Occupation and the Political Economy of Trade: Job routineness, offshorability and protectionist sentiment

Supplemental Appendix

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1 Occupation measures

We use data provided by David Autor to construct measures of routineness.[1] The Acemoglu-Autor[2] measures are available using the 2000 US Standard Occupational Classification (SOC), while the ISSP reports occupations using the 1988 International Standard Classification of Occupations (ISCO-88) scheme. We utilize a concordance table to match between the two. In cases where an ISCO-88 occupation includes multiple SOC occupations, we use the average scores for those SOC occupations. For example, consider an excerpt from the ISCO-88 major group "Professionals (2)," which is structured as follows:[3]

- Physical, Mathematical and Engineering Science Professionals (21)
  - Physicists, chemists and related professionals (211)
    - Physicists and astronomers (2111)
    - Meteorologists (2112)
    - Chemists (2113)
    - Geologists and geophysicists (2114)

Therefore, if an individual is coded 211, we assigned the mean routineness score for the occupations 2111-2114. We match iteratively to ensure that occupations are scored at the most disaggregated level possible. We also use the offshorability index in robustness checks.

Second, to measure offshorability, we use a dummy dummy variable based on a categorical measure of offshorability.[4] This index ranges from 0 to 100, but Blinder advises that the measure is best thought of as a categorical variable with four categories: highly

[1]The original data is available at `http://economics.mit.edu/faculty/dautor/data/acemoglu`.

[2]Acemoglu and Autor 2011.

[3]See classification at `http://www.ilo.org/public/english/bureau/stat/isco/isco88/major.htm`.

[4]Blinder 2007.

non-offshorable (0-25), non-offshorable (26-50), offshorable (51-75), and highly offshorable (76-100). Our dummy variable, *Offshorable occupation*, is equal to one for individuals in the offshorable and highly offshorable categories, and zero otherwise.

2 Additional information on industry measures

- Industries of comparative advantage (disadvantage) are defined as those for which adjusted net imports are negative (positive). The adjustment parameter, λ_k, is equal to $\frac{\sum(M_{jk}-X_{jk})}{\sum M_{jk}}$, where j represents tradable goods industries in agriculture, mining and quarrying, and manufacturing, and M and X are imports and exports respectively. Revealed comparative advantage CA_{jk} is equal to one if $M_{jk} - X_{jk} - \lambda_k M_{jk} < 0$. Similarly, comparative disadvantage is CD_{jk} is equal to one if $M_{jk} - X_{jk} - \lambda_k M_{jk} > 0$.

- *Industry comparative advantage and disadvantage, weighted by occupation.* To calculate a measure of exposure to trade for individuals, we combine data on imports and exports from the OECD at the 4 digit SIC level with the distribution of occupational employment across industries from the BLS. Thus, exposure to trade for occupation i is calculated as the weighted sum of comparative advantage (disadvantage) in each industry j, with weights equal to the share of employment of occupation i in industry j in country k: $\sum \mathrm{CA_{jk}} \times \frac{\mathrm{Employment_{ij}}}{\mathrm{Total\ employment_i}}$. We include both manufacturing and primary goods industries.

