

Econ 230B
Spring 2017
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Problem Set 2

DUE DATE: March 13

1. Chasing Natural Experiments within a Country

As seen in class, many of the best papers on labor supply responses to taxes and transfers exploit a policy change (a so-called “Natural Experiment”) in order to obtain convincing estimates. This exercise asks you to find a Natural Experiment and propose an estimation methodology.

Download the pdf copy of the OECD annual publication *Taxing Wages* for years 2010 and 2016. Those publications are available online (link here) in pdf format (when connected through UC Berkeley). Part III of this publication describes the tax/benefits systems (including payroll taxes, income taxes, and various benefits) faced by wage income earners for each OECD country. Note that recent changes in the tax/benefit system are explicitly described in Section 4 for each country.

a) Find one reform in one country which took place between 2010 and 2016 that could be used to estimate labor supply responses to taxes or transfers for some group of interest in the population. Make sure the reform is large enough to be useable for compelling identification. Describe the reform you have picked.

b) Describe the methodology you would use to estimate such labor supply responses. In particular, make sure to be fully explicit about the assumptions you need to identify the labor supply response parameters. Try to explain whether your estimates capture participation versus intensive elasticities, uncompensated versus compensated elasticities, income effects, etc.

c) Describe the data you would need to carry out the analysis. Survey or administrative data, variables, realistic sample size, time period, panel or repeated cross section, etc. Search online to investigate whether such data exist and how they could be obtained for the research analysis you are proposing.

d) (FOR FUTURE WORK): If you find a really promising Natural Experiment, the next step is to look for the related literature (you want to be the first to analyze this change!) and then try and get the data to carry out the research project.

2. CEO Pay response to the 2013 US tax increase

The goal of this exercise is to repeat the Goolsbee (2000) analysis of CEO pay around the 2013 top tax rate increase (instead of the 1993 top tax rate increase as Goolsbee did).

a) First stage: Using online sources, calculate the change in the top marginal tax rate for labor income compensation generated by the 2013 tax increase including both the change in the Federal tax rate, and the Affordable Care Act surtax. How does the size of the change compare with the 1993 tax increase from Goolsbee (2000) study?

b) Timing of the reform: search online to figure out whether people knew in advance that the 2013 tax increase would take place? Is it reasonable to think that executives could respond to the tax change as they did with the 1993 tax change?

c) Expected behavioral responses: Based on what we have learned in class about behavioral responses and your response in question b), through what channel do you expect CEOs to respond in the short and the medium-run to the 2013 tax change?

d) Empirical analysis using CEO pay: use the execucomp data extract posted online (link here) to create a table similar to table 2 in Goolsbee for years 2011 to 2014. From this table, is there evidence of a behavioral response? What components of CEO pay seem to respond the most? Using numbers from this table and the answer to question a), how large is the elasticity of compensation with respect to the net-of-tax rate in the short-run (2012 vs. 2013) and in the medium-run (2011 vs. 2014)? [no standard error required]

3. Mobility of High Income US Taxpayers across States

The goal of this exercise is to estimate the mobility of high income US taxpayers across US states due to variation in state income top tax rates across states and over time. High income US taxpayers are defined as tax filers reporting Adjusted Gross Income (AGI) above \$1m.

a) Find online information on the state top income tax rates across all states for **2014** incomes. List the ten states with the highest top tax rates (group T) and the ten states with the lowest top rates (group C) along with the top tax rates in those 20 states. (NOTE: do not exclude zero tax states, if you have ties, keep the largest states in terms of population to have exactly ten states in each group).

b) Use IRS state level data in excel format for tax year 2014 at (link here) to compare the fraction of high income earners in states in group C and states in group T. Fraction high earners is defined as the ratio of number of tax returns with AGI above \$1m to all tax returns in group.

Under what assumption does this comparison identify the effects of state income tax rates on mobility? Is this assumption realistic (how could it be tested)?

If this assumption holds, what is the elasticity of the number of high earners with respect to the net-of-tax rate at the state level?

c) Find online information on the state top income tax rates across all states for **2001** incomes. Find the ten states which had the largest increases in top tax rates (group T) and the

ten states which had the largest decreases in top tax rates (group C) from 2001 to 2014. List group C, group T, the 2001 and 2014 top tax rates in those states, and the change in top tax rates in those states.

d) Use IRS state level data in excel format for tax years 2001 and 2014 at ([link here](#)) to compare the changes in the fraction of high income earners in states in group T and states in group C from 2001 to 2014. Fraction high earners is again defined as the ratio of tax returns with AGI above \$1m to all tax returns.

Under what assumption does this comparison identifies the effects of state income tax rates on mobility? Is this assumption realistic (how could you test it)?

If this assumption holds, what is the elasticity of the number of high earners with respect to the net-of-tax rate at the state level?

e) Let us use the California tax increase at the top of 2012 to identify the effects of top tax rates. Plot the number of fraction of tax filers with \$1m+ AGI in California (treatment group) and Florida (control group) from 2009 to 2014. Estimate the DD effect using 2009-2011 as the control years and 2012-2014 as the treatment year. Does this DD estimate pass the parallel trend assumption? How could you construct a more convincing control group using information available from all the other states?