

Europe and the US: Comparative Economic Analysis

Problem Set 2

This problem set is due on Tuesday, June 29 at 12am. Please hand in your answers to the questions (including graphs) as well as your STATA do file. You can either email me (afiedler@wiwi.uni-frankfurt.de) or hand in your printouts after lecture on Tuesday. The data set goodbyelenin.dta can be found in the folder DATA on webct. The paper of reference for this problem set is Alberto Alesina and Nicola Fuchs-Schündeln (2007): "Good Bye Lenin (or not?) - The Effect of Communism on People's Preferences", which can be found in the Required Papers folder on webct.

Exercise 1

Different preferences in East and West?

Hint: Type *describe fs** to get a description of the variables related to preferences about financial security. Type *label list stateprivate* to see more details. The variable *east90* is a dummy variable indicating the place of residence before reunification.

- (a) Write down a test for the hypothesis that living under a Communist regime affects preferences in the long run, i.e. that the mean preference for redistribution significantly differs in East and West (Hint: use a simple LPM model without any additional regressors, command: *reg*). What is the "natural experiment" you make use of here? Discuss possible threats to the validity of the experiment.
- (b) Run the test in Stata. Interpret the size and signs of the coefficients. What is your conclusion at this stage? Provide some intuitive explanation for your results!
- (c) Briefly discuss the main differences between a linear probability model, a probit model and a logit model. Pick one of the "financial security variables" and run the same regression as in (b) using a probit model [command: *probit*]. State the formula to calculate the effect of being from East in this model. How big is the marginal effect here?
- (d) Run the probit model and include the baseline controls: age, gender, schooling, family status, occupation type, employment status, logged household income (*age, male, college vocational secondaryschool intermediate tech, married divorced marriedsep widowed, civilservant self-employed whitecollar, unempl retired ineduc nonworking training military, lnhhincome*). (Hint: It might be convenient to use the command *global* to construct a list of the baseline regressors. Note that in the

list provided I have already left out one variable in the dummy variable groups - schooling, family status, occupation type and employment status - as a control.) Provide some intuition why these variables could be useful controls. Does it still matter for the preferences whether the person is from East or West, after controlling for all these factors?

Exercise 2

Age and cohort effects

Please use the Probit Model from now on and include the baseline controls whenever it is reasonable to do so. You do not need to run regressions for all five of the financial security variables but you can focus on one of them.

- (a) Comment on the coefficient on age in your previous regression. Test whether the effect of age on preferences is the same in the Eastern and Western subsample [Hint: create a new interaction variable]. Comment on your result.
- (b) Define 5 new dummy variables for the cohorts: born after 1975, born between 1961-1976, 1946-1960, 1931-1945, and born on or before 1930. Include the cohorts in the regression and also test whether the cohort effects are different for East and West. Comment on your results.

Exercise 3

Decomposition of change over time

- (a) Run another regression to check whether there is a general and/ or Eastern specific time trend in the support for redistribution. Note that we only have observations for the "preference variables" in the years 1997 and 2002.
- (b) How would you test that the time trend is not due to the fact that the older people drop out of the sample? (Hint: check section B in the paper.)

Exercise 4

Econometric Exercises

- (a) Show that: $E[u|X] = \mu_u \rightarrow Cov[u, X] = 0$

Hint: Recall the definition: $Cov[u, X] = E[(u - \mu_u)(X - \mu_X)]$ and use the law of iterated expectations: $E[uX] = E[E[u|X]X]$.

- (b) Show that we must correct for heteroskedasticity in the error term if we have a binary outcome model. In particular, show that in the simplest binary outcome model $Y = \beta_0 + \beta_1 X + u$ the variance of the error term is not independent of X_i but given by:

$$Var[u|X] = (\beta_0 + \beta_1 X)(1 - (\beta_0 + \beta_1 X)).$$