cut	7.211	7.810	379
Disability Living Allowance	36.570	12.204	379
Bedroom Tax	10.813	5.597	379
Panel B: Individual level			
$T_{i,CTB}$	0.064	0.244	348177
$T_{i,DLA}$	0.018	0.135	348177
$T_{i,BTX}$	0.057	0.232	325770
support UKIP	0.047	0.212	252642
support Conservatives	0.259	0.438	252642
support Labour	0.351	0.477	252642
support Lib-Dems	0.082	0.274	252642
support Neither party	0.193	0.395	252642
Like/Dislike Conservatives	3.530	2.620	75077
Like/Dislike Labour	4.093	2.636	75193
Like/Dislike LibDems	3.067	2.282	73783
Public officals dont care	3.367	0.977	75547
No say in what govt does	3.338	1.045	75897
Vote doesnt make diff	3.294	3.215	74947

Table A2: Robustness of the Impact of different austerity measures on support for UKIP across Local, European and Westminster elections: Adding district specific linear time trends

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
UKIP vote share in...	Overall	TC	CB	CTB	DLA	BTX
Panel A: Local						
$\mathbb{1}$(Year>2010) × Austerity	0.005	0.036	0.094	0.051	0.052	0.040
	(0.002)	(0.012)	(0.038)	(0.034)	(0.027)	(0.069)
Avg effect	2.093	3.209	6.733	.3678	1.900	.4364
SD	.5664	.8585	.8862	.3978	.6335	.2256
Mean of DV	4.49	4.49	4.49	4.49	4.49	4.49
Local authority districts	345	346	346	346	346	346
Observations	3260	3263	3263	3263	3263	3263
Panel B: European						
$\mathbb{1}$(Year>2010) × Austerity	0.004	0.030	0.015	0.025	0.070	-0.059
	(0.003)	(0.014)	(0.035)	(0.038)	(0.027)	(0.058)
Avg effect	1.566	2.676	1.103	.1818	2.566	-.641
SD	.4237	.7158	.1453	.1967	.8553	.3313
Mean of DV	21.1	21.1	21.1	21.1	21.1	21.1
Local authority districts	378	379	379	379	379	379
Observations	1134	1137	1137	1137	1137	1137
Panel C: Westminster						
$\mathbb{1}$(Year>2010) × Austerity	0.010	0.081	-0.016	0.073	0.164	0.118
	(0.002)	(0.010)	(0.031)	(0.035)	(0.024)	(0.051)
Avg effect	4.573	7.534	-1.13	.6620	6.136	1.413
SD	1.130	1.847	.1413	.5913	1.898	.6906
Mean of DV	6.03	6.03	6.03	6.03	6.03	6.03
Harmonized Constituencies	566	566	566	566	566	566
Observations	2047	2047	2047	2047	2047	2047
Avg Loss per working age adult	447.1	87.97	71.52	7.21	36.57	10.81
Affected HH. in 1000s		4507	7601	2436	499	660
Correlation with...						
No qualification share		.75	.17	.51	.77	.58
Routine job share		.6	.12	.27	.62	.43
Retail sector share		.35	.28	.02	.21	.08
Manufacturing sector share		.3	.11	-.03	.37	.24

Notes: Table reports results from a panel OLS regressions with the dependent variable being UKIP's vote share in English and Welsh Local Elections from 2000 to 2015 in Panel A, European Elections in Panel B and Westminster Elections in Panel C. The regressions control for local authority district fixed effects and local authority district-specific linear trends in Panels A and B, and harmonized constituency level and constituency-specific linear trends in panel C as well as region by year fixed effects throughout. Standard errors clustered at the Local Government Authority District Level in Panel A and B and at the Harmonized Constituency level in Panel C, with standard errors presented in parentheses.

Table A3: The Impact of different austerity on local area gross value added by sector with spending multiplier estimates

Sector	(1) Overall	(2) Retail & Distr.	(3) Public admin	(4) Manuf.	(5) Business Serv.	(6) Construction	(7) Financial Serv.
$\mathbb{1}$(Year>2010) $\times$ Total Austerity Impact	-0.078	-0.114	0.037	-0.367	-0.103	-0.076	-0.007
	(0.039)	(0.040)	(0.039)	(0.105)	(0.076)	(0.087)	(0.139)
Sector GVA	30.89	4.28	3.82	2.44	4.33	1.44	7.89
Implied multiplier effect	-2.4	-.49	.14	-.9	-.45	-.11	-.05
	(1.21)	(.17)	(.15)	(.26)	(.33)	(.12)	(1.1)
Local election districts	378	378	378	378	378	378	378
Observations	6048	6048	6048	6048	6048	6048	6048

Notes: Table reports results from a panel OLS regressions with local authority area and region by year fixed effects. The dependent variable is the log value of the sector specific gross value added measured in £ 1000 per working age adult in a local authority area between 2000 to 2015. The multiplier effect is the size of the contraction in gross value added due to a one pound contraction transfer-income due to the austerity-induced welfare reforms studied in Section 4. Standard errors clustered at the Local Government Authority District Level are presented in parentheses.

Table A4: Austerity, UKIP and support for Leave in 2016: Exploring changes in UKIP support across Local, European and Westminster elections

Dependent variable: Leave vote share in 2016	(1)	(2)	(3)
Panel A: Local Elections			
Austerity	0.029		0.016
	(0.004)		(0.004)
$\Delta UKIP$		0.912	0.824
		(0.070)	(0.080)
Mean of DV	54.6	54.6	54.6
Observations	322	322	322
Panel B: European Elections			
Austerity	0.028		0.016
	(0.004)		(0.003)
$\Delta UKIP$		1.868	1.754
		(0.090)	(0.099)
Mean of DV	53.2	53.2	53.2
Observations	378	378	378
Panel C: Westminster elections			
Austerity	0.021		0.002
	(0.004)		(0.003)
$\Delta UKIP$		1.704	1.691
		(0.089)	(0.093)
Mean of DV	53.8	53.8	53.8
Observations	528	528	528

Notes: The dependent variable throughout is a measure of Leave support measured at the district level in Panel A and B, at the constituency level using the estimates constructed by Hanretty (2017) in Panel C. Austerity refers to the main austerity shock measure used in Section 4. Δ UKIP in Panel A measures the change in support for UKIP between the 2009 and 2014 EP elections, the change in support for UKIP between the 2009-2012 and 2013-2015 time windows in local elections in Panel B. In Panel C, it measures the change in support for UKIP between 2010 and 2015 Westminster elections. All regressions control for region fixed effects. Standard errors clustered at the Local Government Authority District Level in Panel A and B and at the Harmonized Constituency level in Panel C, are presented in parentheses.

Table A5: Robustness to accounting for non-linear time varying shocks affecting individuals with different characteristics

		Controlling for shocks specific to				
		Qualification & Ec. activity			Life histories	
Dependent variable: support for UKIP	(1)	(2)	(3)	(4)	(5)	(6)
Panel A:						
Post x Benefit cut	0.028	0.018	0.021	0.014	0.022	0.013
	(0.004)	(0.005)	(0.005)	(0.005)	(0.007)	(0.007)
Mean of DV						
Observations	252639	251186	252313	250857	164794	163356
District FE & Region x Wave x Time FE	x	x	x	x	x	x
Panel B:						
Post x Benefit cut	0.026	0.018	0.019	0.014	0.021	0.015
	(0.005)	(0.005)	(0.005)	(0.005)	(0.008)	(0.008)
Mean of DV						
Observations	251080	249605	250734	249285	162449	160958
District x Wave x Time FE	x	x	x	x	x	x
Panel C:						
Post x Benefit cut	0.019	0.012	0.013	0.009	0.019	0.013
	(0.005)	(0.005)	(0.005)	(0.005)	(0.008)	(0.009)
Mean of DV						
Observations	234192	233390	233783	233016	145569	144573
Individual FE & District x Wave x Time FE	x	x	x	x	x	x
Region x Qualifications x Wave x Time FE		x		x		x
Region x Economic Activity x Wave x Time FE			x	x		x
Economic Activity History x Time FE					x	x

Notes: Table reports results from a panel OLS. The dependent variable is a dummy variable taking the value 1 in case a respondent expresses support for UKIP. Panel A controls for district by NUTS 1 Region x Wave x Time fixed effects, thus exploiting between district and between individual variation. Panel B controls for District x Wave x Time Fixed effects, thus only exploiting between individual variation within a district. Panel C controls for Respondent fixed effects and District x Wave x Time Fixed Effects, exploiting only within-individual- and within district variation. Standard errors clustered at the Local Government Authority District Level are presented in parentheses.

Table A6: Robustness of impact of different austerity measures on support for UKIP studying alternative control groups: exploiting individual-level data

	Whole sample				Matched sample				Narrower control group			
Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
support for UKIP	Any	CTB	DLA	BTX	Any	CTB	DLA	BTX	Any	CTB	DLA	BTX
Panel A:												
Post × Benefit cut	0.028	0.026	0.051	0.027	0.018	0.020	0.043	0.019	0.018	0.015	0.040	0.019
	(0.004)	(0.005)	(0.013)	(0.006)	(0.006)	(0.008)	(0.015)	(0.009)	(0.005)	(0.006)	(0.017)	(0.006)
Mean of DV	.0472	.0472	.0472	.0469	.0525	.0521	.0616	.0541	.0552	.0564	.0702	.0519
Local election districts	379	379	379	379	378	377	366	371	378	378	369	378
Observations	252642	252642	252642	245352	62995	35133	11610	30186	88093	61147	16050	50013
District FE	x	x	x	x	x	x	x	x	x	x	x	x
Region x Wave x Time FE	x	x	x	x	x	x	x	x	x	x	x	x
Panel B:												
Post × Benefit cut	0.026	0.025	0.043	0.026	0.023	0.029	0.034	0.010	0.020	0.016	0.043	0.022
	(0.005)	(0.005)	(0.013)	(0.006)	(0.008)	(0.010)	(0.026)	(0.014)	(0.005)	(0.006)	(0.023)	(0.008)
Mean of DV	.0472	.0472	.0472	.0469	.0525	.0521	.0616	.0541	.0552	.0564	.0702	.0519
Local election districts	379	379	379	379	378	377	366	371	378	378	369	378
Observations	252642	252642	252642	245352	62995	35133	11610	30186	88093	61147	16050	50013
District x Wave x Time FE	x	x	x	x	x	x	x	x	x	x	x	x
Panel C:												
Post × Benefit cut	0.019	0.019	0.030	0.016	0.013	0.023	0.008	0.001	0.012	0.010	0.034	0.011
	(0.005)	(0.006)	(0.015)	(0.006)	(0.008)	(0.009)	(0.032)	(0.014)	(0.006)	(0.007)	(0.023)	(0.008)
Mean of DV	.0472	.0472	.0472	.0469	.0525	.0521	.0616	.0541	.0552	.0564	.0702	.0519
Local election districts	379	379	379	379	378	377	366	371	378	378	369	378
Observations	252642	252642	252642	245352	62995	35133	11610	30186	88093	61147	16050	50013
Individual FE	x	x	x	x	x	x	x	x	x	x	x	x
District x Wave x Time FE	x	x	x	x	x	x	x	x	x	x	x	x

