Assignment #2: Replication Exercise and Report

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Replication exercises are a useful learning-by-doing way to get started with research. This is likely to involve using methods and software packages that you have had very little experience with, and you will need to work more independently to troubleshoot issues that arise (as they inevitably do in research!). The goal of this exercise is to expose you to a more independent, real-world computational experience and instill in you the confidence to carry out your own computational work in your research project.

For this assignment, choose one of the four papers we have pre-selected below to replicate and modestly extend. You will download the data used in the paper, write code to analyze the data, create tables and/or figures of results, and include a write-up. See the specific instructions of which findings to replicate and extend for each paper.

Your write-up should be 5 pages and provide an overview of the paper, a discussion of your attempt to replicate the results and any issues you encountered, your results from the replication, and a modest extension to the paper. This should be written as a paper (not an outline) and include proper citations. It should be written clearly in your own words and without grammatical errors, as clear exposition is an important part of the research process. You will also attach your programming code to your GitHub project and include a README file for others to be able to replicate your work.

Paper options:

Garthwaite, Craig, Tal Gross, and Matthew J. Notowidigdo. "Public health insurance, labor supply, and employment lock." *The Quarterly Journal of Economics* 129, no. 2 (2014): 653-696.

Instructions:

1. Read the paper and find the replication package online (hint: replication packages are sometimes posted on journal webpages, author webpages, or data archives). Note that this paper's README file is pretty bare bones (yours should be more complete than this!).
2. Replicate Tables 1 and 2 and Figures 2 and 3. The data used to create these tables and figures is given in the replication package. Note: for Table 2, you do not have to calculate block bootstrap standard errors and p-values as in the table. Instead, calculate robust standard errors and print the associated p-values.
3. Extend the analysis by restricting the control group to a different subset of states that you believe might be a useful control group. Add a third column to Table 1 with your new control group and rerun the analyses to produce a new version of Table 2 and Figures 2 and 3. In your write-up of the replication exercise, be sure to explain why you chose the subset of states, your findings, and how (and why!) they possibly differ from the main results.

Wu, Alice. "Gendered Language on the Economics Job Market Rumors Forum." *AEA Papers and Proceedings* 108 (2018): 175-179.

Note: the code in this replication package is in Python and R. You can either do the replication in Python and R or translate to another language like Stata.

Instructions:

1. Read the (short) paper and find the replication package online (hint: replication packages are sometimes posted on journal webpages, author webpages, or data archives).
2. Replicate Tables 1 and 2 and Figure 1. When doing this, be sure to rerun the LASSO logit code (rather than just skipping to the R code) and provide evidence of this by showing intermediate output (e.g., the text files like "coef_lasso_logit_full.txt" and "ypred_...") or a log file of the code you ran.
3. Redo Table 1 using a different NLP model. In other words, instead of using LASSO logit, use a random forest, or an OLS prediction model, etc. In your writeup, discuss any differences you notice in the results, and discuss the advantages and disadvantages of the alternative model you chose.

Hsu, Joanne W., David A. Matsa, and Brian T. Melzer. "Unemployment Insurance as a Housing Market Stabilizer." American Economic Review, vol 108, no. 1 (2018): 49–81.

Instructions:

1. Read the paper and find the replication package online (hint: replication packages are sometimes posted on journal webpages, author webpages, or data archives). The data used to create the following tables and figures is provided in the replication package.
2. Replicate Figure 1 in the paper, which shows the geographical distribution of regular state unemployment insurance benefit (UIB) increases between 1991 and 2010, by quartile. Include two additional figures: one showing the geographical distribution of regular state unemployment insurance benefit levels in 1991, and the second showing the levels in 2010. Do you observe any correlation between the initial levels of UIB and the subsequent increases? Is the distribution of UIB across states more or less homogeneous in 2010 compared to 1991?
3. Replicate Table 3 in the paper, which explores potential determinants of state UIB by analyzing the correlation between changes in maximum benefits during 1991 and 2010 and levels of state macroeconomic variables in 1991. What is the main takeaway from this table? What happens when the state's maximum benefit in 1991 is added as a potential determinant of UIB changes?
4. Replicate Table 4 in the paper, which examines the correlation between mortgage delinquency and state UIB laws. Interpret the coefficients in this table. What is the effect of an increase in UIB on mortgage delinquency? What enables the authors to identify this effect?

Svaleryd, Helena and Jonas Vlachos. "Financial markets, the pattern of industrial specialization and comparative advantage: Evidence from OECD countries." European Economic Review, 49 (2005): 113-144.

Instructions:

1. Read the paper carefully, paying particular attention to the Data sections. This replication exercise will introduce you to the process of collecting, cleaning, and analyzing data for your own project. While it is now common practice to post replication packages for papers, this was not the case 20 years ago.

2. Replicate Table 1 in the paper. The estimated coefficients correspond to those in equation 3.3, which examines a country's financial development as a source of comparative advantage. To replicate this table, you will need to collect the relevant data (Hint: see Appendix A for the data sources).