**The threat of social decline: Income inequality and radical right support**

Sarah Engler and David Weisstanner

# ONLINE APPENDIX

# Contents:

* Online Appendix 1: Determinants of subjective social status
* Online Appendix 2: Full interaction models underlying Figures 1, 2, and 3
* Online Appendix 3: Robustness checks
* Online Appendix 4: Models with contextual variables
* Online Appendix 5: Radical left party support

# Online Appendix 1: Determinants of subjective social status

**Table A1: OLS regressions of subjective social status**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1 | 2 | 3 |
| *Income (reference: bottom)* |  |  |  |
| Lower-middle quintile | 0.43\*\*\* (0.03) | 0.43\*\*\* (0.03) | 0.36\*\*\* (0.03) |
| Middle income quintile | 0.80\*\*\* (0.05) | 0.79\*\*\* (0.05) | 0.64\*\*\* (0.04) |
| Upper-middle quintile | 1.14\*\*\* (0.06) | 1.14\*\*\* (0.05) | 0.89\*\*\* (0.04) |
| Top income quintile | 1.71\*\*\* (0.10) | 1.71\*\*\* (0.09) | 1.32\*\*\* (0.07) |
|  |  |  |  |
| Tertiary education |  |  | 0.45\*\*\* (0.04) |
| *Class (reference: self-employed)* |  |  |  |
| Technicians |  |  | -0.13\*\*\* (0.02) |
| Production workers |  |  | -0.59\*\*\* (0.04) |
| Managers |  |  | 0.06\* (0.03) |
| Clerks |  |  | -0.29\*\*\* (0.04) |
| Socio-cultural professionals |  |  | -0.10\*\* (0.04) |
| Service workers |  |  | -0.44\*\*\* (0.03) |
| Age |  |  | -0.00 (0.00) |
| Male |  |  | 0.07\*\*\* (0.02) |
| Unemployed |  |  | -0.57\*\*\* (0.05) |
| Time trend |  |  | 0.01 (0.01) |
| Country fixed effects | no | yes | yes |
| N individuals | 158,454 | 158,454 | 158,454 |
| N country-years | 151 | 151 | 151 |
| N countries | 14 | 14 | 14 |
| R2 | 0.12 | 0.19 | 0.24 |

*Note:* \* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01. Based on OLS regression models with country-clustered standard errors in parentheses.

