Firms vs. Workers? The Politics of Openness in an Era of Global Production and Automation

Erica Owen
University of Pittsburgh

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The political economy of production

Two phenomena:

- Backlash against globalization (e.g. Bisbee et. al 2020, Colantone & Stanig 2018; Dal Bo et. al 2018; Guiso et. al 2017; Hays, Lim, & Spoon 2019; Inglehart & Norris 2016; Mutz 2018)
- Support for left, far-right, populist parties (e.g. Im et. al 2019, Gingrich 2019; Anelli et. al 2018; Kurer & Palier 2019, Girdon & Hall 2017)

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↑ global production & automation change:

- Firm production strategies
- Link between firms and employees (e.g. Carrier)

How do global production and automation affect the economic well-being and preferences of workers?

- Occupation vulnerability to labor replacement affects
  - Economic well-being
  - Support for openness and redistribution
  - Support for left parties and right populist parties
- Survey data from ISSP for developed democracies 1995-2016 (thanks to Jane Gingrich)

Winners and losers

Global production

- Factor: Skilled vs. unskilled
- Industry: Exporting vs. import competing
- Firm: Trading vs. non-trading
- Occupation: Routine and offshorable

Technological change

- Factor: Skill biased
- Industry: Adoption of ICT, robots
- Firm: Automated or not
- Occupation: Routine, computerization/automation

Background on the tasks approach

- Tasks: discrete units of work
- Production of good/service requires combination of tasks
- Factors of production perform tasks (labor, capital)
- Lowest cost input used
- See Autor et. al 2003, Acemoglu & Autor 2011, Grossman & Rossi-Hansberg (2008)

Firms' labor-replacing production strategies

- Substitute domestic labor with capital or foreign labor
- Policies shape relative cost domestic labor; use of labor-replacing production techniques
  - $\uparrow$ openness lowers cost foreign labor
  - Tax rates, institutions, incentives $\downarrow$ cost capital
- Optimize production over bundles of policies

Which tasks are vulnerable to labor replacement?

1. Routine
   - Both global production (Owen & Johnson 2017) & automation (Gingrich 2019, Theweissen & Rueda 2019)
   - Rule-following, script based
2. Predictable
   - Computer or machine
   - Non-routine but predictable physical and personal tasks
3. Offshorable: increases exposure to global production

Vulnerability to automation/global production

1. Low/Low
   - NR, unpredictable or non-offshorable
   - Childcare, hairdresser, management
2. Low/High
   - Routine, unpredictable, offshorable
   - Accountant, programmer, draughtperson

2. High/Low
   - NR, predictable
   - Warehouse, cashier, ticketing agent
3. High/High
   - NR, unpredictable, non-off
   - Bookkeeper, production

NR = Non-routine; Off = offshorable

Empirical expectations

↑ Vulnerability to labor-replacement:

- ↓ Income (log and relative)
- ↓ Job security
- ↑ Trade protection
- ↑ Hostility toward multinationals
- ↑ Support redistribution
- ↑ Left parties
- ↑ Right populist parties