3 Additional descriptive statistics

Figure A1: Mean level of support for trade protection by country in 2013

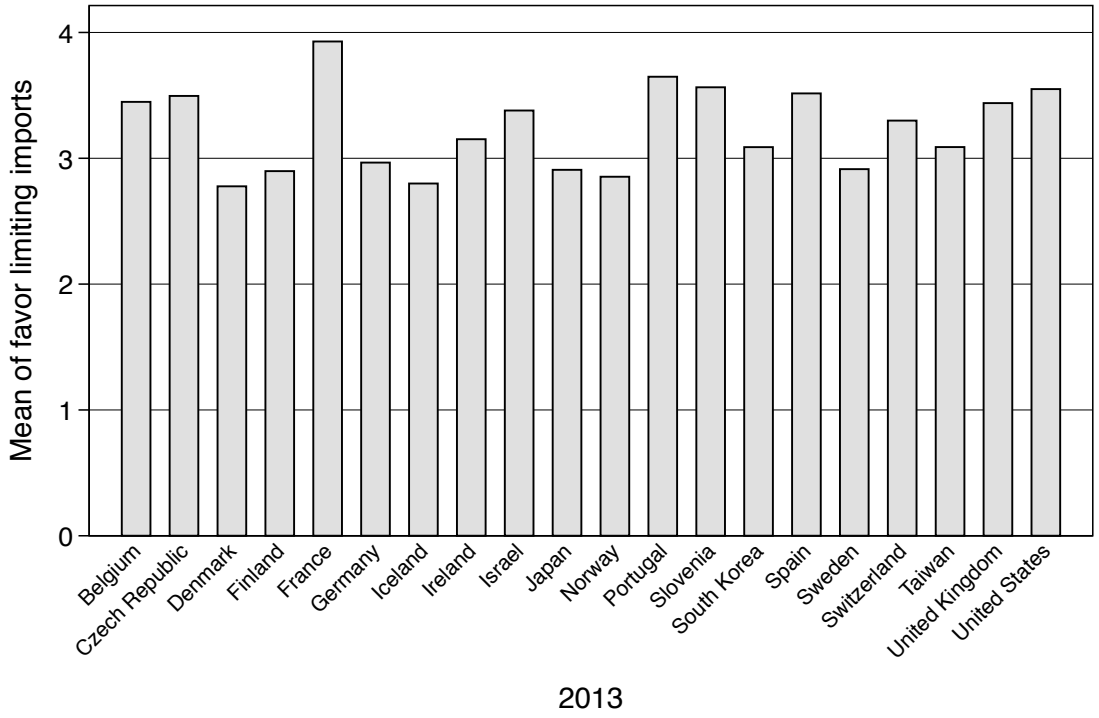


Figure A2: Distribution of support for trade protection by country in 2003

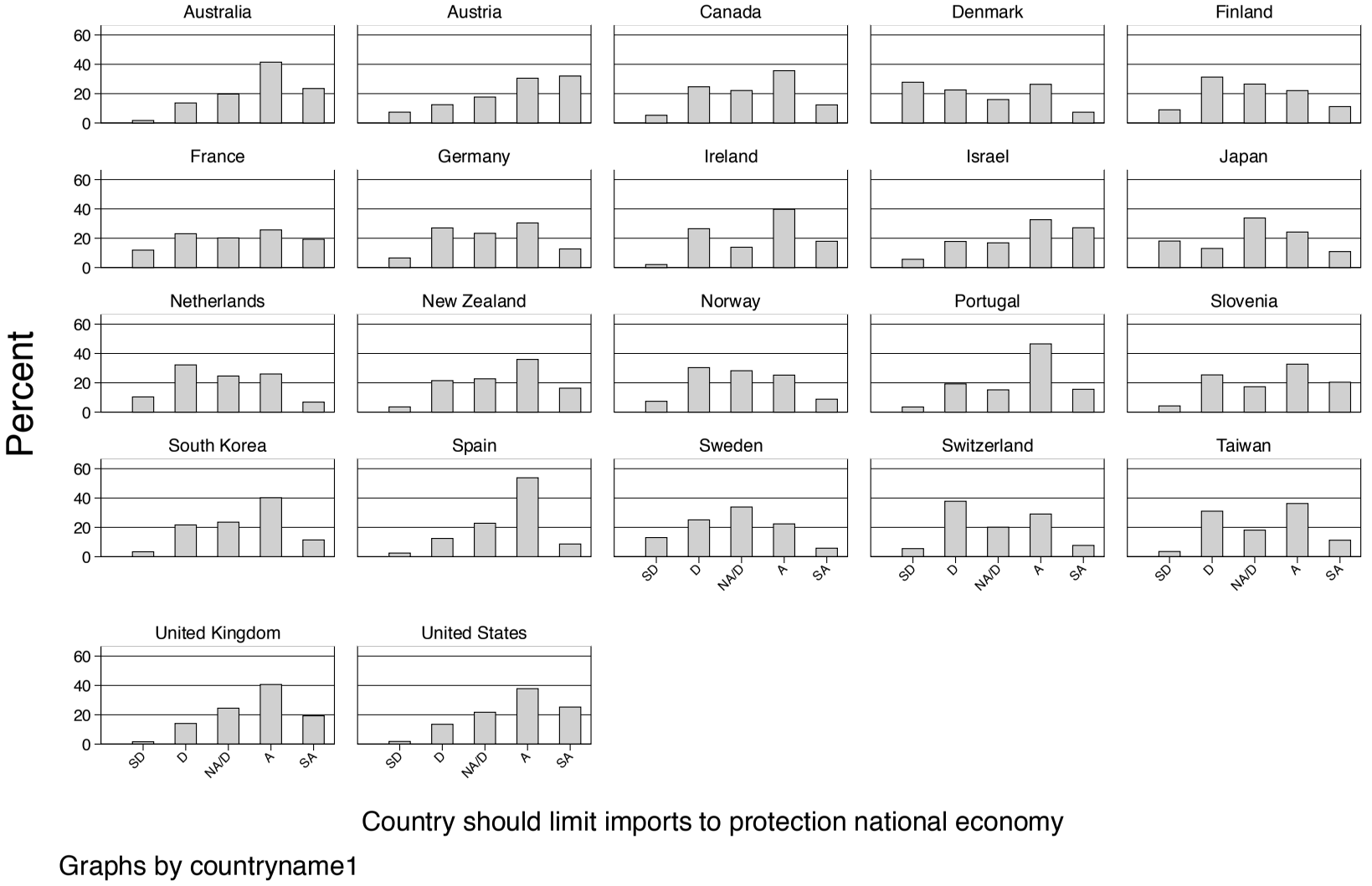


Figure A3: Distribution of support for trade protection by country in 2013

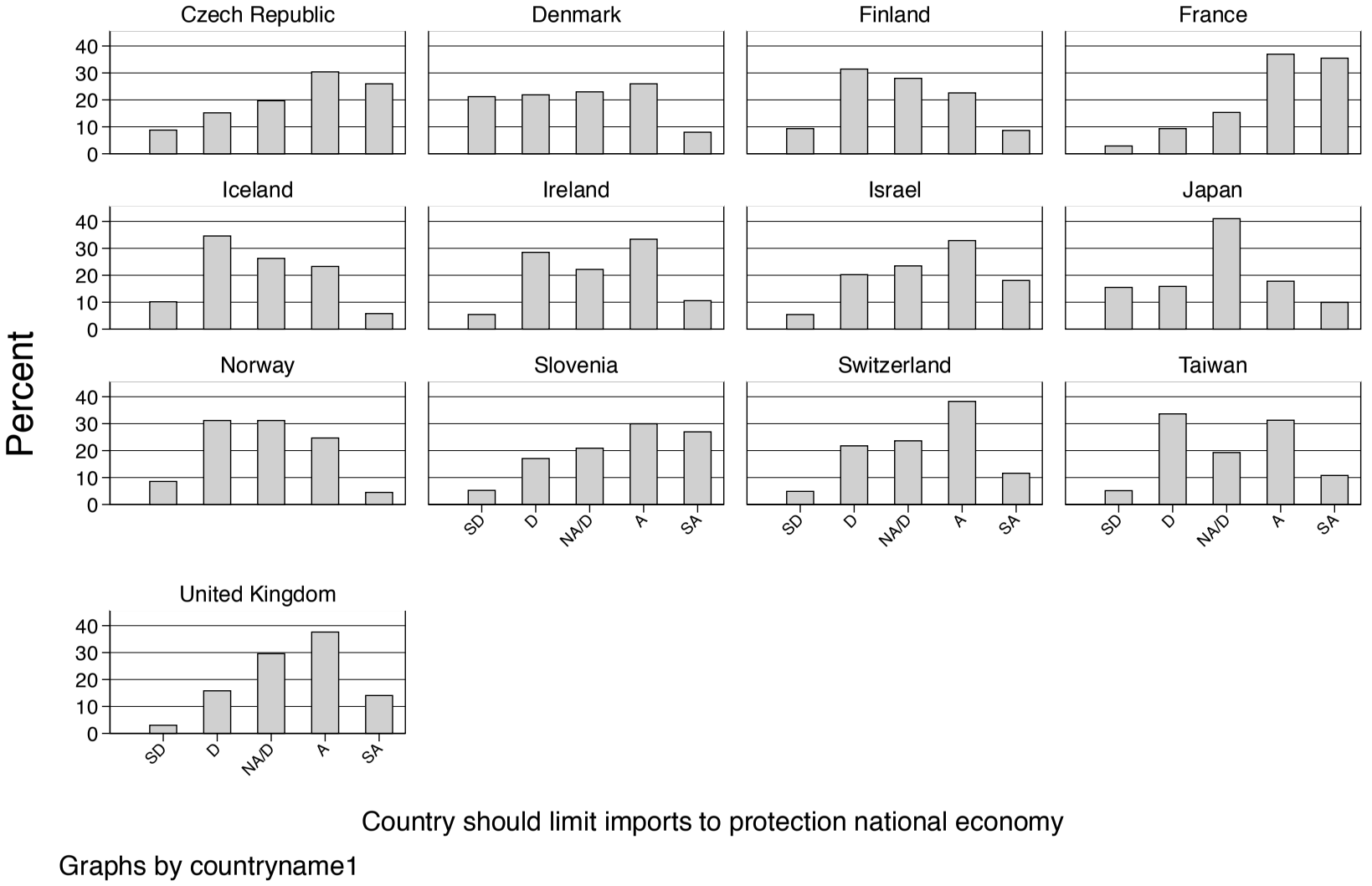


Table A1: Correlation Matrix in 2003

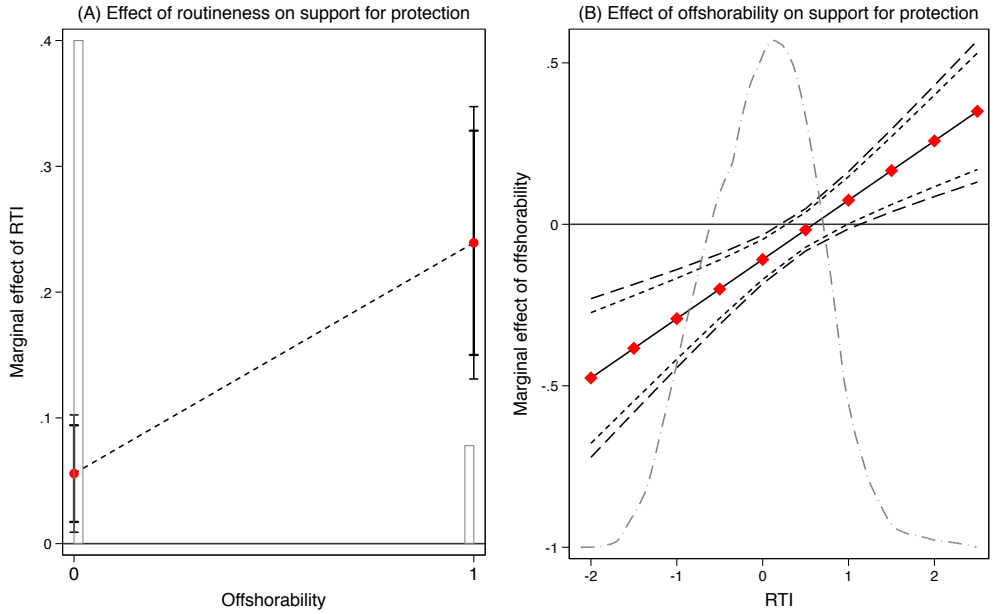
	1	2	3	4	5	6	7	8	9	10	11	12	13
Limit imports (1)	1.00												
Routine task intensity (2)	0.14	1.00											
	(0.00)												
Offshorable (3)	-0.02	0.22	1.00										
	(0.00)	(0.00)											
Yrs. schooling (4)	-0.22	-0.38	0.04	1.00									
	(0.00)	(0.00)	(0.00)										
Log comp. adv. (5)	-0.06	0.10	0.25	-0.03	1.00								
	(0.00)	(0.00)	(0.00)	(0.00)									
Log comp. dis. (6)	-0.01	0.11	0.23	-0.07	0.78	1.00							
	(0.46)	(0.00)	(0.00)	(0.00)	(0.00)								
Nationalism (7)	0.30	0.10	-0.01	-0.18	0.01	0.05	1.00						
	(0.00)	(0.00)	(0.43)	(0.00)	(0.27)	(0.00)							
Unemployed (8)	0.01	0.06	0.00	-0.06	0.00	0.01	-0.01	1.00					
	(0.46)	(0.00)	(0.56)	(0.00)	(0.65)	(0.27)	(0.17)						
Union (9)	-0.07	-0.07	-0.02	0.09	0.06	-0.03	-0.03	-0.03	1.00				
	(0.00)	(0.00)	(0.03)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)					
Female (10)	0.10	0.06	-0.02	0.00	-0.24	-0.27	-0.04	-0.01	-0.06	1.00			
	(0.00)	(0.00)	(0.00)	(0.60)	(0.00)	(0.00)	(0.00)	(0.48)	(0.00)				
Age (11)	0.07	-0.00	-0.03	-0.27	0.04	0.04	0.16	-0.07	0.10	-0.07	1.00		
	(0.00)	(0.52)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)			
AA Routineness (12)	0.11	0.72	0.30	-0.29	0.28	0.28	0.08	0.05	0.01	-0.07	-0.00	1.00	
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.07)	(0.00)	(0.84)		
AA Offshorability (13)	-0.07	0.17	0.25	0.09	-0.00	0.03	-0.03	-0.01	-0.09	0.13	-0.00	-0.19	1.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.90)	(0.00)	(0.00)	(0.24)	(0.00)	(0.00)	(0.70)	(0.00)	