# Online Appendix 2: Full interaction models underlying Figures 1, 2, and 3

**Table A2a: Logistic regression models of radical right voting – interaction between inequality and income (see Figure 1)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1  ΔGini short-term | 2  ΔGini medium-term | 3  ΔGini long-term |
| *Income (reference: bottom)* |  |  |  |
| Lower-middle quintile | 0.09\* (0.05) | 0.05 (0.04) | 0.07\* (0.04) |
| Middle income quintile | -0.02 (0.03) | -0.07\* (0.04) | -0.04 (0.05) |
| Upper-middle quintile | -0.10\*\* (0.05) | -0.10\*\* (0.05) | -0.06 (0.07) |
| Top income quintile | -0.19\*\*\* (0.06) | -0.23\*\*\* (0.06) | -0.24\*\* (0.10) |
|  |  |  |  |
| Subjective social status | -0.04\*\* (0.02) | -0.04\*\* (0.02) | -0.04\*\*\* (0.01) |
|  |  |  |  |
| ΔGini market | -0.13\* (0.07) | 0.02 (0.04) | 0.17\*\*\* (0.05) |
|  |  |  |  |
| ΔGini market\*income |  |  |  |
| \*Lower-middle quintile | 0.00 (0.04) | 0.05\*\*\* (0.02) | 0.01 (0.02) |
| \*Middle income quintile | 0.06 (0.05) | 0.10\*\*\* (0.03) | 0.03 (0.04) |
| \*Upper-middle quintile | 0.06 (0.06) | 0.04 (0.05) | -0.01 (0.04) |
| \*Top income quintile | 0.14 (0.13) | 0.12\*\* (0.05) | 0.06 (0.05) |
|  |  |  |  |
| Tertiary education | -0.72\*\*\* (0.11) | -0.72\*\*\* (0.10) | -0.72\*\*\* (0.08) |
| *Class (reference: self-employed)* |  |  |  |
| Technicians | -0.08 (0.08) | -0.08 (0.08) | -0.07 (0.08) |
| Production workers | 0.32\*\*\* (0.10) | 0.32\*\*\* (0.10) | 0.32\*\*\* (0.10) |
| Managers | -0.24\*\*\* (0.06) | -0.24\*\*\* (0.06) | -0.23\*\*\* (0.06) |
| Clerks | -0.05 (0.08) | -0.05 (0.08) | -0.06 (0.08) |
| Socio-cultural professionals | -0.60\*\*\* (0.08) | -0.59\*\*\* (0.08) | -0.58\*\*\* (0.08) |
| Service workers | 0.24\*\* (0.10) | 0.24\*\* (0.10) | 0.24\*\* (0.10) |
| Age | -0.01 (0.00) | -0.01 (0.00) | -0.01 (0.00) |
| Male | 0.45\*\*\* (0.04) | 0.45\*\*\* (0.04) | 0.45\*\*\* (0.04) |
| Unemployed | 0.14 (0.10) | 0.13 (0.09) | 0.13 (0.09) |
| Time trend | 0.05\*\* (0.02) | 0.05\*\* (0.02) | 0.06\*\*\* (0.02) |
| Country fixed effects | yes | yes | yes |
| Abstain & radical left excluded | yes | yes | yes |
| N individuals | 129,694 | 129,694 | 129,694 |
| N country-years | 151 | 151 | 151 |
| N countries | 14 | 14 | 14 |