** Similar effects expected for routineness and predictability

Data

Sample 20 advanced economies in the ISSP 1995-2016

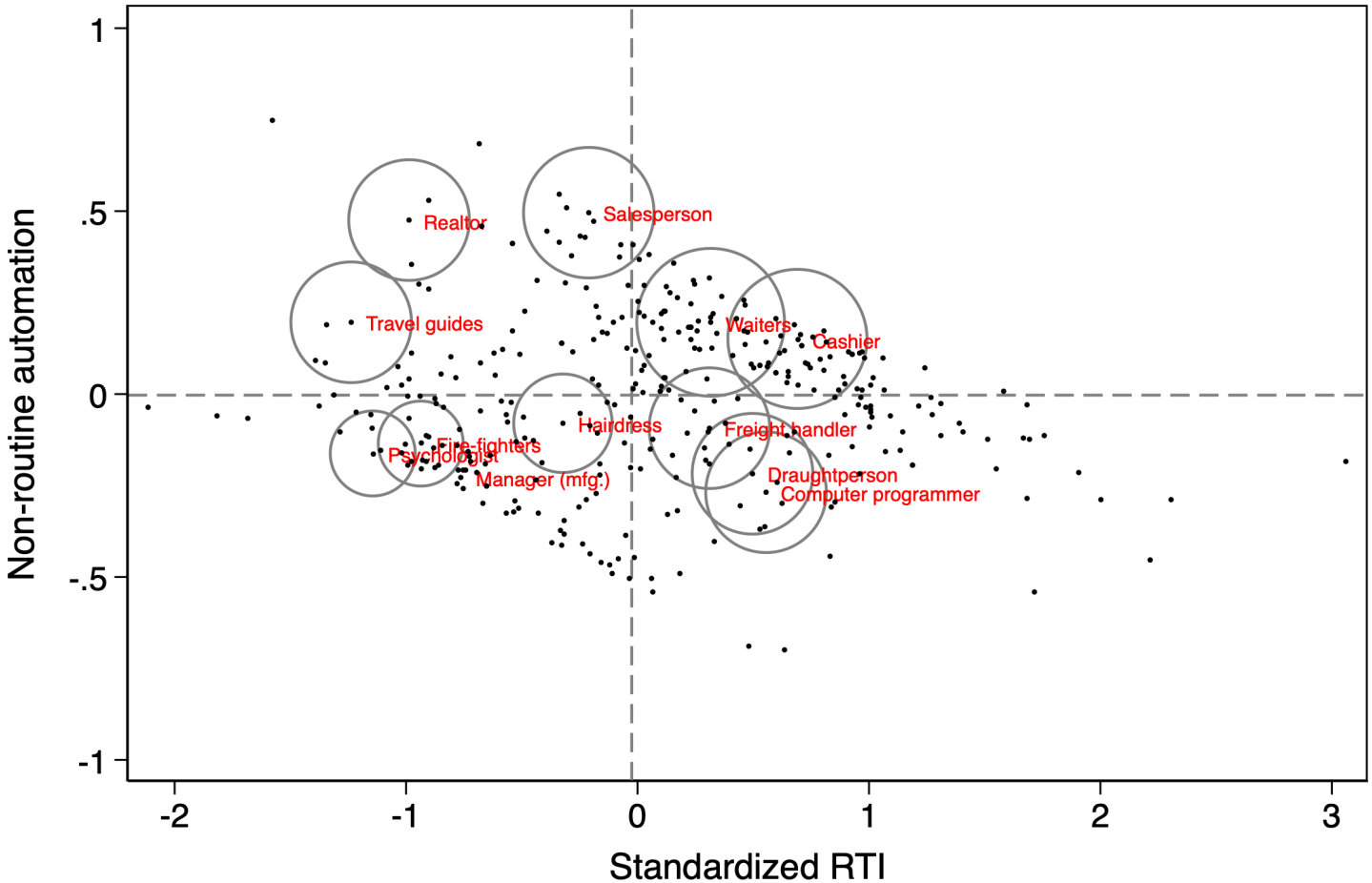
Components of vulnerability

- R_q: Occupation quintile of routine task intensity (Acemoglu & Autor 2011, Goos et al 2014)
- P_q: Occupation quintile of predictability
  - Residual of computerization (Frey & Osbourne 2017) regressed on RTI
- Offshorability: $= 1$ if offshorable (Blinder 2009)