Protectionism toward MNCs (14)	0.39	0.08	-0.04	-0.16	-0.07	-0.03	0.18	0.01	0.03	0.06	0.09	0.05	-0.06
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.05)	(0.00)	(0.00)	(0.00)	(0.00)	

Table A2: Correlation Matrix in 2013

	1	2	3	4	5	6	7	8	9	10	11	12	13
Limit imports (1)	1.00												
Routine task intensity (2)	0.12	1.00											
	(0.00)												
Offshorable (3)	-0.06	0.18	1.00										
	(0.00)	(0.00)											
Yrs. of schooling (4)	-0.22	-0.37	0.05	1.00									
	(0.00)	(0.00)	(0.00)										
Log comp. adv. (5)	-0.04	0.08	0.24	0.01	1.00								
	(0.00)	(0.00)	(0.00)	(0.05)									
Log comp. adv. (6)	-0.02	0.09	0.21	0.00	0.69	1.00							
	(0.01)	(0.00)	(0.00)	(0.68)	(0.00)								
Nationalism (7)	0.21	0.08	-0.00	-0.20	0.01	0.04	1.00						
	(0.00)	(0.00)	(0.88)	(0.00)	(0.09)	(0.00)							
Unemployed (8)	0.01	-0.00	-0.02	-0.01	-0.00	-0.01	-0.00	1.00					
	(0.34)	(0.93)	(0.01)	(0.34)	(0.53)	(0.19)	(0.85)						
Union (9)	-0.07	-0.08	0.02	0.06	0.02	-0.05	0.01	0.02	1.00				
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.33)	(0.01)					
Female (10)	0.09	0.03	-0.04	0.02	-0.18	-0.21	-0.03	0.02	-0.01	1.00			
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.14)				
Age (11)	0.04	-0.01	-0.01	-0.09	0.03	0.01	0.06	0.02	0.06	-0.01	1.00		
	(0.00)	(0.07)	(0.36)	(0.00)	(0.00)	(0.22)	(0.00)	(0.00)	(0.00)	(0.30)			
Routineness (12)	0.09	0.72	0.25	-0.25	0.23	0.24	0.07	-0.00	-0.02	-0.11	-0.01	1.00	
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.60)	(0.02)	(0.00)	(0.14)		
Offshorability (13)	-0.08	0.14	0.26	0.07	0.04	0.05	-0.03	-0.01	-0.05	0.11	-0.01	-0.24	1.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.34)	(0.00)	(0.00)	(0.17)	(0.00)	
Protectionism toward MNCs (14)	0.41	0.10	-0.04	-0.17	-0.05	-0.03	0.13	-0.01	-0.05	0.03	0.02	0.08	-0.07
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.38)	(0.00)	(0.00)	(0.00)	(0.00)	