Notes: Table reports results from a OLS regressions with the dependent variable capturing whether an individual expresses support for UKIP. Panel A controls for local authority district and region by wave by time fixed effects. Panel B controls for local authority district by wave by time fixed effects. Panel C controls for individual fixed effects and local authority district by wave by time fixed effects. Columns (1 - (4) present the main results. Columns (5) - (8) constrain the analysis to include only individuals in the control group that are matched to individuals in the treatment group using propensity score matching on a vector of baseline characteristics prior to each reform. Columns (9) - (12) constrain the control group to only include individuals that have, at any point in time, received one of the three benefits. Standard errors clustered at the local Government Authority district-level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A7: Effect of austerity on political preferences: Studying the original political preferences of supporters of different political parties

	(1) UKIP	(2) Conservatives	(3) Labour	(4) Lib Dems	(5) No party
Initial party preference...					
Conservatives × Post × Any	0.048	-0.079	0.024	0.008	0.004
	(0.013)	(0.017)	(0.012)	(0.006)	(0.011)
Labour × Post × Any	0.009	-0.029	0.021	-0.001	0.002
	(0.005)	(0.005)	(0.009)	(0.003)	(0.007)
Lib Dems × Post × Any	0.049	-0.064	0.003	0.006	0.011
	(0.016)	(0.012)	(0.019)	(0.018)	(0.016)
None × Post × Any	0.003	-0.040	0.013	-0.007	0.042
	(0.008)	(0.006)	(0.011)	(0.004)	(0.013)
Other × Post × Any	0.043	-0.013	-0.017	-0.006	0.007
	(0.018)	(0.010)	(0.018)	(0.009)	(0.017)
UKIP × Post × Any	0.022	-0.027	0.014	0.002	-0.010
	(0.035)	(0.020)	(0.022)	(0.010)	(0.028)
Mean of DV	.048	.263	.351	.0819	.187
Local authority districts	378	378	378	378	378
Observations	234192	234192	234192	234192	234192
Individual FE	x	x	x	x	x
District x Region x Time FE	x	x	x	x	x

Notes: Table reports results from a panel OLS. The dependent variable is a dummy variable taking the value 1 in case a respondent expresses support for the party provided in the column head (either stating they are a supporter, feel close or would vote for the party if there was a general election tomorrow). The underlying regression interacts the individual level exposure to welfare reforms studied in Table 2 with a baseline measure of an individual's stated political party preference recorded the first time the respondents contribute to the USOC study. Standard errors clustered at the Local Government Authority District Level are presented in parentheses.

Table A8: Effect of exposure to welfare cuts on like/ or dislike of the established political parties: included only in Wave 2, 3 and 6 in USOC study

	(1)	(2)	(3)
Panel A: Like or dislike Conservatives			
Post × Benefit cut	-0.196	-0.243	-0.192
	(0.052)	(0.057)	(0.097)
Mean of DV	3.53	3.53	3.53
Local election districts	378	378	378
Observations	75077	75077	75077
Panel B: Like or dislike Labour			
Post × Benefit cut	-0.038	-0.050	-0.027
	(0.056)	(0.060)	(0.097)
Mean of DV	4.09	4.09	4.09
Local election districts	378	378	378
Observations	75193	75193	75193
Panel C: Like or dislike Liberal Democrats			
Post × Benefit cut	0.063	0.004	0.008
	(0.047)	(0.050)	(0.094)
Mean of DV	3.07	3.07	3.07
Local election districts	378	378	378
Observations	73783	73783	73783
District FE	×		
Region x Wave x Time FE	×		
District x Wave x Time FE		×	×
Individual FE			×

Notes: Table reports results from a OLS regressions. The dependent variable capture the extent to which respondents like or dislike one of the three main political parties. They are measured on a 10 point Likert scale ranging from strong dislike to strongly like. Standard errors clustered at the Local Government Authority District Level are presented in parentheses.

Table A9: Effects of benefit cut exposure on wider measures of perceptions of disenfranchisement *controlling for individual level political party preferences*

	(1)	(2)	(3)
Panel A: Public officials dont care			
Post × Benefit cut	0.053	0.065	0.045
	(0.022)	(0.023)	(0.046)
Mean of DV	3.37	3.37	3.37
Local election districts	378	378	378
Observations	66733	66733	66733
Panel B: Don't have say in what govt does			
Post × Benefit cut	0.069	0.078	0.058
	(0.022)	(0.023)	(0.048)
Mean of DV	3.33	3.33	3.33
Local election districts	378	378	378
Observations	66969	66969	66969
Panel C: Your vote is unlikely to make a difference			
Post × Benefit cut	0.007	0.009	0.015
	(0.011)	(0.012)	(0.025)
Mean of DV	.554	.554	.554
Local election districts	378	378	378
Observations	67409	67409	67409
Individual level political party preference	x	x	x
District FE	x		
Region x Wave x Time FE	x		
District x Wave x Time FE		x	x
Individual FE			x

Notes: Table reports results from a panel OLS regressions. The individual level political party preference controls for time-varying individual level political party preference for Labour, the Conservatives, the Liberal Democrats, UKIP or No Party. The dependent variable in Panel A and B is a score on a 5 point likert scale (strongly disagree - strongly agree). In Panel C it is a dummy variable equal to 1 if respondents indicate that they think it is unlikely that their vote makes a difference. Standard errors clustered at the Local Government Authority District Level are presented in parentheses.

Table A10: Wider measures of perceptions of disenfranchisement and turnout: robustness included only in some waves of the USOC study

	Any reform			CTB			DLA			BTX		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Public officials dont care												
Post × Benefit cut	0.078	0.073	0.051	0.054	0.054	0.034	0.091	0.089	0.154	0.077	0.069	0.039
	(0.020)	(0.021)	(0.040)	(0.024)	(0.025)	(0.049)	(0.051)	(0.052)	(0.089)	(0.030)	(0.032)	(0.060)
Mean of DV	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37	3.37
Local election districts	378	378	378	378	378	378	378	378	378	378	378	378
Observations	75547	75547	75547	75547	75547	75547	75547	75547	75547	73357	73357	73357
Panel B: Don't have say in what govt does												
Post × Benefit cut	0.096	0.093	0.068	0.083	0.071	0.057	0.066	0.054	0.083	0.084	0.083	0.041
	(0.020)	(0.021)	(0.041)	(0.023)	(0.025)	(0.047)	(0.053)	(0.054)	(0.097)	(0.031)	(0.033)	(0.061)
Mean of DV	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34
Local election districts	378	378	378	378	378	378	378	378	378	378	378	378
Observations	75897	75897	75897	75897	75897	75897	75897	75897	75897	73665	73665	73665
Panel C: Your vote is unlikely to make a difference												
Post × Benefit cut	0.020	0.021	0.020	0.018	0.016	0.022	0.026	0.036	0.065	0.010	0.006	-0.013
	(0.011)	(0.011)	(0.022)	(0.013)	(0.014)	(0.027)	(0.025)	(0.026)	(0.050)	(0.016)	(0.016)	(0.027)
Mean of DV	.563	.563	.563	.563	.563	.563	.563	.563	.563	.562	.562	.562
Local election districts	378	378	378	378	378	378	378	378	378	378	378	378
Observations	74947	74947	74947	74947	74947	74947	74947	74947	74947	73308	73308	73308
Panel D: Likelihood to vote in next election												
Post × Benefit cut	0.138	0.120	0.102	0.226	0.219	0.136	0.433	0.421	-0.008	-0.032	-0.066	0.079
	(0.076)	(0.079)	(0.118)	(0.095)	(0.099)	(0.138)	(0.186)	(0.192)	(0.246)	(0.102)	(0.107)	(0.175)
Mean of DV	7.54	7.54	7.54	7.54	7.54	7.54	7.54	7.54	7.54	7.56	7.56	7.56
Local election districts	378	378	378	378	378	378	378	378	378	378	378	378
Observations	78173	78173	78173	78173	78173	78173	78173	78173	78173	76396	76396	76396
District FE	x			x			x			x		
Region x Wave x Time FE	x			x			x			x		
District x Wave x Time FE		x	x		x	x		x	x		x	x
Individual FE			x			x			x			x

Notes: Columns (1) - (3) replicate main Table 4. Columns (4) - (6) focus on the individuals affected by council tax benefit reform. Columns (7) - (9) focus on the sample exposed to the disability living allowance reform, while columns (10)-(12) focus on the sample of individuals likely exposed to the bedroom tax. Standard errors clustered at the Local Government Authority District Level are presented in parentheses.

Table A11: Alternative broader outcome measures and support for Leave across different control variables: Controlling for political party preferences

Dependent variable: Leave support	(1)	(2)	(3)	(4)	(5)	(6)
Public officials don't care	0.039	0.027	0.027	0.025	0.025	0.021
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)
Don't have a say in what government does	0.033	0.023	0.023	0.021	0.022	0.024
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.006)
My vote doesnt matter	0.004	0.010	0.011	0.011	0.013	0.007
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.010)
Behind with council tax	0.068	0.067	0.062	0.053	0.062	0.042
	(0.017)	(0.017)	(0.017)	(0.017)	(0.019)	(0.025)
Behind with rent	0.025	0.018	0.015	0.005	0.011	0.006
	(0.016)	(0.016)	(0.016)	(0.017)	(0.019)	(0.022)
Local authority districts	377	377	377	377	376	373
Observations	18813	18778	18760	18551	14139	9562
Political party preferences	x	x	x	x	x	x
District FE	x	x	x	x	x	x
Qualifications & Age FE		x	x	x	x	x
Economic Activity Status FE			x	x	x	x
Income Decile FE				x	x	x
Health conditions					x	x
Socio-economic status & Employment Sector FE						x

Notes: Table reports results from a cross-sectional OLS regressions. The dependent variable is a dummy indicating whether respondents stated that they support Leaving the EU. The sample gets successively smaller as more control variables get added that are not available across the full sample. In case a variable is not reported on in a specific wave, the most recent time a control variable is observed for an individual in the panel is used. Standard errors clustered at the Local Government Authority District Level are presented in parentheses.

Table A12: Robustness to using control group individuals refined using matching

Dependent variable: Leave support	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Any Reform	0.070	0.065	0.048	0.049	0.050	0.082	0.088	0.112
	(0.019)	(0.018)	(0.019)	(0.019)	(0.020)	(0.029)	(0.030)	(0.035)
Mean of DV	.56	.56	.56	.56	.561	.511	.511	.504
Local authority districts	359	359	359	359	358	252	251	216
Observations	5508	5508	5507	5505	5469	1710	1690	1301
District FE	x	x	x	x	x	x	x	x
Qualifications FE		x	x	x	x	x	x	x
Age FE			x	x	x	x	x	x
Employment Status FE				x	x	x	x	x
Income Decile FE					x	x	x	x
Industry of Employment FE						x	x	x
Socio-economic status group FE							x	x
Health conditions								x

Notes: Table reports results from a cross-sectional OLS regressions. The dependent variable is a dummy indicating whether respondents stated that they support Leaving the EU. The sample is restricted based on individuals that are good matches among the set of individuals not exposed to either of the three benefit reforms studied in detail. Matches are constructed with replacement with matching on gender, age, indicator variables capturing whether an individual is employed, working in family care roles, retired, self-employed, a student or unemployed, together with the tenancy status indicator of whether an individual lives in rented accommodation, owns the property outright or with a mortgage, together with a set of features capturing the educational attainment across the five categories included in the UK census, along with the log value of pre-treatment monthly benefit income. A caliper of 0.01 is imposed to retain good quality matched pairs. The sample gets successively smaller as more control variables get added that are not available across the full sample. In case a variable is not reported on in a specific wave, the most recent time a control variable is observed for an individual in the panel is used. Standard errors clustered at the Local Government Authority District Level are presented in parentheses.