| Pseudo R2 | 0.13 | 0.13 | 0.13 |

*Note:* \* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01. Numbers displayed are log-odds coefficients. Based on logistic regression models with country fixed effects (not shown). Country-clustered standard errors in parentheses.

**Table A2b: Logistic regression models of radical right voting – interaction between inequality and subjective status (see Figure 2)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1  ΔGini short-term | 2  ΔGini medium-term | 3  ΔGini long-term |
| *Income (reference: bottom)* |  |  |  |
| Lower-middle quintile | 0.09\*\* (0.03) | 0.09\*\* (0.03) | 0.09\*\* (0.03) |
| Middle income quintile | 0.01 (0.03) | 0.00 (0.03) | 0.00 (0.03) |
| Upper-middle quintile | -0.08 (0.05) | -0.07 (0.05) | -0.08 (0.05) |
| Top income quintile | -0.14\*\* (0.07) | -0.14\*\* (0.07) | -0.14\*\* (0.07) |
|  |  |  |  |
| Subjective social status | -0.06\*\* (0.02) | -0.06\*\*\* (0.02) | -0.06\*\*\* (0.01) |
|  |  |  |  |
| ΔGini market | -0.36\* (0.21) | -0.12 (0.10) | 0.11 (0.09) |
|  |  |  |  |
| ΔGini market\*status | 0.05 (0.03) | 0.03\*\* (0.01) | 0.01 (0.01) |
|  |  |  |  |
| Tertiary education | -0.72\*\*\* (0.11) | -0.73\*\*\* (0.10) | -0.72\*\*\* (0.08) |
| *Class (reference: self-employed)* |  |  |  |
| Technicians | -0.08 (0.08) | -0.08 (0.08) | -0.07 (0.08) |
| Production workers | 0.32\*\*\* (0.10) | 0.32\*\*\* (0.10) | 0.32\*\*\* (0.10) |
| Managers | -0.24\*\*\* (0.06) | -0.24\*\*\* (0.06) | -0.23\*\*\* (0.06) |
| Clerks | -0.05 (0.08) | -0.06 (0.08) | -0.06 (0.08) |
| Socio-cultural professionals | -0.60\*\*\* (0.08) | -0.59\*\*\* (0.08) | -0.58\*\*\* (0.07) |
| Service workers | 0.24\*\* (0.10) | 0.24\*\* (0.10) | 0.24\*\* (0.11) |
| Age | -0.01 (0.00) | -0.01 (0.00) | -0.01 (0.00) |
| Male | 0.45\*\*\* (0.04) | 0.45\*\*\* (0.04) | 0.45\*\*\* (0.04) |
| Unemployed | 0.14 (0.10) | 0.13 (0.09) | 0.13 (0.09) |
| Time trend | 0.05\*\* (0.02) | 0.05\*\* (0.02) | 0.06\*\*\* (0.02) |
| Country fixed effects | yes | yes | yes |
| Abstain & radical left excluded | yes | yes | yes |
| N individuals | 129,694 | 129,694 | 129,694 |
| N country-years | 151 | 151 | 151 |
| N countries | 14 | 14 | 14 |
| Pseudo R2 | 0.13 | 0.13 | 0.13 |