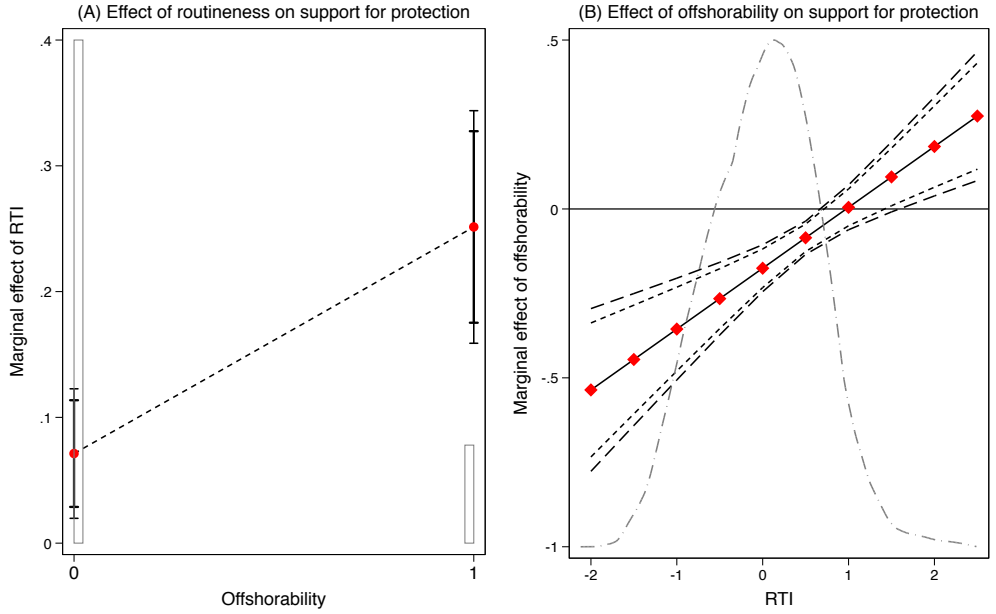
4 Additional marginal effects plots

Figure A4: Marginal effects plots for restricted 2003 sample in Table 3, Model 5



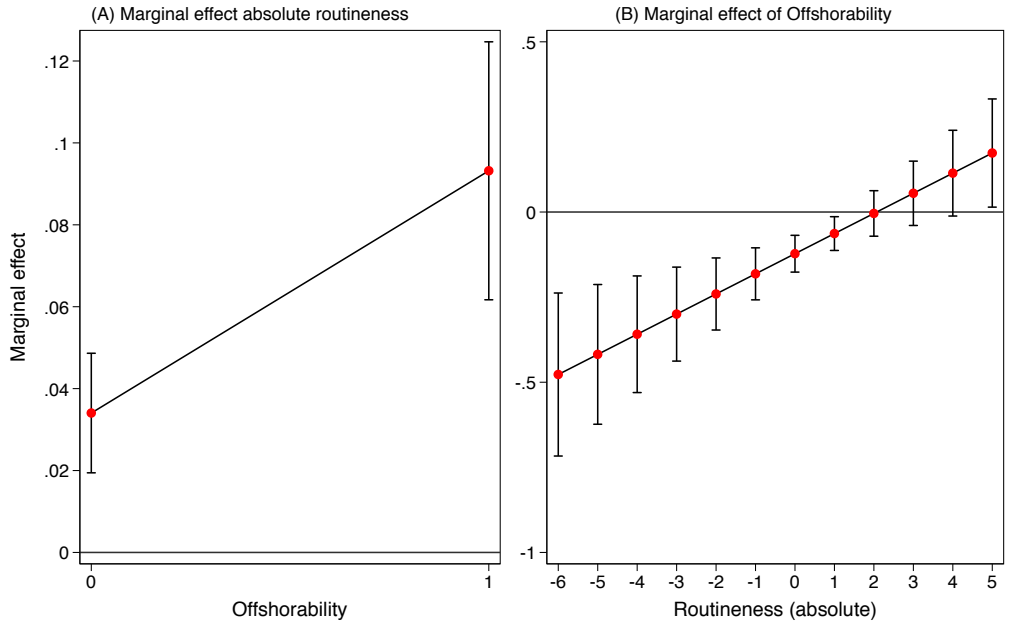
90 and 95 % confidence intervals.

Figure A5: Marginal effects plots for restricted 2013 sample in Table 3, Model 6



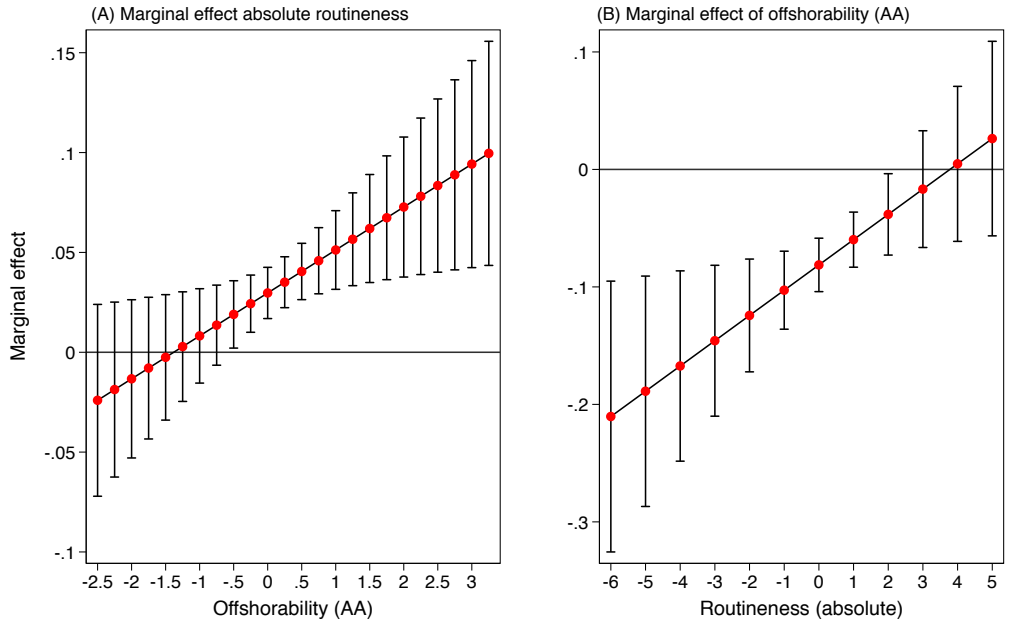
90 and 95 % confidence intervals.