B Data Description and Additional Background Material

B.1 Council elections

The data for district elections in Great Britain is taken from The Elections Centre. It contains comprehensive data on local government elections since 1973. Since 1999, there have been several changes in local government structure, and these have been accounted for in constructing the panel.

The current local government structure includes both two-tier and single-tier components. In England, there are 27 upper-tier county councils with 201 lower-tier district councils. Additionally, there are 32 London Boroughs, the City of London, 36 metropolitan boroughs (or districts), and 55 unitary authorities (UA), all of which operate on a single-tier basis. Since 1994, there are 22 unitary authorities in Wales and 32 unitary authorities in Scotland. While most responsibilities are split between counties and districts in two-tier authorities, single-tier authorities must provide all the services . In constructing the sample, this paper includes all election results at the district council and single-tier authority level between 2000 and 2015.

Elections are organized by subdivisions of local authorities called electoral wards or electoral divisions. Each ward is represented by one or more elected councillors. Although in all cases councillors serve 4 year terms, there are three distinct systems of elections. First, elections may happen every four years for all councillors. Second, elections may happen for a third of the councillors every year, with no election in the fourth year. In this case, the fourth year is used for county council elections. Third, half of the councillors may be elected every two years . In terms of voting system, England and Wales use First Past the Post, while the Single Transferable Vote system is used in Scotland and Northern Ireland. In the analysis, a system of elections every four years starting in 2000 is treated separately from a system with elections every four years starting in 2000. Thus, all additional variation is taken into account with "election wave" fixed effects, which control for differences between authorities with different elections structures and sequences.

The main change in the structure of local government since 2000 was the introduction of nine new unitary authorities in England in 2009. These changes are summarized in the table below. In the first five county councils, the lower tier district councils were abolished, and all functions were undertaken by the new unitary authority of the same name. In Bedfordshire, Mid- and South Bedfordshire merged to form the Central Bedfordshire UA. Bedford attained UA status, having previously been a district. In Cheshire, the unitary authority of Cheshire West and Chester was formed from the districts of Ellesmere Port and Neston, Vale Royal, and Chester. The districts of Macclesfield, Congleton and Crewe and Nantwich merged to form Cheshire East. In order to compare the regions before and after these reforms, district-level results were merged into the current UA boundaries between 2000 and 2008. There is no concern of overlap, as no district council was split to form the new unitary authorities.

Table B1: Changes to district councils since 2000

County Council (before 2009)	District Councils (Before 2009)	New Unitary Authority (After 2009)
Cornwall	Caradon	Cornwall
	Carrick	
	Kerrier	
	North Cornwall	
	Penwith	
	Restormel	
Durham	Cheshire-le-Street	Durham
	City of Durham	
	Derwentside	
	Easington	
	Sedgefield	
	Teeside	
	Wear Valley	
Northumberland	Alnwick	Northumberland
	Berwick-upon-Tweed	
	Blyth Valley	
	Castle Morpeth	
	Tynedale	
	Wansbeck	
Shropshire	Bridgnorth	Shropshire
	North Shropshire	
	Oswestry	
	Shrewsbury and Atcham	
	South Shropshire	
Wiltshire	Kennet	Wiltshire
	North Wiltshire	
	Salisbury	
	West Wiltshire	
Bedfordshire	Mid Bedfordshire	Bedford
	South Bedfordshire	Central Bedfordshire
Cheshire	Chester	Cheshire West and Chester
	Congleton	Cheshire East
	Crewe and Nantwich	
	Ellesmere Port and Neston	
	Macclesfield	
	Vale Royal	

B.2 Political preferences elicited through the USOC survey

I take advantage of the USOC politics module that is included in Waves 1-7 of the USOC panel study. Wave 8 of the study includes the EU referendum question, but, unfortunately, does not include the politics module.

The key value added of working with individual level panel data lies in the fact that I can fully zoom in on changes in political preferences within an individual. The instrument used for each USOC survey round contains a Politics module that elicits political preferences through a sequence of questions. These are presented in Figure B1. The enumerator asks the respondents first, whether an individual is a supporter of a political party. If the respondent says yes, they enquire which is the political party.

In case respondents said that they are not a supporter of a specific party, the enumerator asks whether the respondent sees him- or herself closer to one party or another. If that is the case, the enumerator asks, which political party that is.

Only if a respondent is neither a supporter of a political party or feeling closer to one party over another one, the enumerator asks, which party would the respondent vote for in case there was an election.

In the face-to-face interviews, respondents are not directly prompted with party names from a menu, but rather respondents are asked to provide the party name, which the enumerator ticks on the survey questionnaire or, alternatively, details. In waves 1-3, the conversion of the survey questionnaires (containing the detailed party names) to digital files, did not separately code UKIP, but rather, included a broad category "Other" – the other main parties, in particular, Labour, Conservatives, Liberal Democrats, Greens, Plaid Cymru, Scottish Nationalists as well as Sinn Fein for Northern Ireland are always consistently coded.

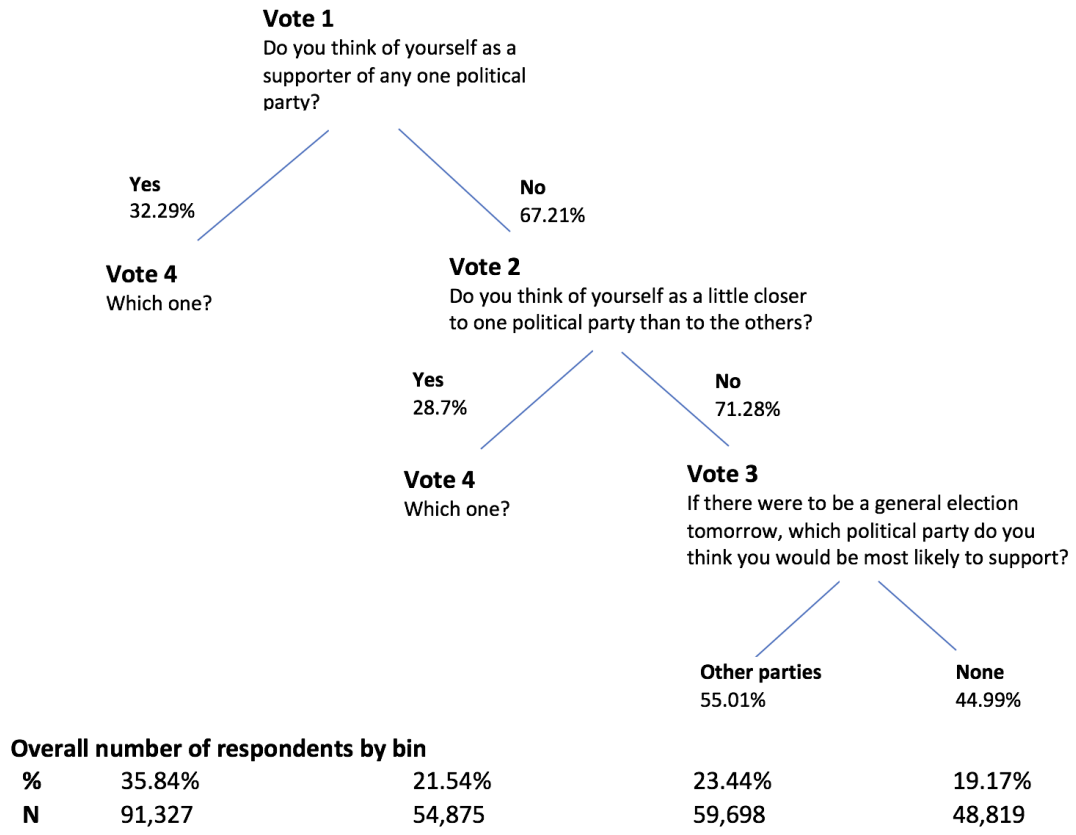
Conversations with the UK Data Service handling the USOC data confirms that most of the Other-coded responses prior to wave 3 were supporters of UKIP or the British Nationalist Party (BNP). From Wave 4 onwards, UKIP is separately coded and the pool of respondents in the maintained "Other" category collapses once UKIP is separately coded. To be consistent throughout, I include the Other category into the count of UKIP supporters from Wave 4 onwards as well, which

likely adds some noise to the dependent variable.

This narrow module is complemented with a more detailed *Political engagement* module in wave 2, 3 and 6. The political engagement module includes six further survey questions explored in this paper.

- ”Public officials don’t care” – respondents are asked to (strongly) disagree or (strongly) agree with this statement on a 5 point Likert scale.
- ”I don’t have a say in what the government does” – respondents are asked to (strongly) disagree or (strongly) agree with this statement on a 5 point Likert scale.
- Perceived political influence – respondents are asked “On a scale from 0 to 10, where 0 means very unlikely and 10 means very likely, how likely is it that your vote will make a difference in terms of which party wins the election in this constituency at the next general election?” – in this paper I code respondents reporting are score weakly lower than 3 as perceiving that their vote is unlikely to make a difference.
- Party likes- and dislikes – respondents are asked for each of the three main parties (Conservative/Labour/ Liberal Democrats) ”On a scale from 0 to 10, where 0 means strongly dislike and 10 means strongly like, how do you feel about the ... Party ?”

Figure B1: Schematic of USOC survey instrument eliciting political party preferences



Notes: Schematic presenting the structure of the USOC survey instrument eliciting political party preferences of individual respondent.

B.3 Simulated welfare-reform impact measures and reforms studied

The simulated impact of the welfare reform measures leverages data constructed by Beatty and Fothergill (2013). They study seven actual reforms that were implemented, mostly through the 2012 Welfare Reform Act, many of which became effective starting in early 2013.

- Housing Benefit - Local Housing Allowance - Changes to the rules governing assistance with the cost of housing for low-income households in the private rented sector. The new rules apply to rent levels, 'excess' payments, property size, age limits for sole occupancy, and indexation for inflation.
- Housing Benefit - Under-occupation - New rules governing the size of properties for which payments are made to working age claimants in the social rented sector (widely known as the 'bedroom tax')
- Non-dependant deductions - Increases in the deductions from Housing Benefit, Council Tax Benefit and other income-based benefits to reflect the contribution that non-dependant household members are expected to make towards the household's housing costs
- Household benefit cap - New ceiling on total payments per household, applying to the sum of a wide range of benefits for working age claimants
- Council Tax Benefit - Reductions in entitlement of working age claimants arising from 10 per cent reduction in total payments to local authorities
- Disability Living Allowance - Replacement of DLA by Personal Independence Payments (PIP), including more stringent and frequent medical tests, as the basis for financial support to help offset the additional costs faced by individuals with disabilities
- Incapacity benefits - Replacement of Incapacity Benefit and related benefits by Employment and Support Allowance (ESA), with more stringent medical

tests, greater conditionality and time- limiting of non-means tested entitlement for all but the most severely ill or disabled

- Child Benefit - Three-year freeze, and withdrawal of benefit from households including a higher earner
- Tax Credits - Reductions in payment rates and eligibility for Child Tax Credit and Working Families Tax Credit, paid to lower and middle income households
- 1 per cent up-rating - Reduction in annual up-rating of value of most working-age benefits

Impact measures For each of these reforms, the UK government has estimated impact estimates at the aggregate level. The main source of this information that Beatty and Fothergill (2013) use is reports from HM Treasury estimating overall financial saving arising from each element of the reforms. These were published in the official Budget's or the Chancellor of the Exchequer's Autumn Statement. Additional data sources used are Impact Assessment that government departments, such as, for example, the Department for Works and Pensions, has produced.

