

Economic Shocks and Populism

Online Appendix

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More on the Empirical Analysis

The data The German Socio Economic Panel is a large longitudinal survey of private households in Germany, administered by the German Institute for Economic Research, DIW Berlin. SOEP targets the whole German population, and is composed of several sub-samples, selected as multi-stage regionally-clustered random samples, in which the respondents (households) are selected via a random-walk. From there on, samples are re-interviewed across each wave, undergoing attrition. The questionnaire is physically run as a face-to-face interview with all members of a given survey household aged 16 years and over. If the face-to-face interview is refused a telephone interview or e-mail is admitted. In practice, the respondent is not monetarily incentivized: she only receives catchy information on the possible use of the questionnaire, a letter of thanks after the questionnaire, a small gift (worth 5 to 10 DM, or 3 to 6 Euros) and a ticket for a famous lottery. One person in the household (the self-selected “head” of the household) is also asked some questions covering the whole household (e.g. dwelling, total household income). At the end of the survey, some variables are imputed by the SOEP staff, based on objective measurement by the interviewer (e.g. region, dwelling characteristics) or on statistical imputation procedures.

The survey question for individual income directly asks each respondent for her income and working hours, while the survey question for household aggregate net income is asked only to the household head: “If you take a look at the total income of all members

of the household: How much is the monthly household net income today?”. In the analysis, we use the household post-government income variable produced for the CNEF in the Cross-National Equivalent Files PEQUIV, which aggregates individual answers in the household, and is adjusted for inconsistent estimates and non-responses. Because raw income data report several extreme values, the data are trimmed at 99% and 1%.

From the income data, we construct a dummy variable that identifies individuals who have suffered very large income losses (again, only negative income shocks that are sufficiently large to take the respondent much below his reference point are predicted to increase the propensity to vote populist and to take risks). Specifically, the dummy variable equals 1 if current individual income is at least 26% below the three year moving average of lagged own individual income. The threshold 26% corresponds to the 80th percentile of income losses (defined as log of current income minus the log of the three year moving average of lagged individual income). We define this dummy variable as *Large income loss*.

Summary statistics of all variables are displayed in Table A1. Note that only a small percentage of voters declares to be leaning towards populist parties. Support for populist parties is initially below 1%, and it is captured only by the far right. The emergence of the Piratenpartei and of AfD increases the share of populist support, that in our sample reaches 2.6% in 2016. As a fraction of those who declare a political preference, these numbers are doubled, but still low relative to observed vote shares.

In Table A2 we display the correlation coefficients amongst the variables of main interest (pooling together all observations); correlation coefficients tend to be low for most variables.

Table A1: **Summary Statistics**

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
Populist (dummy)	212,422	0.011	0.106	0	1
Risk Love	218,177	4.593	2.397	0	10
Extreme Risk Love	218,177	0.039	0.192	0	1
Income Dissatisfaction	225,248	3.445	2.288	0	10
Extreme Income Dissatisfaction	225,248	0.114	0.318	0	1
Large Income Loss	140,602	0.077	0.266	0	1
Male	238,629	0.463	0.499	0	1
Age Under 28	238,629	0.135	0.342	0	1
Age Over 45	238,629	0.517	0.500	0	1
Direct Immigrant	238,629	0.169	0.375	0	1
Second-Generation Immigrant	238,629	0.072	0.259	0	1
Low Education Level	233,245	0.162	0.369	0	1
Medium Education Level	233,245	0.548	0.498	0	1
High Education Level	233,245	0.290	0.454	0	1
Income	228,570	10.40	0.568	8.587	11.66
Resident in East Germany	238,629	0.230	0.421	0	1
Unemployed	238,629	0.051	0.220	0	1
Out of Labor Force	238,629	0.358	0.479	0	1

Table A2: Correlations

	Populist (Dummy)	Risk Love	Extreme Risk Love	Income Dissat.	Extr. Income Dissat.	Large Income Loss	Unemployed	Income
Populist (Dummy)	1							
Risk Love	0.0357 0.0000	1						
Extreme Risk Love	0.0341 0.0000	0.4043 0.0000	1					
Income Dissatisfaction	0.0376 0.0000	-0.0439 0.0000	0.0144 0.0000	1				
Extreme Income Dissatisfaction	0.0372 0.0000	-0.0279 0.0000	0.0330 0.0000	0.7093 0.0000	1			
Large Income Loss	0.0054 0.0469	0.0033 0.2279	0.0186 0.0000	0.1006 0.0000	0.0836 0.0000	1		
Unemployed	0.0254 0.0000	0.0112 0.0000	0.0355 0.0000	0.2406 0.0000	0.2168 0.0000	0.0691 0.0000	1	
Income	-0.0129 0.0000	0.0897 0.0000	-0.0128 0.0000	-0.3857 0.0000	-0.2552 0.0000	-0.2258 0.0000	-0.1947 0.0000	1