Figure A6: Marginal effects plot for Table 5, Model 1 in 2003



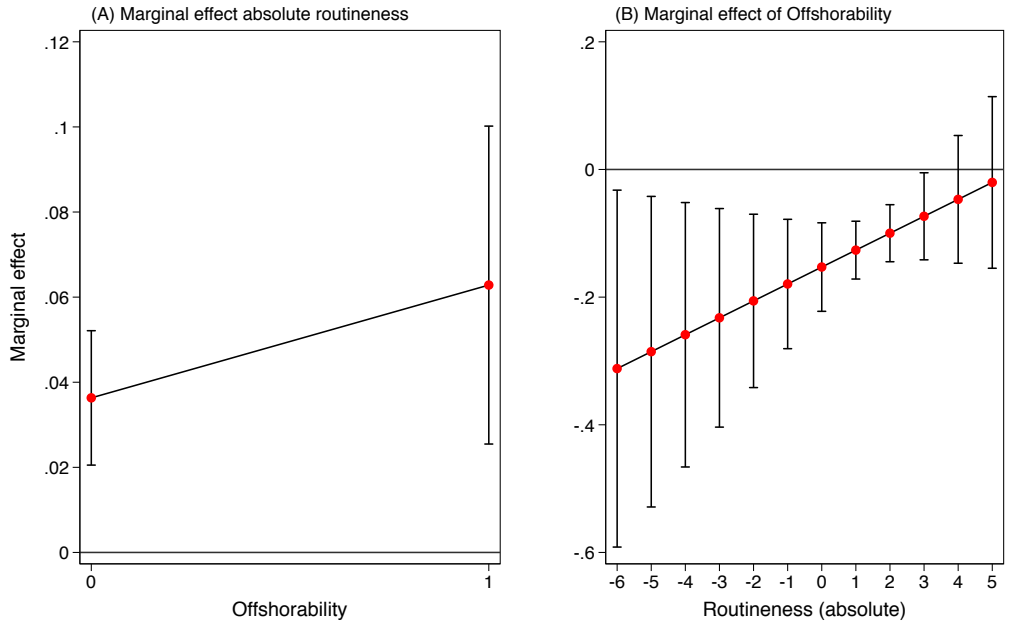
95 % confidence interval

Figure A7: Marginal effects plot for Table 5, Model 2 in 2003



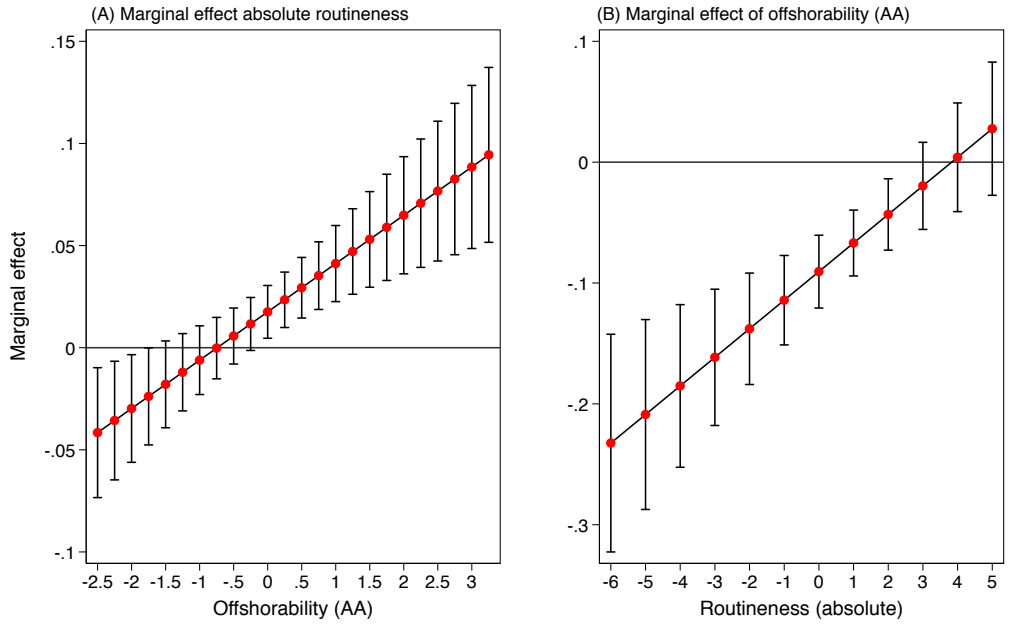
95 % confidence interval

Figure A8: Marginal effects plot for Table 5, Model 3 in 2013



95 % confidence interval

Figure A9: Marginal effects plot for Table 5, Model 4 in 2013



95 % confidence interval

5 Ordered logit

In Table A3, we present the results of the main models in the main text for 2003 and 2013 (Table 3), estimated with ordered logistic regression instead of ordinary least squares. The results for the main relationships of interest are robust to this alternative estimation method and the marginal effects for routineness and offshorability follow similar patterns to those previously presented. These are available upon request.

6 Explanatory power of occupation model

In the main text we present a comparison of BICs as evidence of the explanatory power of the occupation model. The models that form the basis of Figure 5 of the main text are provided in Tables A4 and A5. Here we further discuss the motivation underlying this analysis and interpretation of the results here. In our view, individuals can face pressure from globalization along a number of dimensions.[5] Thus it would invite model misspecification to test the factor, industry and occupation models as necessarily competing theories.[6] Additionally, we must acknowledge the limitations of using the ISSP data as a direct test of RV, because the survey does not explicitly ask about respondents' industries. For these reasons, we examine the explanatory power of five different combinations of labor market variables (suggested by the factor, industry and occupation models), some specifications which are nested and others which are not.

The first model is the "factor-only" model. This model specification includes years of schooling,[7] but excludes occupation and industry characteristics. We next estimate a "factor + industry" model, which includes both years of schooling and the logs of comparative advantage and disadvantage. In both samples, the addition of industry measures does not improve the BIC over the "factor-only" model. We next examine the "factor + occupation"

[5]See for example Jensen 2011.

[6]In contrast, if the goal is to test competing theories, a so-called garbage can regression including variables from all competing theories will not be an accurate test of any of the theories, and thus we should consider for instance, finite mixture models and non-nested model tests, e.g. Clarke 2007; Imai and Tingley 2012.

[7]And all controls and fixed effects from the previous table.

Table A3: Ordered logit robustness check for Table 3, main text

	2003		2013	
	1	2	3	4
Routineness	0.149***	0.111***	0.140***	0.112***
	(0.028)	(0.027)	(0.033)	(0.033)
Offshorable	-0.109***	-0.206***	-0.224***	-0.283***
	(0.041)	(0.048)	(0.041)	(0.045)
Routineness × Offshorable		0.348***		0.279***
		(0.062)		(0.059)
Years of schooling	-0.094***	-0.093***	-0.087***	-0.087***
	(0.007)	(0.007)	(0.009)	(0.009)
Comparative advantage (log)	-0.018***	-0.019***	0.003	0.004
	(0.007)	(0.007)	(0.009)	(0.009)
Comparative disadvantage (log)	0.011*	0.013**	-0.004	-0.004
	(0.006)	(0.006)	(0.007)	(0.007)
Nationalism	0.305***	0.305***	0.247***	0.248***
	(0.014)	(0.014)	(0.013)	(0.013)
Unemployed	0.037	0.038	0.003***	0.003***
	(0.112)	(0.112)	(0.001)	(0.001)
Union member	0.046	0.041	0.145***	0.142***
	(0.039)	(0.039)	(0.050)	(0.049)
Female	0.407***	0.405***	0.357***	0.355***
	(0.045)	(0.046)	(0.034)	(0.034)
Age	-0.001	-0.001	0.000	0.000
	(0.002)	(0.002)	(0.000)	(0.000)
Threshold 1	-0.620***	-0.627***	-2.420***	-2.418***
	(0.230)	(0.229)	(0.237)	(0.236)
Threshold 2	1.350***	1.344***	-0.618***	-0.614***
	(0.206)	(0.205)	(0.180)	(0.179)
Threshold 3	2.424***	2.420***	0.549***	0.553***
	(0.237)	(0.236)	(0.199)	(0.198)
Threshold 4	4.320***	4.317***	2.343***	2.347***
	(0.262)	(0.262)	(0.221)	(0.220)
Observations	18772	18772	22560	22560
Log likelihood	-26212.87	-26201.19	-32029.84	-32021.47
BIC	52553.66	52540.14	64189.99	64183.28

Cluster robust standard errors in parentheses. Country fixed effects included
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

model, which includes task routineness, offshorability and the interaction between them. This model is preferred on the basis of information criteria over the previous two models in both the 2003 and 2013 samples. We next present the "factor + industry + occupation" model from Models 2 and 4 of Table 3. The inclusion of factor, industry and occupation controls does no better than the simpler, "factor + occupation" model in terms of the BIC.[8] Finally, we add the interaction between offshorability and education to the "factor + industry + occupation" model, as suggested by the work of Walter (2017). This "Combined offshorability" model includes interactions between offshorability and routineness and also offshorability and years of schooling; the combined model has a lower BIC than the "Factor + industry + occupation", but a higher BIC score than the "Factor + occupation model." In both 2003 and 2013, the BIC indicate the "Factor + industry + occupation" and "Factor + occupation" models are preferable to the more complex "Combined offshorability." However in 2003, the AIC and the statistical significance on the interaction between offshorability and schooling provide evidence in favor of the "Combined offshorability" model. We prefer the BIC over the AIC because the former penalizes complex models more, and thus proceed with the "Factor + industry + occupation" model, but we provide both AICs and BICs for readers to evaluate both.

We also evaluate differences in explanatory power more systematically by reporting the results of nested and non-nested model tests.[9] First, block-F tests on the coefficients for offshorability, routineness and the interaction between them are statistically significant for all interactive models in Table 3 of the main text. The results of the Clarke test comparing the "factor+occupation" model and the "factor + industry" model indicate that the model with occupation is preferred to the industry model in both 2003 and 2013.[10]

[8]We do not present models that exclude education, because years of schooling clearly influences attitudes toward trade in our results and in the existing literature.

[9]Developed by Clarke 2007.

[10]This test was implemented using code provided by Clarke at `https://www.rochester.edu/college/psc/clarke/Dublin/Modsel.R`.