Beatty and Fothergill (2013) use these impact assessment to produce local authority level specific estimates of the likely impact. This combines three the official published ex-ante expected financial saving to the UK Exchequer, the distribution of benefit claimants between local authorities, and the extent to which claimants in each local authority are likely to be affected by the reforms.

For the latter, benefit claimant numbers and expenditure by local authority (incorporating demographic information such as family status and age) is incorporated. These data come from the Department of Works and Pensions and HM Revenues and Customs (the UK tax authorities).

Reforms focused on The paper studies in some detail the "Housing Benefit - Under-occupation", "Council Tax Benefit" , "Disability Living Allowance" , "Child Benefit" and "Tax Credits" changes. It also studies the overall implied austerity impact measure that is constructed combining all these ten measures. The choice

of the reforms that are studied with more detail is driven by the availability of data and the ability to be able to capture specific reforms in the individual level data.

The reforms not covered directly are mostly not included due to the difficulty to identify treated subpopulations in the individual level data. Specifically, for the reforms to the Local Housing Allowance, this essentially cut benefits to households living in the private rented sector receiving housing benefits. This involved a change to the way that the maximum amount eligible for housing benefit support is computed. Prior to 2013, housing benefit claimants could get support covering rent up to the median rent in the local authority district; this reference rent was dropped to the 30th percentile.

A second reform was the Household benefit cap, which introduced a cap on the maximum benefit income a household could receive. The initial cap was set at GBP 26,000 (which coincides roughly with the average household income across the UK) resulting in only a handful of households in the sample period being affected in the individual level sample. Since fall 2016, the benefit cap was lowered by 23% to 20,000. The third benefit reform not explicitly discussed was a reform to Incapacity benefits – the Employment Support Allowance, which was another disability benefit reform. This was a reform that was already introduced by the outgoing labor government in late 2008 already and reinforced by the Coalition government introducing similar work capability assessments as for DLA/PIP, more conditionality and more time-limits.

C Auxiliary Results

C.1 Robustness of trend changes in UKIP support

In this appendix, I present a range of robustness checks to highlight that the trends presented in Section 3 are robust.

Similar trends for EP and Westminster elections While the trends presented in the main paper focus on the local elections, due to the high frequency of election results data for local elections, the trend patterns are very similar when studying EP or Westminster elections. Appendix Figure C1 shows that the marked change in the correlation structure between UKIP support and measures of poor economic fundamentals of 2001 constituency boundaries harmonized constituencies are very similar, with UKIP support picking up markedly in areas with high shares of the local population with No Qualifications, working in Routine jobs or high shares of Retail- and Manufacturing sector employment. The same patterns appear when studying EP elections as evidenced in Figure C2. While, on average, UKIP vote shares in Local and Westminster elections are mechanically lower (as not all seats are contested), UKIPs performance in EP elections 2004, 2009 and 2014 stands out consistently realizing more than 15.6% of the vote.

Functional form The set of fixed effects included in the main specification is quite demanding. The results are very similar if I control fo more or less demanding time-fixed effects. In particular, Appendix Figures C8 show the estimated coefficients, when controlling for election-wave by region and year fixed effects. This set of fixed effects is particularly suitable as it de-facto zooms in on districts that are on similar rotation schedules for the elections of councillors. Similarly, Appendix Figure C9) presents results using simple year fixed effects; throughout, the results patterns are very similar.

Sample balance UKIP does not field candidates in each of the local council elections. In the overall panel, UKIP is coded has having zero percentage of votes in case it does not field candidates. The results are however, robust to focusing on a much more balanced panel, including only districts in which UKIP fielded

candidates in at least 50% of the elections. These results are presented in Figure C7, the trends remain very similar. This, taken together with the similar trends we document for the EP (where candidates are fielded throughout the UK as they are selected based on the party's performance in regional lists) and Westminster elections renders me confident that the results are not masking selection effects.

Broader baseline categories or measures The presentation of trends in Section 3 is condensed to a small set of baseline characteristics $X_{i,baseline}$. In this section, I show that the results are robust to a much richer set of baseline characteristics. In particular, Appendix Figure C3 shows a richer set of plots for six distinct qualification groups; the increase in support for UKIP is driven by areas that have a relatively low skill composition of the local resident population, while the reverse is true for areas with a resident population with higher degrees.

Appendix Figure C4 shows a richer set of plots for the eight distinct socio-economic status groups that the UK census bureau distinguishes. The Census bureau categorizes individual occupations and job titles into these socio-economic status groups, following the Goldthorpe classification system from sociology.

Appendix Figure C5 presents a broader set of sectors, suggesting that no trend patterns emerge for areas that have a sizable Health Care or Hotel & Accommodation sector. Similar positive effects on UKIP are found for the Transportation and Construction sectors, while the opposite direction shows up for Education and Real Estate.

In particular, I use refined baseline measures focusing on the qualification profile of the UK-born resident population (as opposed to including foreign borns). This exercise serves to zoom in on the likely electorate, which is mostly drawn from the UK-born resident population, despite EU citizens being entitled to vote in local elections. These results are presented in Appendix Figure C10 and provide very similar patterns.

C.2 Where do UKIP voters come from?

The EU referendum was announced in early 2013 by the Conservative Prime Minister David Cameron, on condition of winning a majority in the 2015 election. This suggests that UKIP was particularly perceived as a threat to the Conservative

party.

Yet, the previous literature suggests that UKIP also attracted supporters from the Labour party. Similarly, it could be that UKIP was particularly successful in mobilizing voters that previously did not turn out to vote in elections.

I investigate these in turn.

Empirical specification I build on our previous analysis that documents that UKIP's electoral ascent post 2010 is driven by places with weak economic fundamentals. I now ask whether these fundamentals, after 2010, explain distinct moves away from other parties by estimating the following specification

$$y_{irt} = \alpha_i + \beta_{rt} + \gamma \times \text{Post 2010} \times \text{X}_{i,baseline} + \epsilon_{irt} \tag{1}$$

The only difference to the previous specification is that now, we explore a range of dependent variables y_{irt}. In addition to the UKIP vote shares, we present results pertaining to turnout, the Conservative-, Labour- and Liberal Democrat party vote shares. Furthermore, due to space constraints, we present not the full sequence of non-parametric effects, but rather, focus on a pooled average post 2010 coefficient estimate γ to be presented in table form.

I perform the analysis at the level of local council elections, European Parliamentary elections as well as Westminster elections.

Results The results pertaining to the study of local elections are presented in Table C1. The results suggest that UKIP's growth that is captured by the weak baseline socio-economic characteristics comes mostly at the expense of Conservative party vote shares as indicated by the negative coefficients in column (3) across most proxy measures for weak-socio economic fundamentals, with the exception of the share of residents working in retail.

There is no statistically discernible effect on turnout, suggesting that places with weak socio-economic fundamentals post 2010 saw no differential voter mobilization from which UKIP could have benefited. If anything, the point estimates are negative throughout.

This analysis suggests that the Conservative party, in local elections, was losing

non-negligible numbers of voters to UKIP. This is not surprising, as Conservative councillors defected to UKIP quite regularly (Webb and Bale, 2014).

I obtain very similar results when studying the performance of UKIP and the other parties in the European Parliamentary election of 2014 (relative to the earlier rounds) and the 2015 Westminster election (relative to the 2001, 2005 and 2010 elections). These results are presented in Appendix Tables C2 and C3.

On the timing Since the EU referendum was already *announced* in January 2013, it becomes interesting to see whether the link between weak socio-economic fundamentals and UKIP votes is already present in the data prior to the announcement, in particular up to the 2012 local council elections that were held in May 2012.

I restrict the analysis to the two local election rounds in 2011 and 2012 and present the results in Table C4. The pattern is similar, but also suggests some distinct differences. We find the same positive link between weak socio-economic fundamentals and UKIP votes after 2010. It is statistically significant for two of the four indicators of weak socio-economic fundamentals: for the share of the resident population with low qualification and for the prevalence of retail employment.

There are some differences in the effects on other parties: while the Conservative party appears to be contracting in such areas, the Labour party, along with UKIP actually stands to gain. This suggests that prior to the EU referendum announcement, in local elections, a growing support for UKIP is associated with a worse performance for the Conservatives and a better performance for Labour in areas with weak fundamentals, suggesting that the perceived threat of UKIP, increasing the risk of a shift towards Labour may have been particularly strongly perceived in the run up to the January 2013 announcement.

