Problem Set for Week 4: Atkin et al. (2017)

MSc (M6) "Globalization and Innovation"
Prof. Claudia Steinwender, WiSe 2022/2023

Your Task

Read the paper Atkin et al. (2017) carefully, including the figures and tables (paper is uploaded on moodle). Then, prepare answers for the following questions. Be prepared to explain your answers in class and discuss with other students. Questions that start with "STATA:" are supposed to answered in Stata; download the dataset needed from moodle.

1. Read the abstract and introduction. What is/are the research question(s) that the authors *aim* to answer? Be specific (and remember a research question ends with a question mark!)

2. Describe the randomization process and the experiment: which set of firms were considered, what was the treatment, how was the treatment assigned?

3. STATA: Open the dataset in Stata. How many observations does the dataset have? What is the unit of observation of the dataset? How many firms are in the dataset? How many firms were treated?

4. STATA: How could you check if the randomization "worked"? Check in Stata whether the control and treatment firms are similar with respect to past experience (variable `length_weaved_last_month`), household income, export experience, and quality. Are you satisfied?

5. Take-up was very low. Is this a problem? What does this mean for the success of the experiment?

6. Consider estimating equation (1). Explain the dependent variable, the level of observation, the regressors, the controls. Which research question does this regression answer? What is the purpose of the controls? Would you expect β_1 to estimate a causal effect—with and/or without controls?

7. STATA: Implement equation (1) in Stata (using the log of `profit_rug_business` as your dependent variable). First without controls, then add the controls one by one (you should be able to replicate column 1 of panel A in Table V). Does the inclusion of the controls affect the treatment effect in the way you expected?

8. Consider estimating equation (2). Explain the regressor. Which research question does this regression answer? Is β_2 identified? Why is an IV needed when we have a random experiment? Does the IV satisfy the necessary conditions for causal estimation?

9. STATA: Implement equation (2) in Stata, first using OLS (same dependent variable as before). How does this compare with the IV estimate (use the command `ivreg` for the IV estimation; you should be able to replicate column 2 of panel A in Table V)?

10. Table V on page 576 shows that profits increase after the treatment. List the potential sources in the components of profits that could have led to the profit increase. Which source seems to be most relevant?

11. Explain intuitively what the authors mean by moving along the PPF versus outwards shifts in the PPF. Why is it important to distinguish between these mechanisms? Which of the five ways the authors implement to distinguish between the mechanisms do you find most convincing and why? What could the authors have done to settle this issue more easily?

12. How do think about the external validity of the paper? For which settings (treatments, products, firms, countries...) could the insight be valid, for which settings not?

Reference

Atkin, D., A. K. Khandelwal, and A. Osman (2017, May). Exporting and Firm Performance: Evidence from a Randomized Experiment. *The Quarterly Journal of Economics 132*(2), 551–615.

This version: November 5, 2022