Table A4: Models for BIC figure in 2003

	1	2	3	4	5
RTI			0.066***	0.068***	0.072***
			(0.016)	(0.016)	(0.016)
Offshorability			-0.127***	-0.118***	-0.108***
			(0.026)	(0.028)	(0.030)
RTI × Offshorability			0.195***	0.201***	0.159***
			(0.043)	(0.041)	(0.044)
Years of schooling	-0.060***	-0.060***	-0.054***	-0.054***	-0.052***
	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)
Offshorability × Years of schooling					-0.013***
					(0.004)
Comparative advantage (log)		-0.009**		-0.010***	-0.011***
		(0.004)		(0.004)	(0.004)
Comparative disadvantage (log)		0.005		0.006*	0.006*
		(0.004)		(0.003)	(0.003)
Nationalism	0.168***	0.168***	0.166***	0.166***	0.166***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Unemployed	0.017	0.018	0.011	0.012	0.012
	(0.065)	(0.065)	(0.064)	(0.065)	(0.065)
Union member	0.027	0.027	0.025	0.025	0.023
	(0.023)	(0.023)	(0.023)	(0.022)	(0.022)
Female	0.249***	0.243***	0.241***	0.235***	0.234***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Age	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	2.107***	2.091***	2.043***	2.025***	1.336***
	(0.107)	(0.111)	(0.108)	(0.113)	(0.089)
Observations	18773	18773	18772	18772	18772
Adjusted R^2	0.18	0.19	0.19	0.19	0.19
BIC	55213.60	55225.98	55177.87	55189.25	55194.93
AIC	55166.56	55163.26	55107.31	55103.01	55100.85

Cluster robust standard errors in parentheses. Country fixed effects included
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A5: Models for BIC figure, 2013

	1	2	3	4	5
RTI			0.064***	0.064***	0.068***
			(0.020)	(0.021)	(0.021)
Offshorability			-0.163***	-0.163***	-0.150***
			(0.028)	(0.027)	(0.030)
RTI × Offshorability			0.165***	0.166***	0.134**
			(0.036)	(0.037)	(0.048)
Years of schooling	-0.057***	-0.057***	-0.051***	-0.051***	-0.050***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Offshorability × Years of schooling					-0.011
					(0.007)
Comparative advantage (log)		-0.000		0.002	0.002
		(0.005)		(0.005)	(0.005)
Comparative disadvantage (log)		-0.002		-0.002	-0.002
		(0.004)		(0.004)	(0.004)
Nationalism	0.138***	0.138***	0.138***	0.138***	0.138***
	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)
Unemployed	0.002***	0.002***	0.002**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Union member	0.085***	0.085***	0.086***	0.086***	0.085***
	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)
Female	0.217***	0.214***	0.209***	0.209***	0.208***
	(0.022)	(0.021)	(0.020)	(0.020)	(0.020)
Constant	3.137***	3.126***	3.088***	3.089***	2.429***
	(0.094)	(0.108)	(0.097)	(0.113)	(0.070)
Offshorability					
Observations	22609	22609	22560	22560	22560
Adjusted R^2	0.17	0.17	0.18	0.18	0.18
BIC	67124.88	67143.59	66927.50	66946.80	66953.35
AIC	67076.73	67079.38	66855.29	66858.54	66857.07

Cluster robust standard errors in parentheses. Country fixed effects included
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

7 Additional measures of the dependent variable

In this section, we examine multiple measures of protectionist sentiment. Given that offshoring can encompass both trade in goods and services, as well the activity of multinationals, we explore these different dimensions of protectionist sentiment.

In Tables A6 and A7, we present five different measures of protectionist sentiment, where higher values on all indicate greater protectionist sentiment. The first, for ease of comparison, is the main dependent variable, "Limit imports," presented in Table 3 of the main text. Next we examine "Better products," which asks respondents how much they agree with the statment that "Trade leads to better products becoming available in [Country]." Then we include the "Trade protection index," which is calculated by equal to adding together responses on limit imports and better products (scaled such that higher values mean more support for protection). We next present the main robustness check from the main text in which we examine the following question on multinational corporations as an alternative measure of protectionism: "Large international businesses are doing more and more damage to local business," where higher values indicate greater protectionist sentiment (Table 4 of main text). Finally, we examine attitudes toward immigration as a final measure of protectionist sentiment, looking at how much respondents agree with the statement that "Immigrants take jobs away from people who were born in [Country]." From a pure labor market point of view, attitudes toward immigration may be shaped by similar concerns as those of trade.[11]

[11]See for example Malhotra, Margalit, and Mo (2013).

Table A6: Robustness to alternative measures of protectionist sentiment in 2003

	Limit imports	Better products	Index	MNCs	Immigrants
	1	2	3	4	5
RTI	0.068***	-0.005	0.063**	0.038***	0.129***
	(0.016)	(0.016)	(0.024)	(0.013)	(0.022)
Offshorability	-0.118***	-0.043*	-0.162***	-0.111***	-0.063***
	(0.028)	(0.022)	(0.044)	(0.031)	(0.021)
RTI × Offshorability	0.201***	0.096***	0.296***	0.216***	0.032
	(0.041)	(0.031)	(0.061)	(0.041)	(0.050)
Observations	18772	18001	18001	17813	18459
Adjusted R^2	0.19	0.08	0.13	0.13	0.25
BIC	55189.25	46979.98	65112.99	50123.21	53354.08

Cluster robust standard errors in parentheses. Country fixed effects included

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A7: Robustness to alternative measures of protectionist sentiment in 2013

	Limit imports	Better products	Index	MNCs	Immigrants
	1	2	3	4	5
RTI	0.064***	-0.008	0.058*	0.075***	0.105***
	(0.021)	(0.017)	(0.030)	(0.017)	(0.022)
Offshorability	-0.163***	-0.052**	-0.213***	-0.095***	-0.103***
	(0.027)	(0.024)	(0.038)	(0.029)	(0.019)
RTI × Offshorability	0.166***	0.067	0.219**	0.142***	0.128***
	(0.037)	(0.057)	(0.080)	(0.044)	(0.039)
Observations	22560	21531	21531	21277	22159
R^2	0.18	0.04	0.12	0.14	0.21
BIC	66946.80	56951.06	79197.62	59735.31	65189.76

Cluster robust standard errors in parentheses. Country fixed effects included

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The coefficient on the interaction is positive and statistically significant in a majority of the models estimated in Tables A6 and A7. In 2003, we find a similar pattern with all the dependent variables, except for immigration (reported in Model 5), where the coefficient on the interaction is not statistically different from zero. However, we still find that those in routine intensive occupations are more likely to be protectionist with respect to immigration. A further point is that the explanatory power in Model 2 ("better products") is significantly lower than all other models, suggesting that this question does not necessarily capture the same dimension of preferences as the other survey items.[12]

Turning to the 2013 sample, we again find that the coefficient on the interaction term is positive and statistically significant in four of the five models. However, there are differences with respect to 2003. In 2013, the coefficient on the interaction is positive and statistically significant for models of limits on imports, trade protection index, MNCs and immigrants, but not better products. The explanatory power of the "better products" model is especially low in this sample.

8 Manufacturing as an alternative measure of industry exposure

In Table A8, we examine the robustness of the findings reported in Table 3 of the main text to an alternative measure of industry exposure to trade instead of comparative advantage and disadvantage: a dummy variable for those employed in manufacturing industries. The interaction between routineness and offshorability is again positive and statistically significant. Marginal effects plots are available upon request. The coefficient on manufacturing is positive and statistically significant, suggesting those in the manufacturing industry are more protectionist than those in non-manufacturing industries.

[12]Exploratory factor analysis confirms this intuition, with limit imports, MNCs, and immigrants all loading on the same factor and better products loading onto a second factor.