*Note:* \* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01. Numbers displayed are log-odds coefficients. Based on logistic regression models with country fixed effects (not shown). Country-clustered standard errors in parentheses.

**Table A2c: Logistic regression models of radical right voting – interaction between inequality, income and status (see Figure 3)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1  ΔGini short-term | 2  ΔGini medium-term | 3  ΔGini long-term |
| *Income (reference: bottom)* |  |  |  |
| Lower-middle quintile | -0.16 (0.15) | -0.10 (0.17) | 0.05 (0.20) |
| Middle income quintile | -0.02 (0.25) | 0.05 (0.23) | 0.14 (0.27) |
| Upper-middle quintile | 0.28 (0.27) | 0.30 (0.30) | 0.31 (0.33) |
| Top income quintile | 0.07 (0.14) | 0.36\*\*\* (0.12) | 0.56\*\*\* (0.19) |
|  |  |  |  |
| Subjective social status | -0.05\*\*\* (0.02) | -0.04\*\*\* (0.02) | -0.03 (0.02) |
|  |  |  |  |
| ΔGini market | -0.35 (0.23) | -0.01 (0.10) | 0.21\*\*\* (0.08) |
|  |  |  |  |
| ΔGini market\*income |  |  |  |
| \*Lower-middle quintile | -0.03 (0.16) | -0.10 (0.11) | -0.16\* (0.08) |
| \*Middle income quintile | 0.09 (0.16) | -0.05 (0.16) | -0.10 (0.09) |
| \*Upper-middle quintile | -0.18 (0.15) | -0.13 (0.12) | -0.07 (0.10) |
| \*Top income quintile | 0.10 (0.14) | -0.32\*\*\* (0.09) | -0.29\*\*\* (0.08) |
|  |  |  |  |
| ΔGini market\*status | 0.04 (0.03) | 0.01 (0.01) | -0.01 (0.01) |
|  |  |  |  |
| Income\*status |  |  |  |
| \*Lower-middle quintile | 0.05 (0.03) | 0.03 (0.03) | 0.00 (0.04) |
| \*Middle income quintile | 0.00 (0.04) | -0.02 (0.04) | -0.03 (0.04) |
| \*Upper-middle quintile | -0.06 (0.04) | -0.07 (0.05) | -0.06 (0.05) |
| \*Top income quintile | -0.04 (0.03) | -0.09\*\*\* (0.02) | -0.13\*\*\* (0.03) |
|  |  |  |  |
| ΔGini market\*income\*status |  |  |  |
| \*Lower-middle quintile | 0.00 (0.02) | 0.03 (0.02) | 0.03\*\* (0.01) |
| \*Middle income quintile | -0.01 (0.03) | 0.02 (0.03) | 0.02 (0.02) |
| \*Upper-middle quintile | 0.03 (0.02) | 0.03\* (0.02) | 0.01 (0.01) |
| \*Top income quintile | -0.00 (0.03) | 0.07\*\*\* (0.02) | 0.05\*\*\* (0.02) |
|  |  |  |  |
| Tertiary education | -0.71\*\*\* (0.11) | -0.72\*\*\* (0.10) | -0.71\*\*\* (0.08) |
| *Class (reference: self-employed)* |  |  |  |
| Technicians | -0.08 (0.08) | -0.08 (0.08) | -0.07 (0.08) |
| Production workers | 0.31\*\*\* (0.10) | 0.32\*\*\* (0.10) | 0.32\*\*\* (0.10) |
| Managers | -0.24\*\*\* (0.06) | -0.23\*\*\* (0.06) | -0.23\*\*\* (0.06) |
| Clerks | -0.06 (0.08) | -0.06 (0.08) | -0.06 (0.08) |
| Socio-cultural professionals | -0.60\*\*\* (0.08) | -0.59\*\*\* (0.08) | -0.58\*\*\* (0.07) |
| Service workers | 0.24\*\* (0.10) | 0.24\*\* (0.10) | 0.24\*\* (0.10) |
| Age | -0.01 (0.00) | -0.01 (0.00) | -0.01 (0.00) |
| Male | 0.45\*\*\* (0.04) | 0.45\*\*\* (0.04) | 0.45\*\*\* (0.04) |
| Unemployed | 0.14 (0.10) | 0.13 (0.09) | 0.13 (0.09) |
| Time trend | 0.05\*\* (0.02) | 0.05\*\* (0.02) | 0.06\*\*\* (0.02) |
| Country fixed effects | yes | yes | yes |
| Abstain & radical left excluded | yes | yes | yes |
| N individuals | 129,694 | 129,694 | 129,694 |
| N country-years | 151 | 151 | 151 |
| N countries | 14 | 14 | 14 |
| Pseudo R2 | 0.13 | 0.13 | 0.13 |