Vulnerability index

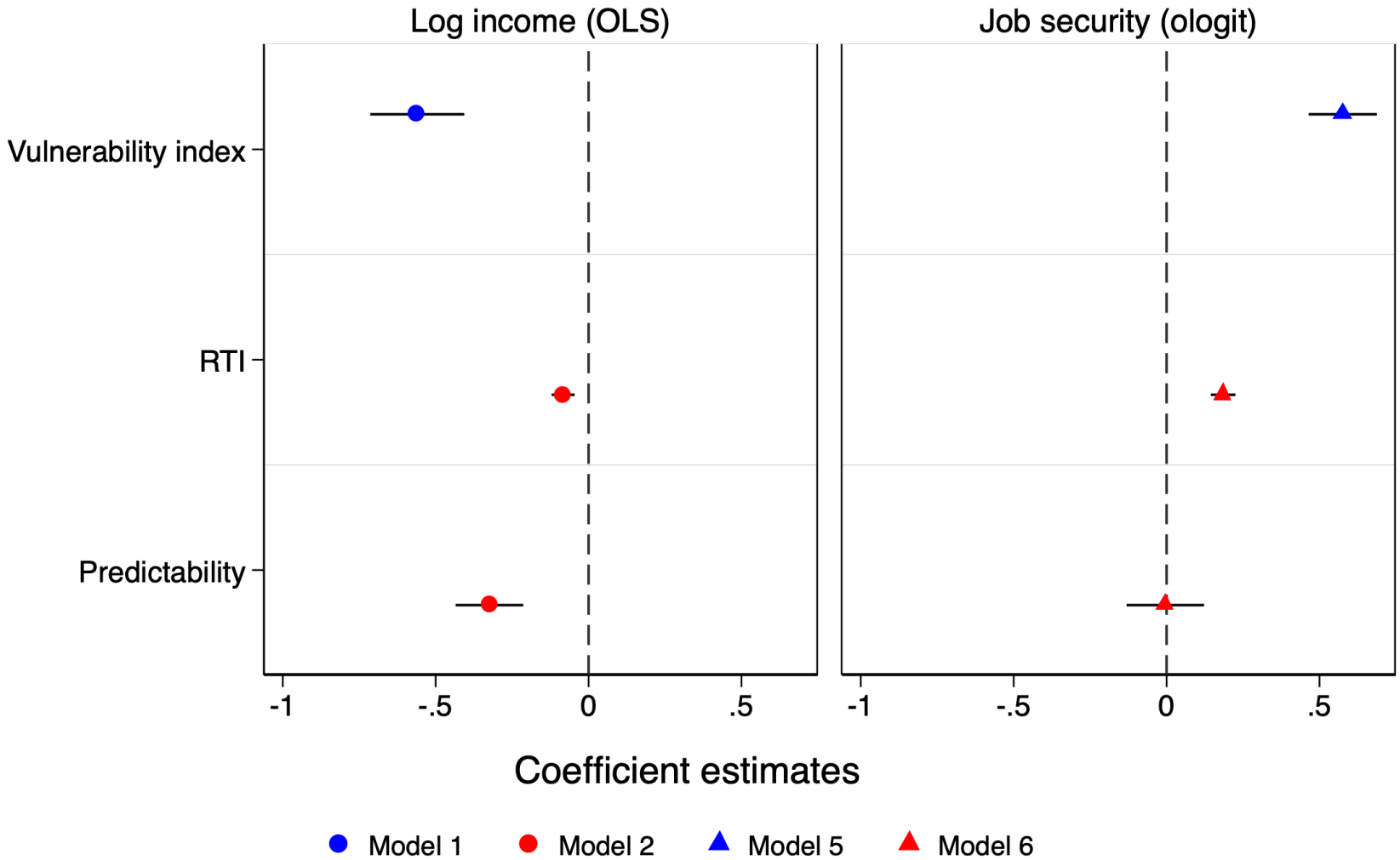
$$Vulnerability = (R_q + P_q + ((R_q - 3) \times Off)/11).$$