Table A8: Measuring industry with manufacturing dummy

	1 (2003)	2 (2013)
Routineness	0.057***	0.053**
	(0.015)	(0.019)
Offshorable	-0.131***	-0.170***
	(0.026)	(0.027)
Routineness × Offshorable	0.139***	0.094***
	(0.038)	(0.032)
Years of schooling	-0.051***	-0.049***
	(0.004)	(0.005)
Manufacturing	0.137***	0.171***
	(0.035)	(0.029)
Nationalism	0.165***	0.137***
	(0.008)	(0.006)
Unemployed	0.006	0.002**
	(0.065)	(0.001)
Union member	0.026	0.085***
	(0.022)	(0.029)
Female	0.256***	0.228***
	(0.027)	(0.021)
Age	-0.001	0.000
	(0.001)	(0.000)
Constant	1.993***	3.032***
	(0.108)	(0.094)
Observations	18772	22560
Adjusted R^2	0.19	0.18
BIC	55151.96	66879.69

Cluster robust standard errors in parentheses. Country fixed effects included
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

9 Additional analysis of interaction of offshorability and skill

In Tables A4 and A5 above, we present a number of model specifications. Here we take a closer look at whether the effect of education is conditional upon offshorability, as suggested by Walter (2017). Routineness, offshorability and school years are centered so that the unconditional coefficients may be interpreted as the variable of interest at the mean level of the conditioning variable. For each sample, we estimate a model that includes offshorability interacted with both routineness and years of schooling (Model 5 in both tables). Model 4 in both tables represents our main model specification (from main text) for ease of comparison. The coefficient on the interaction between routineness and offshorability remains positive and statistically different from zero in both 2003 and 2013, even after including an interaction between offshorability and years of schooling. The coefficient on the interaction between schooling and offshorability is negative and statistically significant in 2003 (as predicted by Walter) but not in the corresponding model for 2013.

First, the marginal effects of offshorability, conditional on routineness and skill are presented in the first row of Figure A10 for 2003. The marginal effect of offshorability conditional on routineness is calculated with schooling held at its mean. Presented in Panel A, the marginal effect follows a similar pattern to previous models; it is negative at low levels of routineness and positive at high levels of routineness. The marginal effect of offshorability, conditional on skill with routineness held at the mean (Panel B), is increasingly negative as years of schooling increases, which is consistent with the findings of walter2015 (). The second row presents the marginal effects of routineness and skill, each conditional on offshorability. In Panel C, the marginal effect of routineness is positive and greater for those in offshorable occupations. In Panel D, the maringal effect of schooling is negative and more negative for those in offshorable occupations.

Second, turning to 2013, the marginal effects are presented in Figure A11. However, before discussing them, it is important to note, as above, that the AIC, BIC and coefficient on the interaction term between offshorability and education suggest that the inclusion of this term does not improve the explanatory power of the power. In Panel A, the marginal

effect of offshorability is negative at low levels of routineness and not significantly different from zero at high levels of routineness. The marginal effect of offshorability is not different from zero at low levels of education, but is negative and statistically different from zero at high levels of education as shown in Panel B. In Panel C, the marginal effect of routineness is positive and statistically significant for those in both offshorable and non-offshorable jobs. Finally in Panel D, the marginal effect of schooling is always negative, and does not depend on the level of offshorability.

Together, the results indicate some support for the idea that the effect of offshorability on preferences will be conditional upon schooling, in addition to task routineness. The relationship between these factors and the impact on preferences is an important area for further research.

10 Offshorability and routineness over time

We examine whether the impact of offshorability and routineness have varied over time. One reason to expect this is if the scope of offshoring has increased in the ten years between the two samples. If so, we might expect to see that offshorability has a greater impact in 2013 than in 2003. We present the pooled model in Table A9. The coefficient on the dummy variable for 2013 is not statistically different from zero, suggesting the overall level of protectionist sentiment is similar in 2003 and 2013.

Model 2 presents the three-way interaction between offshorability, routineness and a dummy variable for 2013 The coefficient on the interaction between offshorability and routineness remains positive and statistically significant, however the coefficient on the three-way interaction between offshorability, routineness and the year is not statistically different from zero. Indeed, none of the constituent terms including the year dummy are statistically different from zero. Furthermore, there is no change in the adjusted R^2 between Models 1 and 2, and information criteria indicate that the three-way interaction does not improve the explanatory power of the model. Figure A12 presents the marginal effects for routineness and offshorability by year and shows that there is no difference between 2003 and 2013. One reason for this may be due to the fact that the occupation scores for routineness and off-