Income losses Here we consider the effect of large income losses (relative to a three year moving average of past household income). Recall that we control for income and being unemployed throughout, so the estimated coefficient on *large income loss* only captures the effects of large negative income shocks. We start with the reduced form implications, and we ask whether experiencing a large income loss is associated with support for populist parties. Columns 1 and 2 of Table A3 show that this is so: leaning towards populist parties is positively influenced by having experienced a large income loss, although magnitudes are small and statistical significance is only at 10%. In column 1, the specification is as in column 4 of Table 1, except that the two variables capturing risk attitudes are replaced by a dummy variable for having experienced large income losses. The dummy variable *large income loss* has a positive and significant estimated coefficient, although the average marginal effect is small: individuals who experienced a large income loss are more likely to lean towards populism by 0.2 percentage points. Column 2 adds individual fixed effects, and thus only captures variation over time by the same individuals; the estimated coefficient of *large income loss* rises, although the average marginal effect is about the same.

The other columns of Table A3 consider the remaining links. In columns 3-6 the dependent variable is being an extreme risk lover. Experiencing a large income loss is associated with extreme risk loving, as expected, irrespective of whether we also include income dissatisfaction as a regressor. Here too, however, the magnitude is rather small (large income losses increase the probability of extreme risk loving by about one percentage point), and the relationship between income dissatisfaction and extreme risk loving remains non-linear and highly significant, as in Table 2. This suggests that the variable *large income loss* captures only a small part of the effect of economic disappointment on risk preferences.

Finally, in columns 7-8 of Table A3 we consider the effect of *large income loss* on *extreme income dissatisfaction*. Again, the estimated coefficient of *large income loss* is positive and significant, as expected, but the magnitude is small, particularly when individual fixed effects are included. Note however that here income and being unemployed are always highly significant and with the expected sign.

Table A3: The Effect of Income Losses

Dep.var.	Populist Dummy		Extreme Risk Love			Extreme Income Dissatisfaction		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Large Income Loss	0.1931* (0.104) [0.0022]	0.3015 (0.184) [0.0019]	0.3617*** (0.062) [0.0093]	0.1604 (0.098) [0.0149]	0.3561*** (0.063) [0.0091]	0.1856* (0.099) [0.0112]	0.1549*** (0.034) [0.0126]	0.0960* (0.053) [0.0000]
Income Dissatisfaction					-0.1109*** (0.017) [-0.0028]	-0.0762*** (0.021) [-0.0046]		
Extreme Income Dissatisfaction					0.9431*** (0.088) [0.0241]	0.3775*** (0.123) [0.0229]		
Unemployed	0.4906*** (0.122) [0.0057]	-0.1123 (0.223) [-0.0007]	0.3951*** (0.085) [0.0101]	-0.1938 (0.135) [-0.0180]	0.3444*** (0.089) [0.0088]	-0.1840 (0.138) [-0.0111]	1.1780*** (0.045) [0.0958]	0.9204*** (0.067) [0.0001]
Income	-0.1823** (0.075) [-0.0021]	0.4170* (0.232) [0.0026]	-0.0610 (0.055) [-0.0016]	-0.1707 (0.131) [-0.0159]	-0.0845 (0.056) [-0.0022]	-0.1984 (0.133) [-0.0120]	-1.3958*** (0.032) [-0.1135]	-0.8578*** (0.079) [-0.0001]
Observations	134,288	4,811	133,849	10,546	132,675	10,376	137,182	32,130
Controls	Yes	No	Yes	No	Yes	No	Yes	No
Individual FE	No	Yes	No	Yes	No	Yes	No	Yes

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors in parentheses are clustered at the individual level, marginal effects in square brackets. The dependent variable is voting for a populist party in columns 1-2, being an extreme risk lover in columns 3-6, and a dummy for extreme dissatisfaction with household income in columns 7 and 8. Year fixed effects are included in all columns. Other individual controls (where included) are dummy variables for gender, age group, immigrant status, education level, East Germany and being out of the labor force. Estimation is by logit in columns 1, 3, 5 and 7, by conditional logit in the remaining columns. Source: SOEP.