Measures of routineness, predictability, and vulnerability



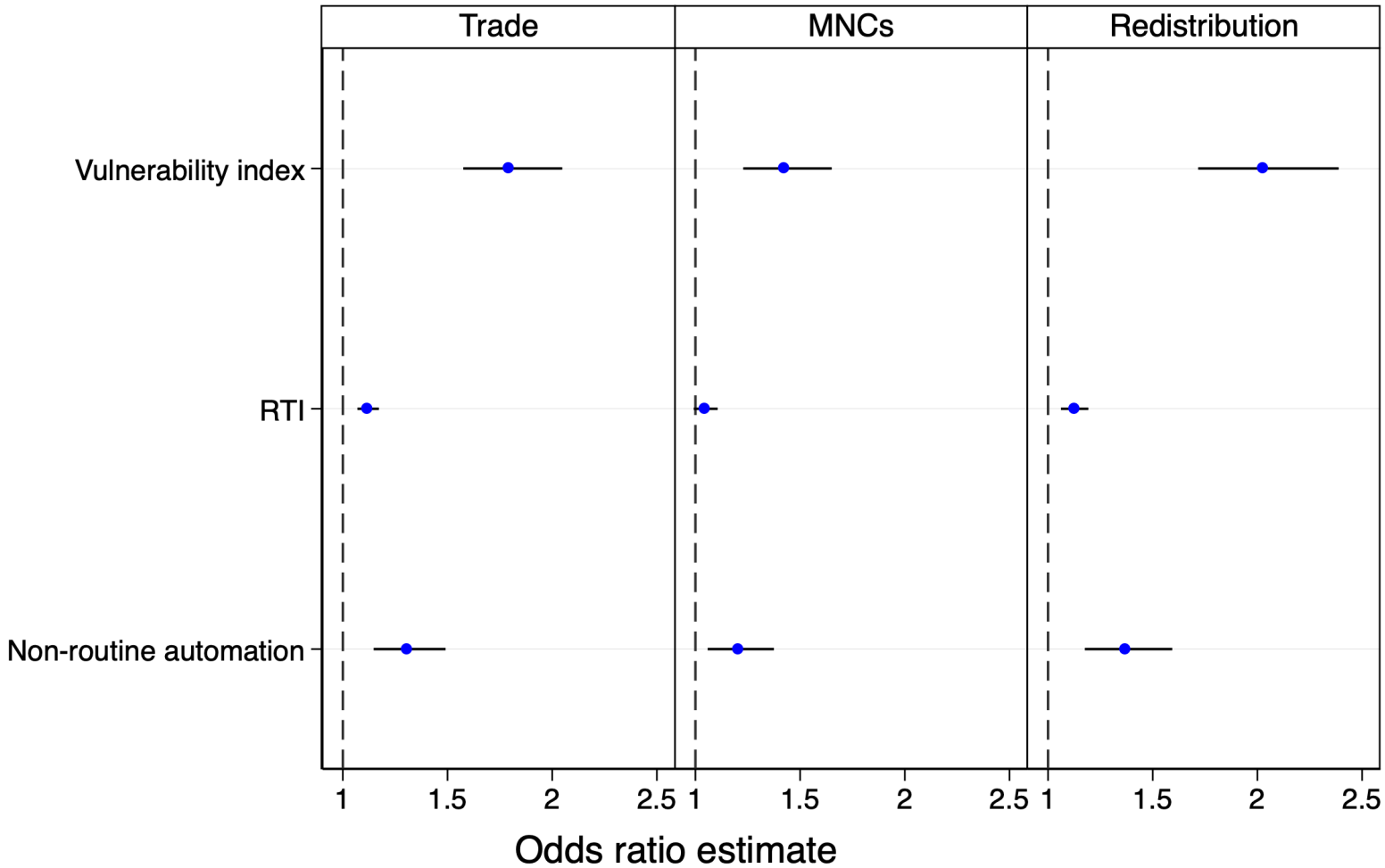
Note: The size of the bubble is proportional to occupational vulnerability for selected occupations. Sample is 352 occupations at 4-digit ISCO-88 level for which data is available. Dashed lines represent the means of routineness and predictability.