Figure A10: Marginal effects of RTI, offshorability and skill in 2003

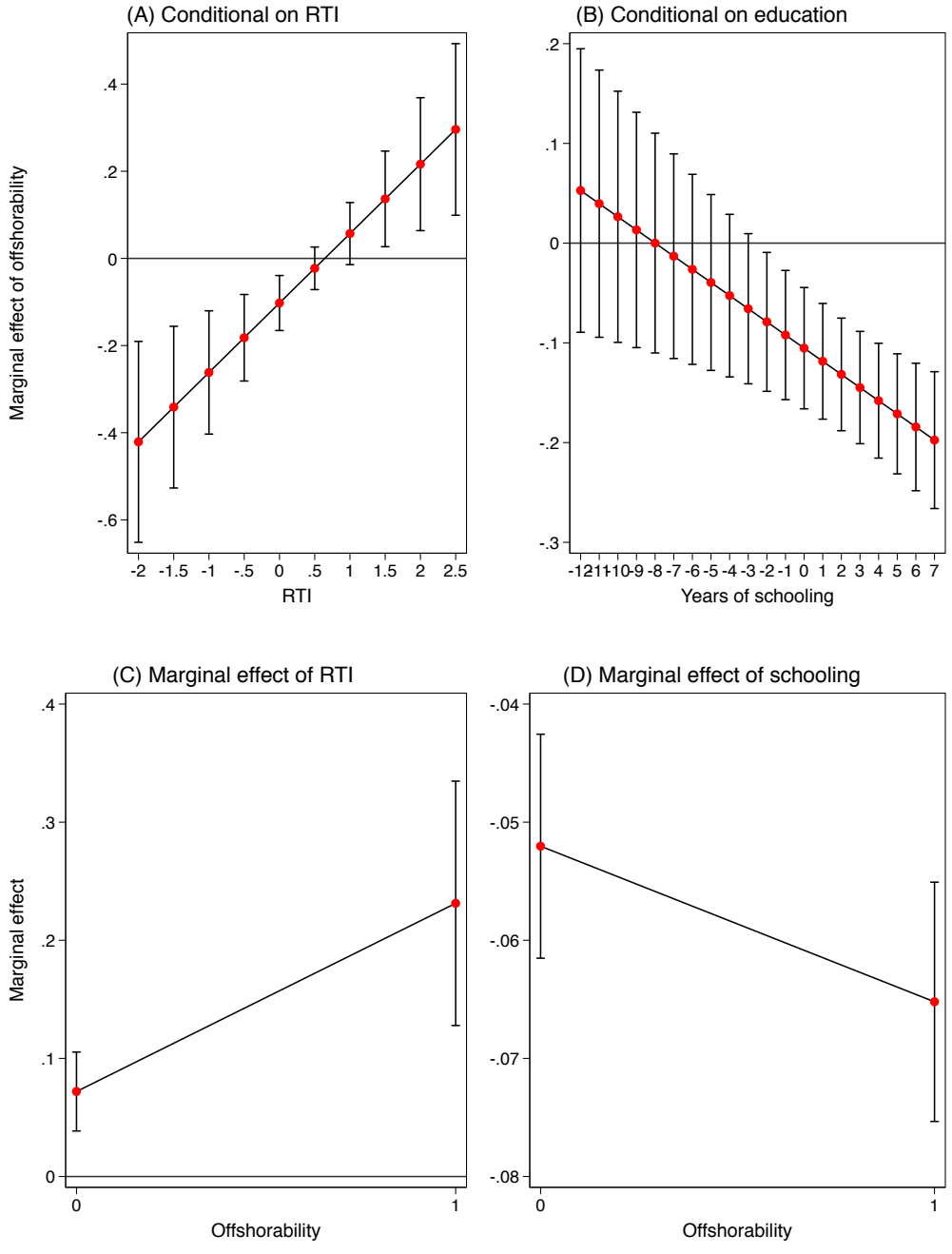
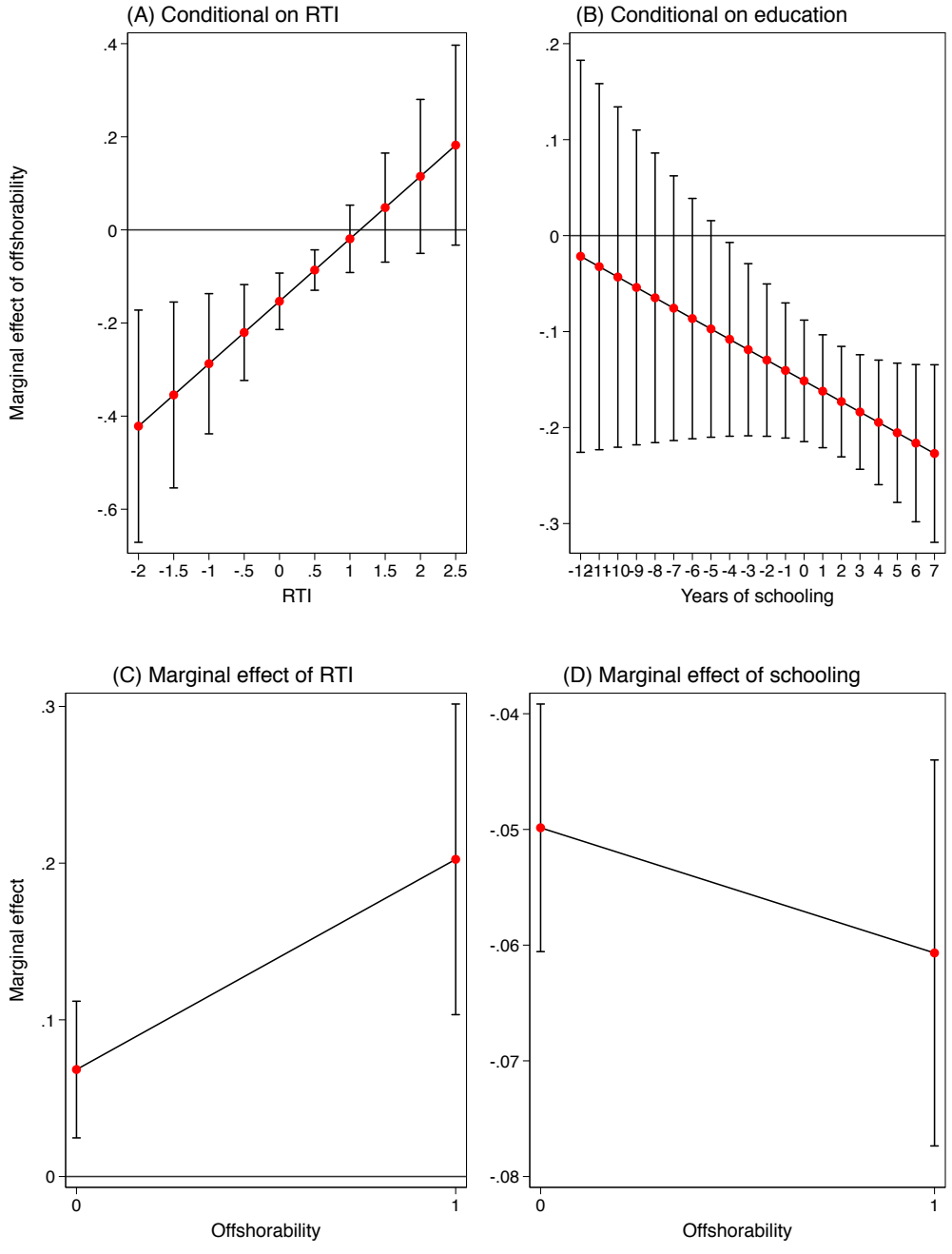


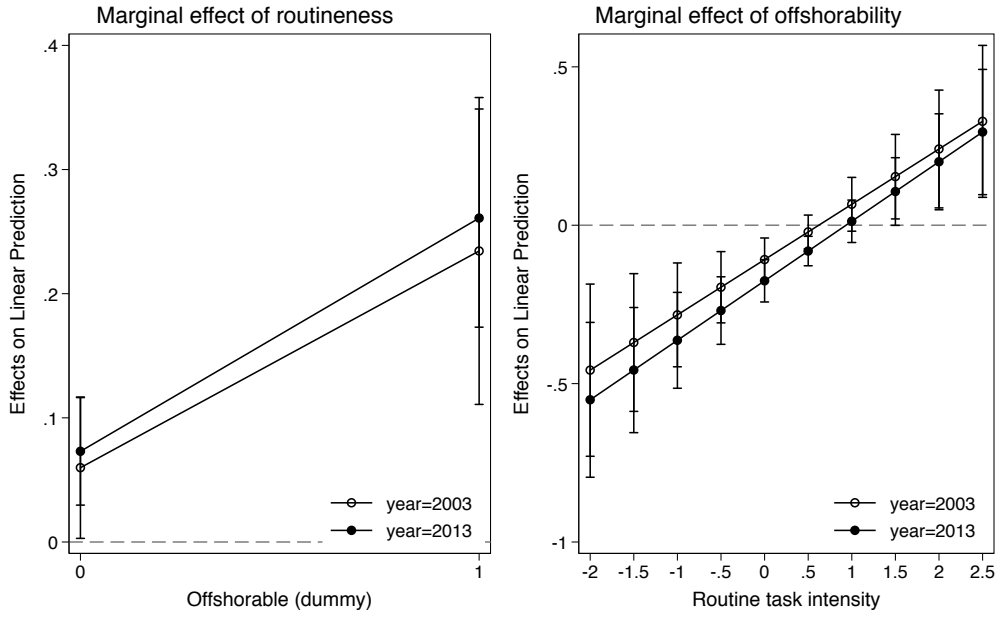
Figure A11: Marginal effects of RTI, offshorability and skill in 2013



95% confidence interval

shorability were developed based on early 2000s data and technology.[13] Thus, the measures may understate the degree of exposure due to offshoring in the 2013 sample.

Figure A12: Conditional marginal effects of routineness and offshorability over time



95 % confidence intervals.

[13]See Autor 2013, for a discussion of the limitations of static measures of task characteristics.

Table A9: Impact of offshorability and routineness over time

	1	2
RTI	0.067***	0.060**
	(0.019)	(0.027)
Offshorability	-0.148***	-0.108***
	(0.020)	(0.032)
RTI× Offshorability	0.187***	0.175***
	(0.029)	(0.053)
2013	0.022	0.033
	(0.059)	(0.062)
2013 × RTI		0.013
		(0.028)
2013 × Offshorability		-0.067
		(0.050)
2013 × RTI × Offshorability		0.013
		(0.081)
Years of schooling	-0.051***	-0.051***
	(0.005)	(0.005)
Comparative advantage (log)	-0.004	-0.004
	(0.004)	(0.004)
Comparative disadvantage (log)	0.001	0.001
	(0.003)	(0.003)
Nationalism	0.148***	0.148***
	(0.008)	(0.008)
Unemployed	0.001	0.001
	(0.001)	(0.001)
Union member	0.017	0.018
	(0.047)	(0.047)
Female	0.221***	0.221***
	(0.020)	(0.020)
Age	-0.000	-0.000
	(0.000)	(0.000)
Constant	2.201***	2.196***
	(0.116)	(0.117)
Observations	32349	32349
Adjusted R^2	0.17	0.17
BIC	95910.86	95938.16

Cluster robust standard errors in parentheses. Country fixed effects included
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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