*Note:* \* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01. Numbers displayed are log-odds coefficients. Based on logistic regression models with country fixed effects (not shown). Country-clustered standard errors in parentheses.

# Online Appendix 3: Robustness checks

**Figure A3: Robustness checks for the interaction between long-run inequality trends (12-year window), income and subjective status (see Figure 3)**

|  |  |  |
| --- | --- | --- |
| **(a)**  **Including abstain and radical left in the reference group** | **(b)**  **Standard errors clustered by country-year** | **(c)**  **Country-specific**  **linear time trend** |
|  |  |  |
|  |  |  |
| **(d)**  **No time trend** | **(e)**  **Quadratic time trend polynomial**  **(time, time2)** | **(f)**  **Cubic time trend polynomial**  **(time, time2, time3)** |
|  |  |  |
|  |  |  |
| **(g)**  **Status as a categorical variable (binary variables 1-10)** | **(h)**  **Multilevel logistic regression (individ. nested in country-years)** |  |
|  |  |  |

# Online Appendix 4: Models with contextual variables

**Table A4: Logistic regression models of radical right voting (average marginal effects)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| *Income (reference: bottom)* |  |  |  |  |  |
| Lower-middle quintile | 0.54\*\* (0.23) | 0.55\*\* (0.23) | 0.56\*\* (0.22) | 0.56\*\* (0.23) | 0.55\*\* (0.23) |
| Middle income quintile | -0.04 (0.19) | 0.00 (0.19) | 0.02 (0.19) | 0.01 (0.19) | -0.00 (0.19) |
| Upper-middle quintile | -0.52\* (0.31) | -0.46 (0.32) | -0.45 (0.31) | -0.46 (0.32) | -0.47 (0.32) |
| Top income quintile | -0.85\*\* (0.41) | -0.84\*\* (0.41) | -0.82\*\* (0.40) | -0.83\*\* (0.40) | -0.83\*\* (0.41) |
|  |  |  |  |  |  |
| Subjective social status | -0.26\*\*\* (0.07) | -0.25\*\*\* (0.06) | -0.26\*\*\* (0.06) | -0.26\*\*\* (0.07) | -0.25\*\*\* (0.07) |
|  |  |  |  |  |  |
| Gini market long-term change | 1.19\*\*\* (0.43) | 1.17\*\*\* (0.36) | 1.21\*\*\* (0.35) | 1.13\*\*\* (0.34) | 1.08\*\*\* (0.41) |
|  |  |  |  |  |  |
| Immigration (in % of total population) | 1.95 (2.49) |  |  |  |  |
| Trade openness (imports+exports as % of GDP) |  | -0.02 (0.06) |  |  |  |
| Unemployment rate (in %) |  |  | -0.56 (0.35) |  |  |
| Real GDP growth |  |  |  | -0.08 (0.17) |  |
| Social expenditure (in % of GDP) |  |  |  |  | 0.18 (0.39) |
|  |  |  |  |  |  |
| Tertiary education | -3.85\*\*\* (0.36) | -3.84\*\*\* (0.36) | -3.76\*\*\* (0.35) | -3.82\*\*\* (0.37) | -3.87\*\*\* (0.36) |
| *Class (reference: self-employed)* |  |  |  |  |  |
| Technicians | -0.32 (0.45) | -0.41 (0.49) | -0.44 (0.48) | -0.40 (0.49) | -0.38 (0.51) |
| Production workers | 2.26\*\*\* (0.69) | 2.20\*\*\* (0.71) | 2.21\*\*\* (0.70) | 2.20\*\*\* (0.71) | 2.20\*\*\* (0.71) |
| Managers | -1.19\*\*\* (0.31) | -1.29\*\*\* (0.36) | -1.33\*\*\* (0.35) | -1.29\*\*\* (0.36) | -1.27\*\*\* (0.38) |
| Clerks | -0.35 (0.48) | -0.34 (0.47) | -0.34 (0.45) | -0.34 (0.47) | -0.34 (0.46) |
| Socio-cultural professionals | -2.78\*\*\* (0.40) | -2.84\*\*\* (0.42) | -2.88\*\*\* (0.41) | -2.84\*\*\* (0.41) | -2.81\*\*\* (0.45) |
| Service workers | 1.62\*\* (0.71) | 1.58\*\* (0.70) | 1.59\*\* (0.70) | 1.59\*\* (0.70) | 1.58\*\* (0.70) |
| Age | -0.03 (0.02) | -0.03 (0.02) | -0.03 (0.02) | -0.03 (0.02) | -0.03 (0.02) |
| Male | 2.75\*\*\* (0.24) | 2.73\*\*\* (0.24) | 2.74\*\*\* (0.24) | 2.73\*\*\* (0.24) | 2.72\*\*\* (0.23) |
| Unemployed | 0.90\* (0.53) | 0.81 (0.53) | 0.91\* (0.53) | 0.79 (0.53) | 0.77 (0.52) |
| Time trend | 0.32\*\* (0.14) | 0.41\*\*\* (0.14) | 0.40\*\*\* (0.10) | 0.38\*\*\* (0.10) | 0.35\*\*\* (0.09) |
| Country fixed effects | yes | yes | yes | yes | yes |
| Abstain & radical left excluded | yes | yes | yes | yes | yes |
| N individuals | 127,732 | 129,694 | 129,694 | 129,694 | 129,694 |
| N country-years | 147 | 151 | 151 | 151 | 151 |
| N countries | 14 | 14 | 14 | 14 | 14 |
| Pseudo R2 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |

*Note:* \* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01. Numbers displayed are average marginal effects, indicating the percentage point change in the probability to vote RRP. Based on logistic regression models with country fixed effects (not shown). Country-clustered standard errors in parentheses. Data source: Armingeon et al. (2018) and OECD international migration database.