Economic implications



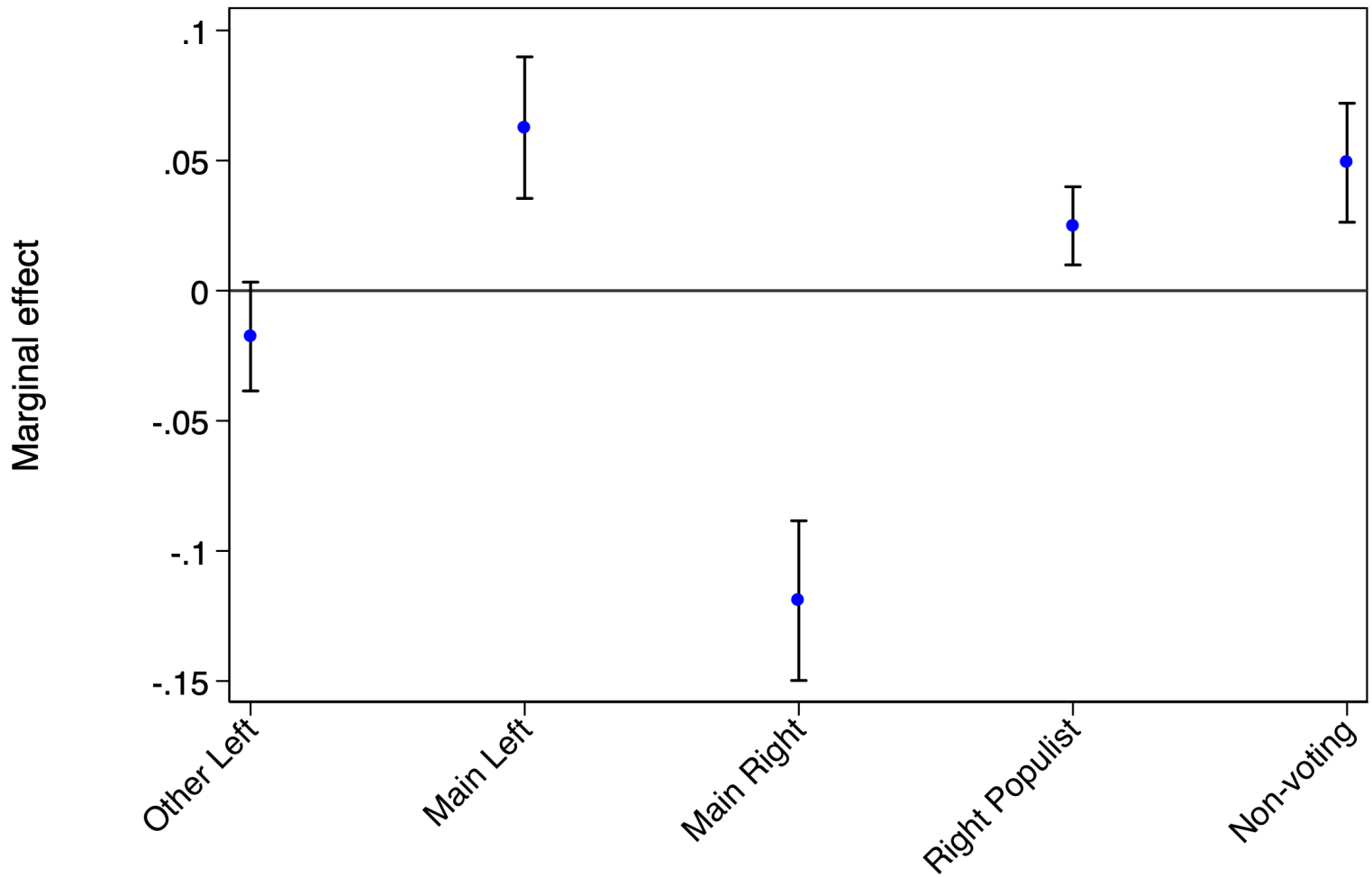
Note: 95% confidence intervals. Controls for unemployment, union membership, female, age, rural, unemployment rate, educational degree dummy. Country and year fixed effects.

Policy preferences



Note: 95% confidence intervals. Ordered logit with country and year fixed effects. Controls for unemployment, union membership, female, age, rural, unemployment rate, educational degree dummy.

Partisan preference: Marginal effect of vulnerability



Note: 95% confidence intervals. Multinomial logit with country and year fixed effects. Controls for unemployment, union membership, female, age, rural, unemployment rate, educational degree dummy.

Discussion

- Preferences in many areas driven by same phenomena
- Limitations of managed trade, incentive policies
- Welfare linked to type of work rather than firm

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- Preferences in many areas driven by same phenomena
- Limitations of managed trade, incentive policies
- Welfare linked to type of work rather than firm
- Robustness
  - Alternative measures of IV, role domestic context, pre-/post-Great Recession
  - Use ESS to account for other channels of exposure (e.g. geography, immigration)

Big picture

Reorganization of production $\rightarrow$ reorganization of politics

- Political influence of firms and (vs.?) workers
- Role of domestic institutions
- How do governments encourage/discourage automation?
- Variation in policy bundles (openness, tax policy, redistribution)

Additional slides

Countries in sample

ISSP: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and the United States.