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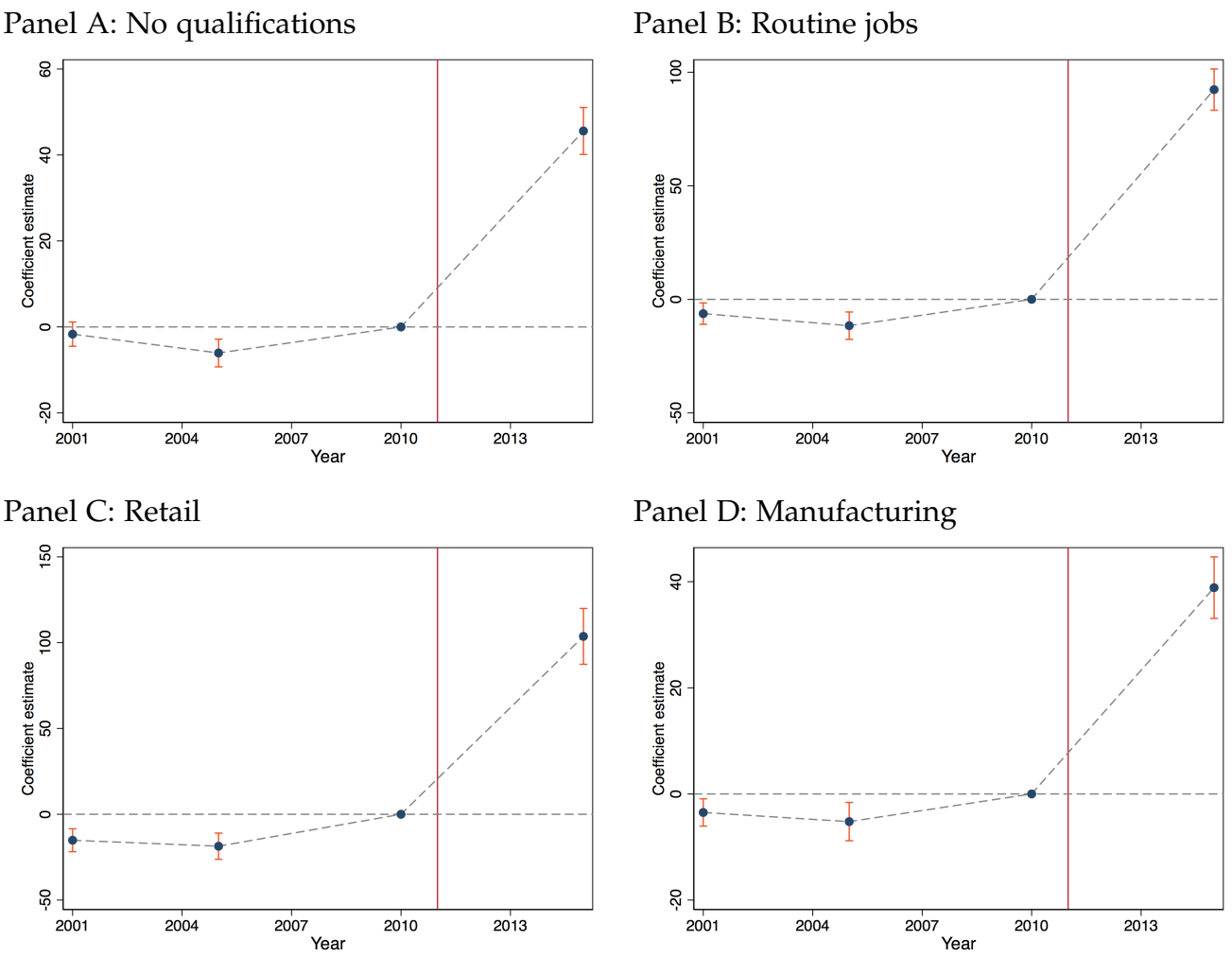
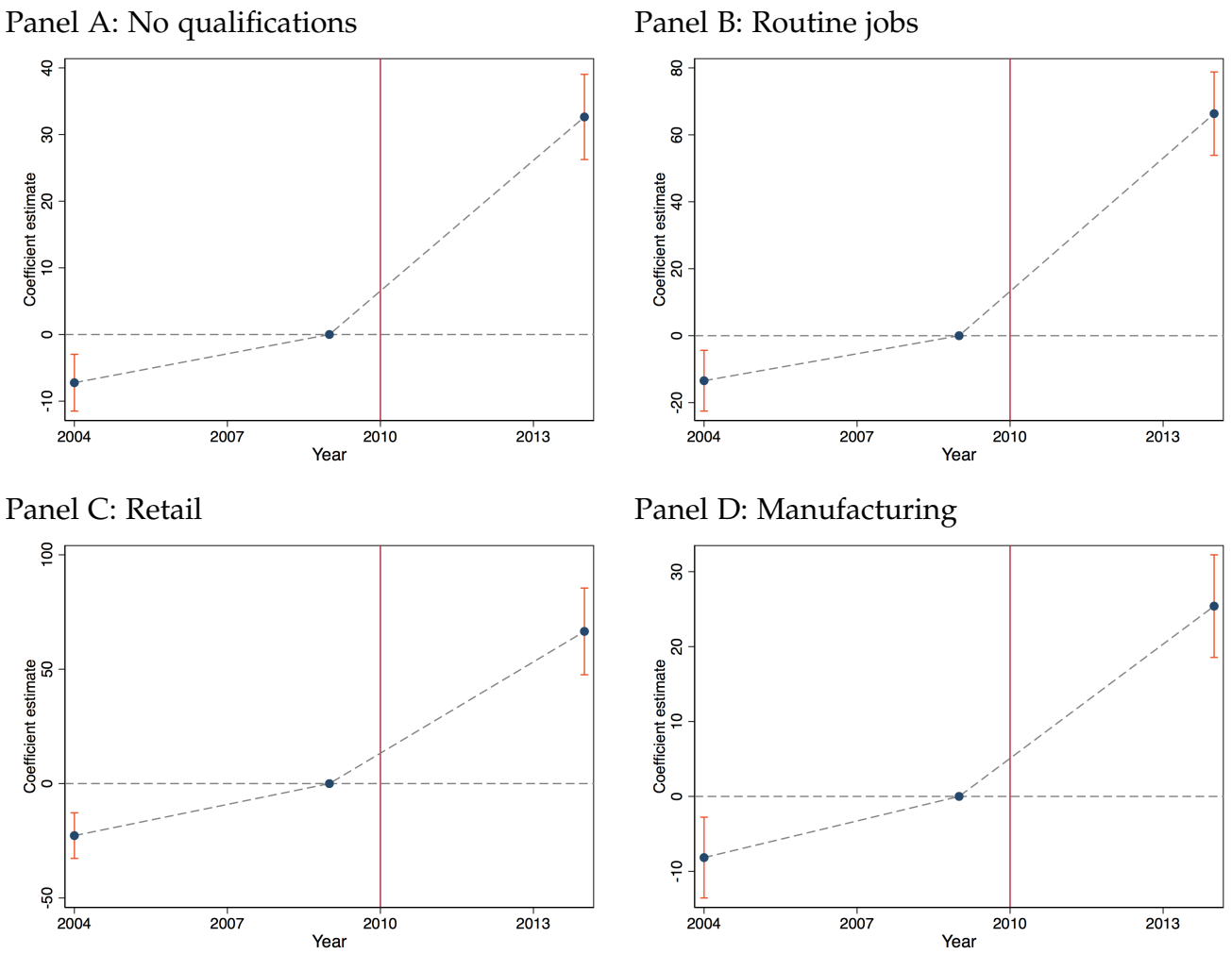
Figure C1: Non-parametric effect of educational qualification, socio-economic status, and sectoral employment of the resident population as of 2001 on support for UKIP *in Westminster Parliamentary elections* from 2001 - 2015 over time



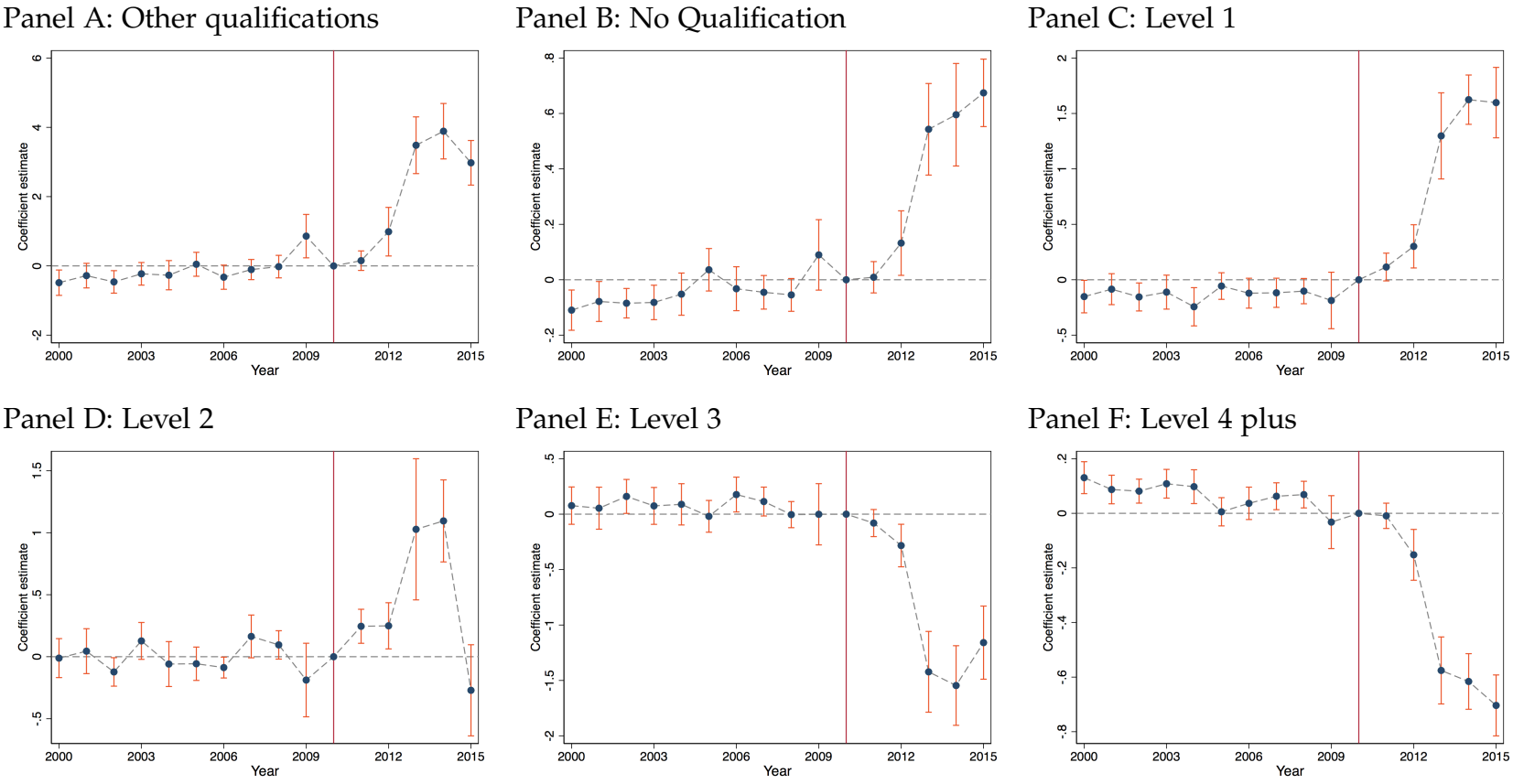
Notes: The dependent variable is the percentage of votes for UKIP in Westminster elections at the harmonized 2010 constituency level. Panel A uses the share of the resident population with no formal qualifications as of 2001. Panel B uses the share of the resident population in Routine jobs as per the National Socio-Economic Classification of Occupations as of 2001. Panel C uses the share of the resident working age population employed in the Retail sector, while panel D uses the share of the resident working age population employed in Manufacturing. The graph plots point estimates of the interaction between these cross sectional measures and a set of year fixed effects. All regression include local authority district fixed effects and election wave by NUTS1 region by year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Figure C2: Non-parametric effect of educational qualification, socio-economic status, and sectoral employment of the resident population as of 2001 on support for UKIP *in European Parliamentary elections* over time