# Online Appendix 5: Radical left party support

**Table A5: Logistic regression models of radical left support (average marginal effects)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| *Income (reference: bottom)* |  |  |  |  |  |
| Lower-middle quintile | -0.38 (0.37) | -0.66\* (0.39) | -0.66\* (0.40) | -0.66\* (0.40) | -0.66\* (0.39) |
| Middle income quintile | -0.13 (0.42) | -0.58 (0.46) | -0.58 (0.46) | -0.58 (0.46) | -0.60 (0.45) |
| Upper-middle quintile | -0.91\*\*\* (0.36) | -1.58\*\*\* (0.42) | -1.58\*\*\* (0.43) | -1.59\*\*\* (0.43) | -1.61\*\*\* (0.42) |
| Top income quintile | -1.58\*\*\* (0.42) | -2.36\*\*\* (0.51) | -2.37\*\*\* (0.51) | -2.37\*\*\* (0.51) | -2.39\*\*\* (0.51) |
|  |  |  |  |  |  |
| Subjective social status | -0.63\*\*\* (0.18) | -0.91\*\*\* (0.21) | -0.91\*\*\* (0.21) | -0.91\*\*\* (0.21) | -0.90\*\*\* (0.19) |
|  |  |  |  |  |  |
| Gini market short-term change |  |  | 0.16 (0.47) |  |  |
| Gini market medium-term change |  |  |  | 0.26 (0.40) |  |
| Gini market long-term change |  |  |  |  | 0.73\*\* (0.33) |
|  |  |  |  |  |  |
| Tertiary education | 1.56\*\*\* (0.59) | 1.49\*\*\* (0.67) | 1.49\*\*\* (0.67) | 1.44\*\* (0.65) | 1.29\*\* (0.65) |
| *Class (reference: self-employed)* |  |  |  |  |  |
| Technicians | 1.47\*\*\* (0.32) | 1.68\*\*\* (0.37) | 1.69\*\*\* (0.38) | 1.70\*\*\* (0.38) | 1.78\*\*\* (0.39) |
| Production workers | 1.38\*\*\* (0.49) | 2.15\*\*\* (0.63) | 2.15\*\*\* (0.63) | 2.15\*\*\* (0.63) | 2.16\*\*\* (0.63) |
| Managers | 0.48\* (0.26) | 0.38 (0.27) | 0.39 (0.28) | 0.39 (0.28) | 0.43 (0.29) |
| Clerks | 1.29\*\*\* (0.38) | 1.49\*\*\* (0.46) | 1.49\*\*\* (0.46) | 1.48\*\*\* (0.46) | 1.48\*\*\* (0.47) |
| Socio-cultural professionals | 5.46\*\*\* (0.78) | 6.04\*\*\* (0.85) | 6.05\*\*\* (0.86) | 6.07\*\*\* (0.86) | 6.16\*\*\* (0.89) |
| Service workers | 1.63\*\*\* (0.58) | 2.11\*\*\* (0.44) | 2.11\*\*\* (0.44) | 2.10\*\*\* (0.44) | 2.06\*\*\* (0.44) |
| Age | -0.02 (0.02) | -0.05\*\*\* (0.02) | -0.05\*\*\* (0.02) | -0.05\*\*\* (0.02) | -0.05\*\*\* (0.02) |
| Male | -0.46 (0.70) | -0.37 (0.83) | -0.37 (0.83) | -0.37 (0.83) | -0.37 (0.83) |
| Unemployed | 1.00\*\* (0.44) | 1.48\*\*\* (0.55) | 1.48\*\*\* (0.55) | 1.46\*\* (0.57) | 1.44\*\* (0.58) |
| Time trend | 0.00 (0.11) | -0.00 (0.14) | -0.00 (0.14) | 0.00 (0.13) | 0.03 (0.11) |
| Country fixed effects | yes | yes | yes | yes | yes |
| Abstain & radical right excluded | no | yes | yes | yes | yes |
| N individuals | 136,827 | 109,285 | 109,285 | 109,285 | 109,285 |
| N country-years | 129 | 129 | 129 | 129 | 129 |
| N countries | 12 | 12 | 12 | 12 | 12 |
| Pseudo R2 | 0.08 | 0.08 | 0.08 | 0.08 | 0.09 |

*Note:* \* *p*<0.1; \*\* *p*<0.05; \*\*\* *p*<0.01. Numbers displayed are average marginal effects, indicating the percentage point change in the probability to support radical left parties. Based on logistic regression models with country fixed effects (not shown). Country-clustered standard errors in parentheses.

**Figure A5a: Radical left support – interaction between inequality and income quintile**



**Figure A5b: Radical left support – interaction between inequality and subjective social status**