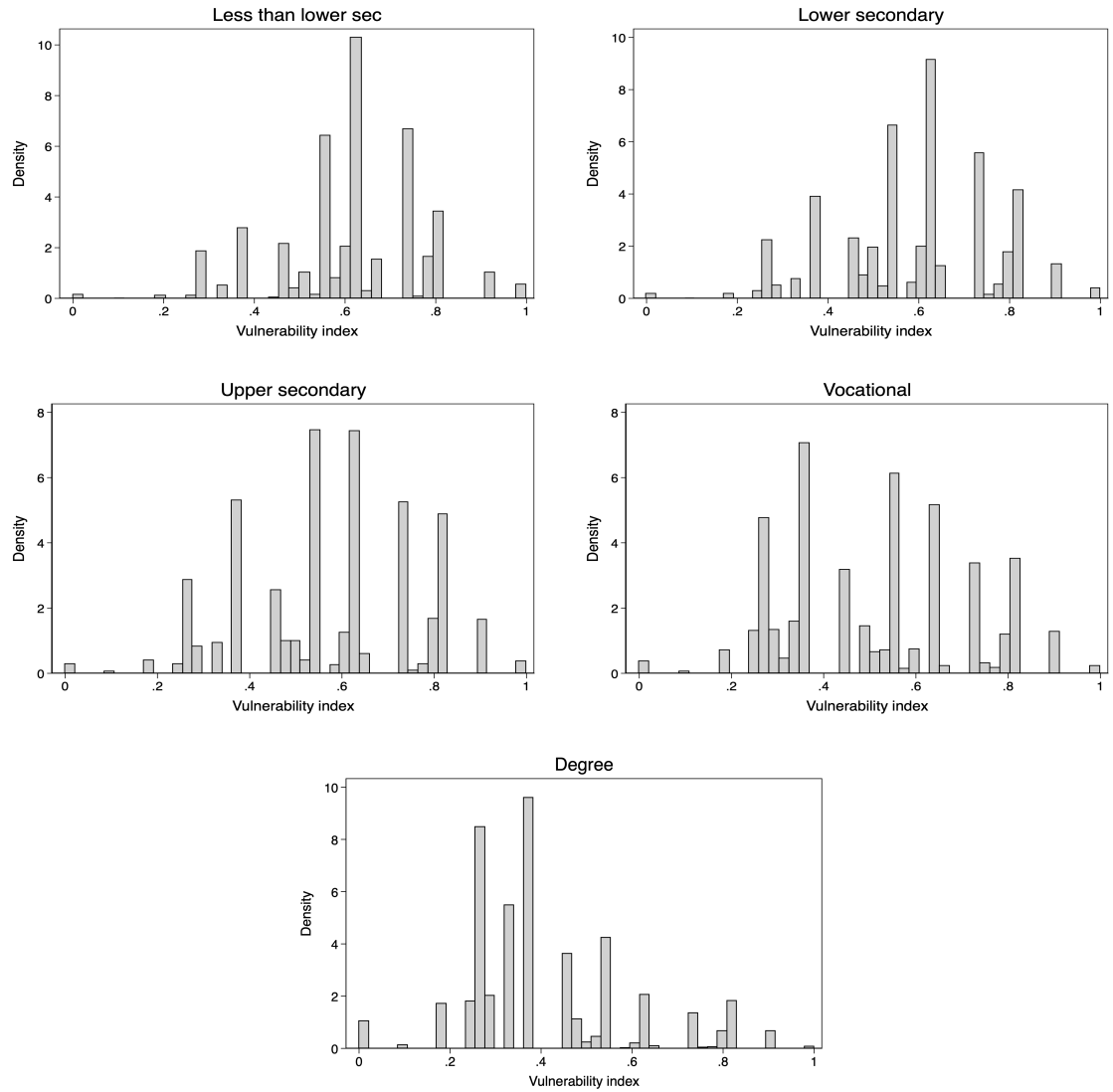
Question wording

- Job security: "Do you worry about the possibilities of losing your job?"
- Trade: "[Country] should limit imports to protect jobs"
- MNC: "Large international businesses are doing more and more damage to local business"
- Redistribution: "Do you think it is the government's responsibility to reduce income differences between the rich and poor" (Should not be...should be)

Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Vulnerability index	0.53	0.2	0	1	170705
RTI	-0.05	0.79	-7.81	3.2	170705
Predictability	-0.01	0.19	-0.70	0.94	170705
Log monthly income (USD)	7.49	2.55	-11.51	13.61	170705
Relative income	1.39	0.98	0	10	170105
Job security	1.8	0.94	1	4	20760
Ease find new job	3.31	1.17	1	5	20384
Limit trade	3.24	1.18	1	5	21432
Limit MNCs	3.5	1.06	1	5	15319
Support redistribution	2.88	1	1	4	19517
Party Family	2.94	1.22	1	5	132442
Upper secondary	0.24	0.42	0	1	170705
Vocational	0.21	0.4	0	1	170705
Degree	0.24	0.43	0	1	170705
Unemployed	0.05	0.22	0	1	170705
Union member	0.36	0.48	0	1	170705
Female	0.48	0.5	0	1	170705
Age	42.75	12.14	15	99	170705
Unemployment rate	7.02	3.96	2.49	26.09	170705
Rural	0.29	0.46	0	1	170705

Vulnerability by educational attainment in the ISSP



Partisan preferences: Marginal effects continued