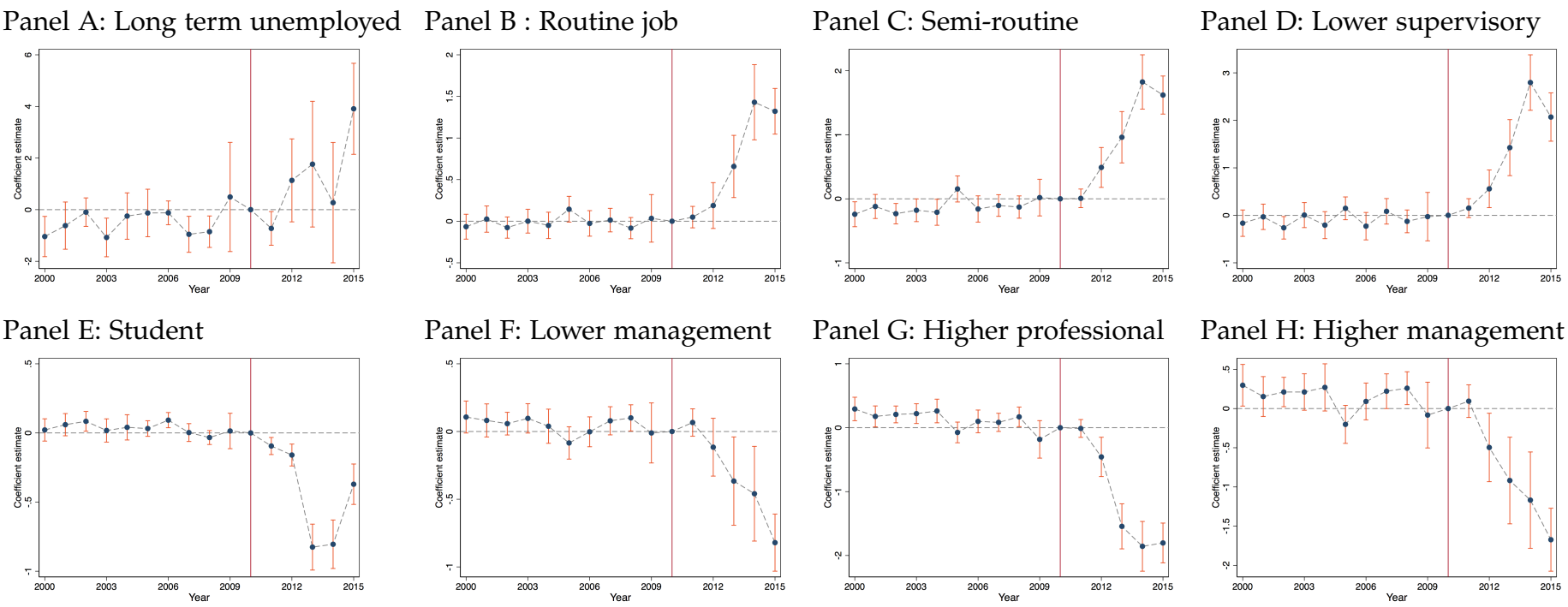
Notes: The dependent variable is the percentage of votes for UKIP in European Parliamentary elections at the local authority district level. Panel A uses the share of the resident population with no formal qualifications as of 2001. Panel B uses the share of the resident population in Routine jobs as per the National Socio-Economic Classification of Occupations as of 2001. Panel C uses the share of the resident working age population employed in the Retail sector, while panel D uses the share of the resident working age population employed in Manufacturing. The graph plots point estimates of the interaction between these cross sectional measures and a set of year fixed effects. All regression include local authority district fixed effects and election wave by NUTS1 region by year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Figure C3: Non-parametric effect of educational qualification of the resident population in 2001 on support for UKIP over time



Notes: The variable is the respective share of the resident population in a local authority district that has obtained the educational qualifications following the UK classification system, whereby No qualifications means no formal qualification or school leaving certificate, Level 1 stands for having between 1-4 General Certificate of Secondary Education (GCSE) qualifications, Level 2 stands for 5 GCSEs, Level 3 means having 2 or more A-levels (university qualifying), while level 4 or above captures having a university degree. Other qualifications includes apprenticeships and foreign qualification below a university degree. The graph plots point estimates of the interaction between these cross sectional measures and a set of year fixed effects. All regression include local authority district fixed effects and NUTS1 region by year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

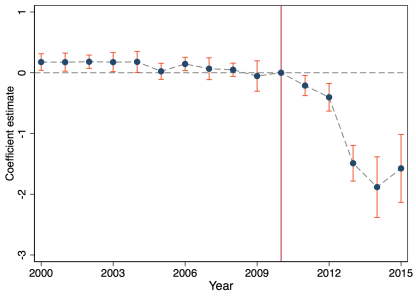
Figure C4: Non-parametric effect of socio-economic employment status of the resident population in 2001 on support for UKIP over time



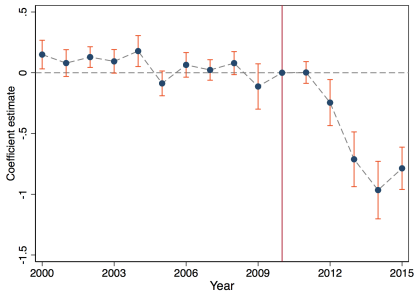
Notes: The variable is the respective share of the resident population in a district that is in either socio-economic status classification as of 2001. The graph plots point estimates of the interaction between these cross sectional measures and a set of year fixed effects. All regression include local authority district fixed effects and NUTS1 region by year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Figure C5: Non-parametric effect of the industry employment structure in 2001 on support for UKIP over time

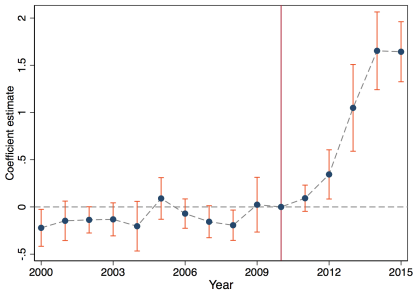
Panel A: Education



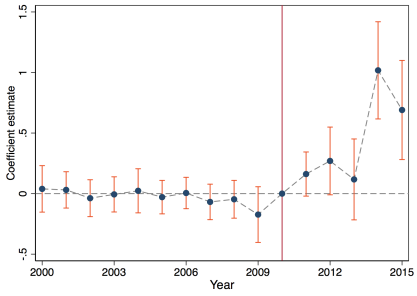
Panel B: Real Estate



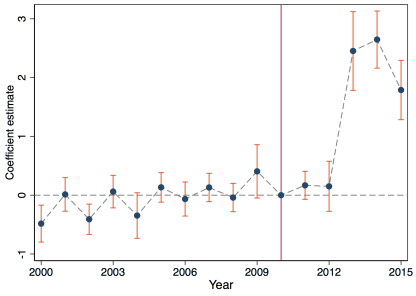
Panel C: Retail



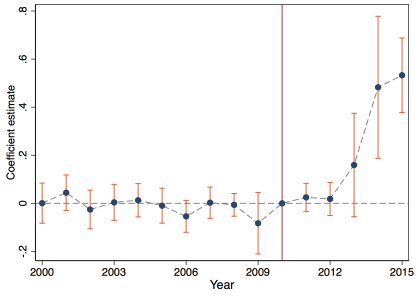
Panel D: Transport



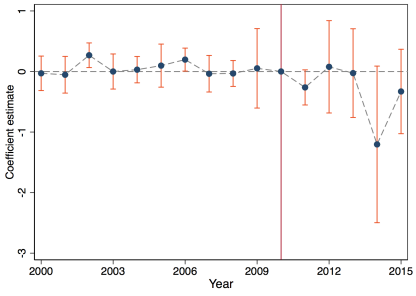
Panel E: Construction



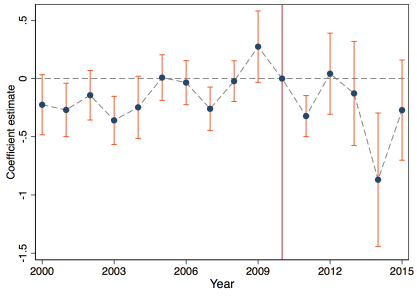
Panel F: Manufacturing



Panel G: Hotel & Accommodation



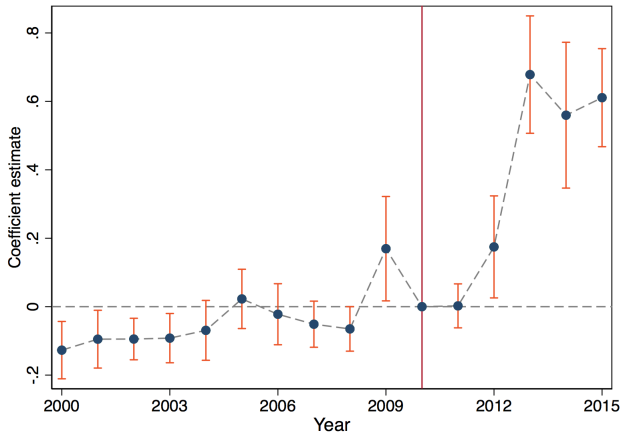
Panel H: Health care



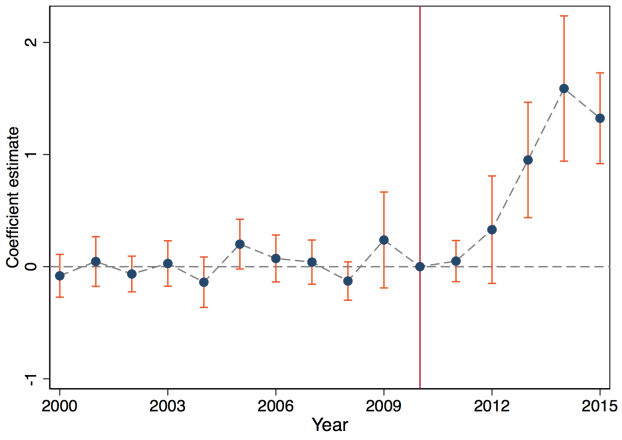
Notes: The dependent variable is the percentage of votes for UKIP in local council elections. The independent variables are the respective shares of the resident working age population in a district that is working in any of the different sectors as of 2001 interacted with a set of year fixed effects. All regression include local authority district fixed effects and NUTS1 region by year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Figure C6: Non-linear time trend in support for UKIP *after partialing out non-linear trend in baseline manufacturing sector prevalence and import-shock*