Pattern of missing responses As noted above, about half of the respondents are classified as not leaning towards a populist party because they don't lean towards any party or because they did not answer the relevant question. Appendix Tables A4 and A5 investigate whether there is a pattern in these non-responses. We replicate the relevant columns in Tables 1, 2 and A3, but replace the dependent variable *populist* with a dummy variable that equals 1 if the respondent did not lean towards any political party or did not answer the political question. Non-responses are more likely amongst individuals who are extreme risk lovers and *less* likely amongst those who are extremely dissatisfied. But once individual fixed effects are included, the treatment variables of interest (extreme risk love, extreme income dissatisfaction and large income loss) are no longer statistically significant in these regressions. The only exception is column (2) of Appendix Table A5, where becoming extremely dissatisfied reduces the likelihood of a non-response, with statistical significance below 0.1. We conclude that, once individual fixed effects are included, the pattern of missing observations is generally not significantly correlated with the treatment variables of interest, suggesting that our results are not driven by non-responses.

Table A4: Pattern of Missing Observations, Panel A

Dep. var.	Missing Observation Dummy					
	(1)	(2)	(3)	(4)	(5)	(6)
Risk Love	-0.0064** (0.003)	-0.0173*** (0.003)	-0.0125*** (0.003)	-0.0165*** (0.004)	-0.0022 (0.005)	-0.0027 (0.006)
Extreme Risk Love		0.3641*** (0.035)		0.1384*** (0.038)	-0.0209 (0.055)	-0.0081 (0.056)
Unemployed			0.1602*** (0.036)	0.1582*** (0.036)		0.0547 (0.054)
Income			-0.2834*** (0.017)	-0.2821*** (0.017)		0.0606* (0.033)
Observations	206,783	206,783	197,164	197,164	86,529	83,667
Controls	No	No	Yes	Yes	No	No
Individual FE	No	No	No	No	Yes	Yes

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors in parentheses are clustered at the individual level. The dependent variable is a dummy equal to one if the individual does not answer to the question on party leaning in SOEP survey. The sample does not include individuals answering to a questionnaire in which such a question is not available. Year fixed effects are included in all columns. Other individual controls (where included) are dummy variables for gender, age group, immigrant status, education level, East Germany and being out of the labor force. Estimation is by logit in columns 1, 2, 3 and 4, by conditional logit in the last two columns. Source: SOEP.

Table A5: **Pattern of Missing Observations, Panel B**

Dep. var.	Missing Observation Dummy					
	(1)	(2)	(3)	(4)	(5)	(6)
Large Income Loss					-0.0425 (0.026)	0.0241 (0.045)
Income Dissatisfaction	0.0702*** (0.005)	0.0073 (0.008)	0.0721*** (0.005)	0.0076 (0.008)		
Extreme Income Dissatisfaction	-0.1669*** (0.029)	-0.0727* (0.043)	-0.1721*** (0.029)	-0.0572 (0.044)		
Unemployed	0.0740** (0.036)	0.0127 (0.054)	0.0897** (0.037)	0.0400 (0.056)	0.1646*** (0.048)	0.1817** (0.074)
Income	-0.2043*** (0.017)	0.0618* (0.034)	-0.2026*** (0.018)	0.0566 (0.035)	-0.3712*** (0.024)	0.0149 (0.066)
Risk Love			-0.0144*** (0.004)	-0.0019 (0.006)		
Extreme Risk Love			0.1398*** (0.038)	-0.0227 (0.058)		
Observations	194,482	82,327	189,226	79,928	134,288	55,796
Controls	Yes	No	Yes	No	Yes	No
Individual FE	No	Yes	No	Yes	No	Yes

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors in parentheses are clustered at the individual level. The dependent variable is a dummy equal to one if the individual does not answer to the question on party leaning in SOEP survey. The sample does not include individuals answering to a questionnaire in which such a question is not available. Year fixed effects are included in all columns. Other individual controls (where included) are dummy variables for gender, age group, immigrant status, education level, East Germany and being out of the labor force. Estimation is by logit in columns 1, 3 and 5, by conditional logit in the remaining columns. Source: SOEP.