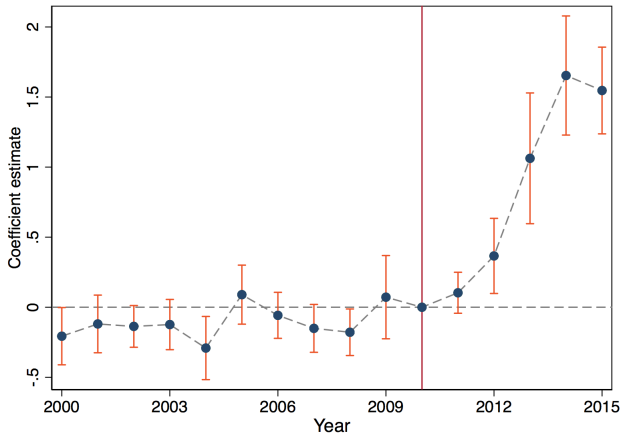
Panel A: No qualifications



Panel B: Routine jobs

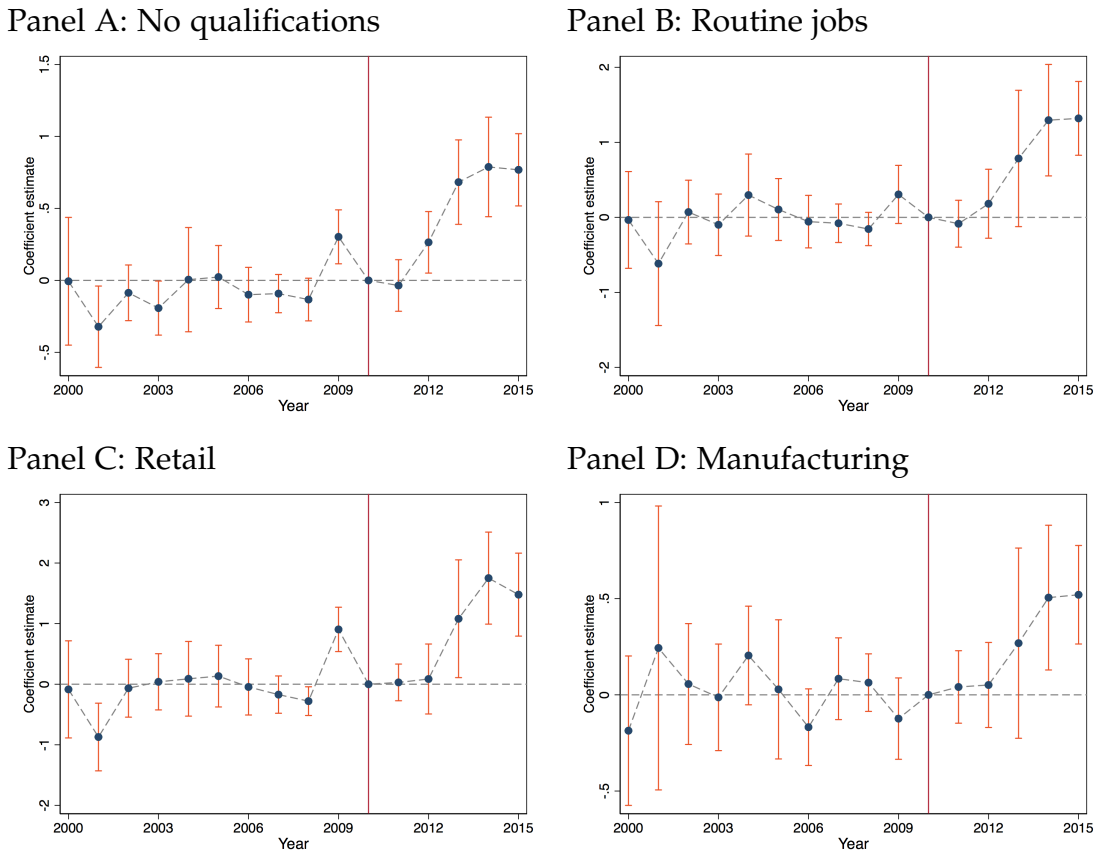


Panel C: Retail



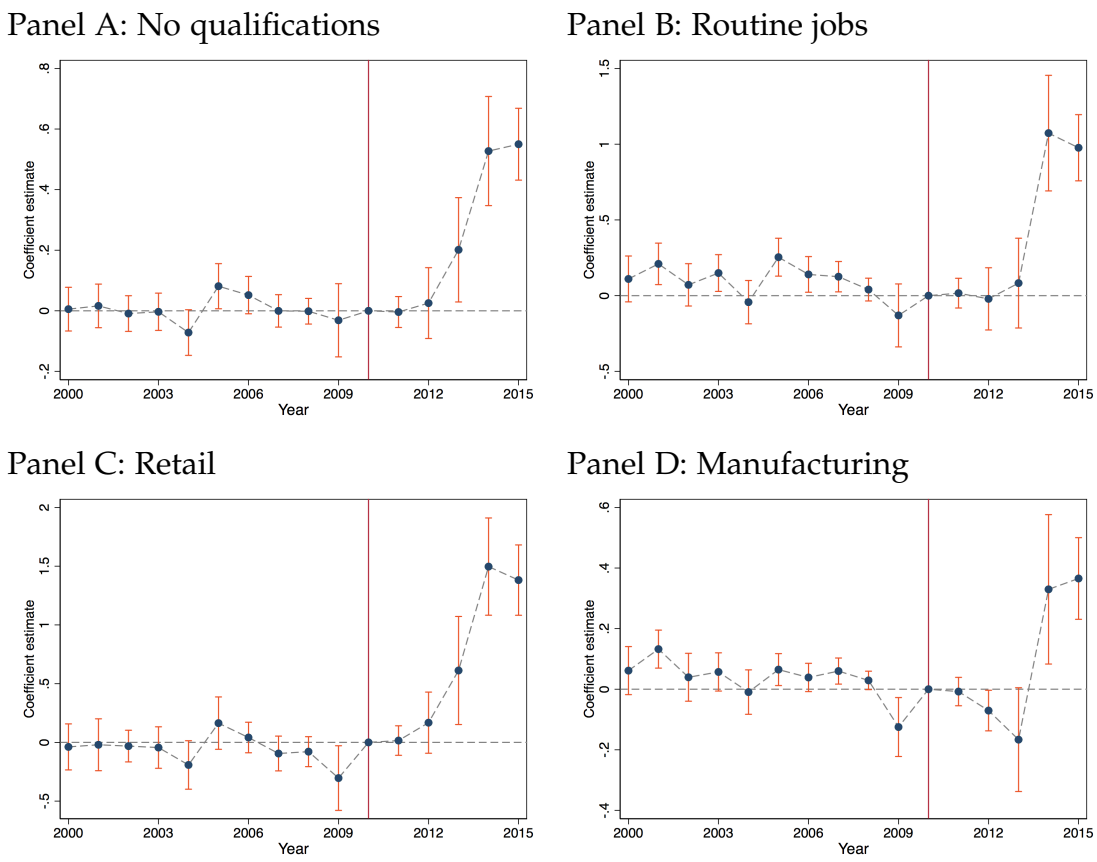
Notes: The dependent variable is the percentage of votes for UKIP in local council elections. Panel A uses the share of the resident UK born population with no formal qualifications as of 2001. Panel B uses the share of the UK born resident population in Routine jobs as per the National Socio-Economic Classification of Occupations as of 2001. The graph plots point estimates of the interaction between these two cross sectional measures and a set of year fixed effects. All regression include local authority district fixed effects and NUTS1 region by year fixed effects, in addition to year effects interacted with the baseline size of the manufacturing sector in terms of employment as of 2001 as well as the Colantone and Stanig (2018) import competition measure. Standard errors are clustered at the district level with 90% confidence bands indicated.

Figure C7: Robustness to balanced sample of elections – Non-parametric effect of educational qualification, socio-economic status, and sectoral employment of the resident population as of 2001 on support for UKIP over time



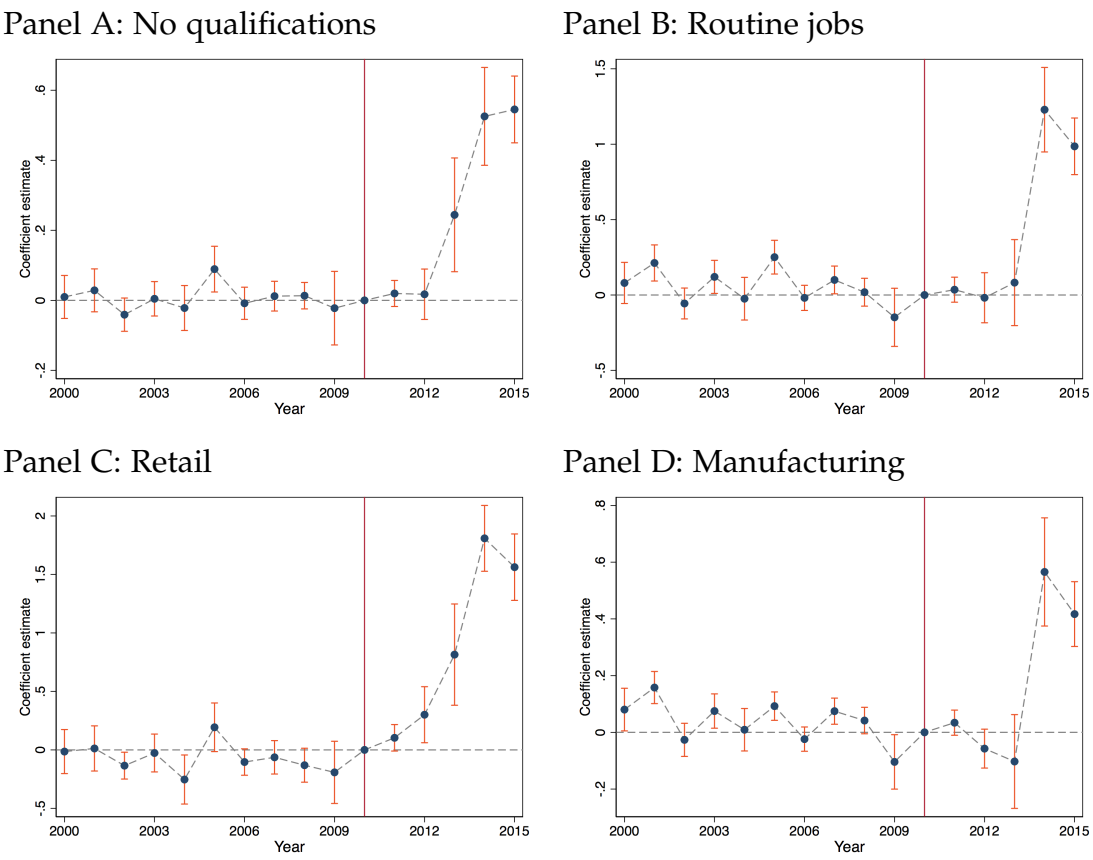
Notes: The dependent variable is the percentage of votes for UKIP in local council elections. The sample is restricted to only include elections where UKIP ran across districts in which UKIP contested at least 50% of the races. Panel A uses the share of the resident population with no formal qualifications as of 2001. Panel B uses the share of the resident population in Routine jobs as per the National Socio-Economic Classification of Occupations as of 2001. Panel C uses the share of the resident working age population employed in the Retail sector, while panel D uses the share of the resident working age population employed in Manufacturing. The graph plots point estimates of the interaction between these cross sectional measures and a set of year fixed effects. All regression include local authority district fixed effects and election wave by NUTS1 region by year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Figure C8: Robustness to controlling for more demanding time effects: Election wave by Region by Year – Non-parametric effect of educational qualification, socio-economic status, and sectoral employment of the resident population as of 2001 on support for UKIP over time



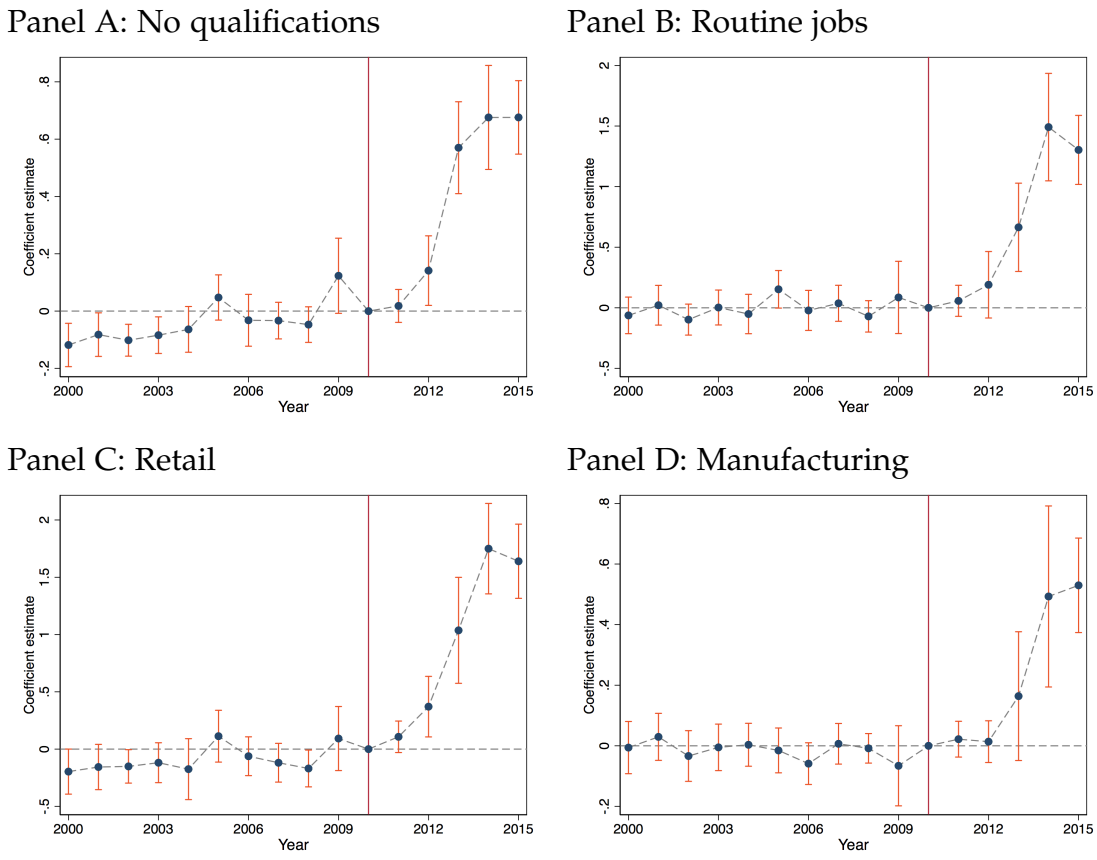
Notes: The dependent variable is the percentage of votes for UKIP in local council elections. Panel A uses the share of the resident population with no formal qualifications as of 2001. Panel B uses the share of the resident population in Routine jobs as per the National Socio-Economic Classification of Occupations as of 2001. Panel C uses the share of the resident working age population employed in the Retail sector, while panel D uses the share of the resident working age population employed in Manufacturing. The graph plots point estimates of the interaction between these cross sectional measures and a set of year fixed effects. All regression include local authority district fixed effects and election wave by NUTS1 region by year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Figure C9: Robustness to controlling for less demanding time effects: Year FE – Non-parametric effect of educational qualification, socio-economic status, and sectoral employment of the resident population as of 2001 on support for UKIP over time



Notes: The dependent variable is the percentage of votes for UKIP in local council elections. Panel A uses the share of the resident population with no formal qualifications as of 2001. Panel B uses the share of the resident population in Routine jobs as per the National Socio-Economic Classification of Occupations as of 2001. Panel C uses the share of the resident working age population employed in the Retail sector, while panel D uses the share of the resident working age population employed in Manufacturing. The graph plots point estimates of the interaction between these cross sectional measures and a set of year fixed effects. All regression include local authority district fixed effects and year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Figure C10: Robustness to measurement of baseline characteristics - Focusing on UK born population shares – Non-parametric effect of educational qualification, socio-economic status, and sectoral employment of the resident population as of 2001 on support for UKIP over time



Notes: The dependent variable is the percentage of votes for UKIP in local council elections. Panel A uses the share of the UK born resident population with no formal qualifications as of 2001. Panel B uses the share of the UK born resident population in Routine jobs as per the National Socio-Economic Classification of Occupations as of 2001. Panel C uses the share of the UK born resident working age population employed in the Retail sector, while panel D uses the share of the UK born resident working age population employed in Manufacturing. The graph plots point estimates of the interaction between these cross sectional measures and a set of year fixed effects. All regression include local authority district fixed effects and NUTS1 region by year fixed effects. Standard errors are clustered at the district level with 90% confidence bands indicated.

Table C1: Where do UKIP voters post 2010 come from? Studying local elections

			Other parties		
	UKIP	Turnout	Con	Lab	LD
	(1)	(2)	(3)	(4)	(5)
Panel A: No qualifications					
𝟙(Year>2010) × % with No qual. (2001)	42.746	-2.326	-25.067	-0.226	-3.668
	(5.257)	(4.373)	(5.432)	(6.508)	(6.392)
Mean of DV	4.49	42.5	37.2	25.8	19.9
Local election districts	345	345	345	345	345
Observations	3259	3258	3259	3259	3259
Panel B: Routine jobs					
𝟙(Year>2010) × % working in Routine occ (2001)	70.572	-8.372	-37.275	-15.666	19.746
	(11.375)	(8.452)	(11.182)	(12.075)	(13.700)
Mean of DV	4.49	42.5	37.2	25.8	19.9
Local election districts	345	345	345	345	345
Observations	3259	3258	3259	3259	3259
Panel C: Retail					
𝟙(Year>2010) × % working in Retail (2001)	109.098	-3.445	-41.989	-36.801	25.956
	(13.794)	(8.552)	(11.774)	(16.580)	(16.126)
Mean of DV	4.49	42.5	37.2	25.8	19.9
Local election districts	345	345	345	345	345
Observations	3259	3258	3259	3259	3259
Panel D: Manufacturing					
𝟙(Year>2010) × % working in Manuf (2001)	24.164	-7.087	-7.246	-2.400	18.796
	(6.398)	(5.710)	(7.592)	(8.012)	(9.786)
Mean of DV	4.49	42.5	37.2	25.8	19.9
Local election districts	345	345	345	345	345
Observations	3259	3258	3259	3259	3259

Notes: All regressions control for local authority district and NUTS1 region by time fixed effects. Standard errors are adjusted clustering at the local authority district level with stars indicating *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table C2: Where do UKIP voters post 2010 come from? Studying European Parliamentary elections

			Other parties		
	UKIP	Turnout	Con	Lab	LD
	(1)	(2)	(3)	(4)	(5)
Panel A: No qualifications					
𝟙(Year>2010) × % with No qual. (2001)	36.255	0.167	-0.166	0.180	0.000
	(4.057)	(0.032)	(0.025)	(0.048)	(0.023)
Mean of DV	22.4	.369	.282	.191	.116
Local election districts	346	346	346	346	346
Observations	1038	1038	1038	1038	1038
Panel B: Routine jobs					
𝟙(Year>2010) × % working in Routine occ (2001)	73.052	0.294	-0.255	0.213	0.050
	(7.843)	(0.062)	(0.051)	(0.083)	(0.043)
Mean of DV	22.4	.369	.282	.191	.116
Local election districts	346	346	346	346	346
Observations	1038	1038	1038	1038	1038
Panel C: Retail					
𝟙(Year>2010) × % working in Retail (2001)	77.883	0.268	-0.322	0.067	0.079
	(11.628)	(0.095)	(0.064)	(0.131)	(0.061)
Mean of DV	22.4	.369	.282	.191	.116
Local election districts	346	346	346	346	346
Observations	1038	1038	1038	1038	1038
Panel D: Manufacturing					
𝟙(Year>2010) × % working in Manuf (2001)	29.486	0.019	-0.020	0.067	0.019
	(4.412)	(0.046)	(0.029)	(0.055)	(0.035)
Mean of DV	22.4	.369	.282	.191	.116
Local election districts	346	346	346	346	346
Observations	1038	1038	1038	1038	1038

Notes: All regressions control for state by time fixed effects and local government area (LGA) fixed effects. Standard errors are adjusted for two way clustering by time and LGA with stars indicating *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table C3: Where do UKIP voters post 2010 come from? Studying Westminster Parliamentary elections

			Other parties		
	UKIP	Turnout	Con	Lab	LD
	(1)	(2)	(3)	(4)	(5)
Panel A: No qualifications					
post2010 × % with No qual (2001)	48.427	-2.360	-27.753	-13.273	19.139
	(3.919)	(2.791)	(3.742)	(5.691)	(4.617)
Mean of DV	6	63	35.7	35.6	18.3
Local election districts	506	530	530	530	530
Observations	1480	1661	1659	1659	1659
Panel B: Routine jobs					
post2010 × % working in Routine occ (2001)	102.893	-27.214	-16.792	-75.506	32.439
	(6.917)	(4.881)	(8.324)	(10.719)	(9.478)
Mean of DV	6	63	35.7	35.6	18.3
Local election districts	506	530	530	530	530
Observations	1480	1661	1659	1659	1659
Panel C: Retail					
post2010 × % working in Retail (2001) 121.046	-35.095	6.939	-111.191	34.649	
	(11.063)	(7.480)	(12.098)	(14.068)	(12.379)
Mean of DV	6	63	35.7	35.6	18.3
Local election districts	506	530	530	530	530
Observations	1480	1661	1659	1659	1659
Panel D: Manufacturing					
post2010 × % working in Manuf (2001) 42.141	-19.641	3.241	-42.088	18.964	
	(4.297)	(2.672)	(4.870)	(5.795)	(5.157)
Mean of DV	6	63	35.7	35.6	18.3
Local election districts	506	530	530	530	530
Observations	1480	1661	1659	1659	1659

Notes: All regressions control for state by time fixed effects and local government area (LGA) fixed effects. Standard errors are adjusted for two way clustering by time and LGA with stars indicating *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table C4: Where do UKIP voters post 2010 come from? Studying local elections *prior to 2013*

			Other parties		
	UKIP	Turnout	Con	Lab	LD
	(1)	(2)	(3)	(4)	(5)
Panel A: No qualifications					
$\mathbb{1}$(Year>2010) × % with No qual. (2001)	9.630	-6.431	-21.595	23.928	-6.244
	(3.802)	(4.616)	(6.029)	(7.328)	(6.646)
Mean of DV	1.57	41.4	37.7	25.8	22
Local election districts	345	345	345	345	345
Observations	2612	2612	2612	2612	2612
Panel B: Routine jobs					
$\mathbb{1}$(Year>2010) × % working in Routine occ (2001)	9.723	-15.657	-30.527	35.622	9.399
	(7.610)	(8.801)	(12.041)	(13.635)	(13.934)
Mean of DV	1.57	41.4	37.7	25.8	22
Local election districts	345	345	345	345	345
Observations	2612	2612	2612	2612	2612
Panel C: Retail					
$\mathbb{1}$(Year>2010) × % working in Retail (2001)	30.152	-10.296	-17.581	11.671	17.527
	(10.990)	(8.616)	(12.753)	(20.722)	(16.993)
Mean of DV	1.57	41.4	37.7	25.8	22
Local election districts	345	345	345	345	345
Observations	2612	2612	2612	2612	2612
Panel D: Manufacturing					
$\mathbb{1}$(Year>2010) × % working in Manuf (2001)	2.378	-4.348	0.212	17.115	12.985
	(3.454)	(5.329)	(7.044)	(8.480)	(9.530)
Mean of DV	1.57	41.4	37.7	25.8	22
Local election districts	345	345	345	345	345
Observations	2612	2612	2612	2612	2612

Notes: All regressions control for local authority district and NUTS1 region by time fixed effects. Standard errors are adjusted clustering at the local authority district level with stars indicating *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.