Econ 675 Assignment 1

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0 Empirical Exercises

STUDENT NAME:
Collaborators:

		(1) w Weekly earnings / baseline hours per week, including individuals without a paid job (wage=0)		(2) L Hours per week, including individuals without a paid job (hours=0)		(3) Compensating and Hours Differentials, Sufficient Statistics, and Welfare Impact of Health Reform
MA*ESHI*After*Large	β_1	-2.07	Υ_1	-1.432	w_A	0
		[-3.488 - -0.649]		[-2.615 - -0.248]		
MA*ESHI*During*Large	β_1^d	-2.34	Υ_1^d	-0.257	w_B	-1.943
		[-3.626 - -1.046]		[-1.116 - 0.603]		
MA*ESHI*Large	β_8	1.52	Υ_8	-0.889	w_D	1.050
		[0.853 - 2.182]		[-1.706 - -0.0711]		
MA*After*Large	β_{11}	-1.94	Υ_{11}	-1.778	w_F	-2.159
		[-2.850 - -1.036]		[-2.862 - -0.694]		
MA*During*Large	β_{11}^d	1.34	Υ_{11}^d	-0.756	$W_F - W_A$	-2.159
		[0.326 - 2.360]		[-1.511 - -0.000176]		
ESHI*After*Large	β_{12}	0.501	Υ_{12}	-0.328		
		[-0.795 - 1.796]		[-1.385 - 0.728]		
ESHI*During*Large	β_{12}^d	0.780	Υ_{12}^d	-0.449	L_A	0
		[-0.453 - 2.013]		[-1.071 - 0.172]		
ESHI*Large	β_{19}	2.01	Υ_{19}	7.766***	L_B	-1.778
		[1.362 - 2.648]		[7.115 - 8.418]		
After*Large	β_{22}	-0.310	Υ_{22}	-0.576	L_D	0.800
		[-1.157 - 0.536]		[-1.598 - 0.446]		
During*Large	β_{22}^d	-0.500	Υ_{22}^d	-0.140	L_F	-2.125
		[-1.429 - 0.429]		[-0.786 - 0.505]		
MA*Large	β_{23}	-2.024	Υ_{23}	-13.67***	$L_F - L_A$	-2.125
		[-4.853 - 0.806]		[-16.27 - -11.07]		
Large	β_{24}	-3.67	Υ_{24}	3.92		
		[-6.519 - -0.817]		[1.251 - 6.588]		
MA*ESHI*After	β_{1e}	0.802	Υ_{1e}	0.285	s	0.190
		[-0.843 - 2.447]		[-0.594 - 1.163]		
MA*ESHI*During	β_{1e}^d	1.61	Υ_{1e}^d	-1.442	d	-0.380
		[0.314 - 2.896]		[-2.139 - -0.745]		
MA*ESHI	β_{8e}	-0.468	Υ_{8e}	1.689	b	2.9665
		[-1.235 - 0.299]		[0.915 - 2.464]		
MA*After	β_{11e}	3.46	Υ_{11e}	3.261	ρ	0.048
		[2.453 - 4.464]		[2.398 - 4.124]	Annualized pb	$295.00
MA*During	β_{11e}^d	-0.207	Υ_{11e}^d	2.773	α+ λ—μx	0.592
		[-1.247 - 0.834]		[2.128 - 3.419]		
ESHI*After	β_{12e}	-0.870	Υ_{12e}	-0.107	ESHIAfter	0.74
		[-2.471 - 0.731]		[-0.911 - 0.697]		
ESHI*During	β_{12e}^d	-1.15	Υ_{12e}^d	-0.0546	b/τ	1
		[-2.357 - 0.0598]		[-0.609 - 0.500]		
ESHI	β_{19e}	2.55	Υ_{19e}	0.547	DWL_m	0.952939607
		[1.823 - 3.268]		[0.0871 - 1.008]		

After	β_{22e}	0.465 [-0.472 - 1.402]	Υ_{22e}	-0.295 [-1.073 - 0.483]	DWL_m/DWL_τ	0.124
During	β_{22e}^{d}	0.680 [-0.229 - 1.589]	Υ_{22e}^{d}	-0.163 [-0.704 - 0.378]		

1 Q1

Because the reform also includes an individual mandate that everyone inside Massachusetts after the reform was treated in some way. so,V, X, V'', X'' are all treated and the rest are controls.

2 Q2

$\beta_1 = \{[(V-Y)-(X-Z)]-[(V'-Y')-(X'-Z')]\}-\{[(V''-Y'')-(X''-Z'')]-[(V'''-Y''')-(X'''-Z''')]\}$

3 Q3

β_1 is the result of two stages of difference in difference. Start by doing four difference in differences of ESHI vs non-ESHI on the sub sections of Large and small MA firms and Large and small non-MA firms. These can be interpreted individually as th effect of reform one ESHI firms relative to non-ESHI firms in each category. After This, Take the difference in difference of these four sub estimate terms. Together we get the impact of reform on ESHI relative to non ESHI for large Massachusetts firms relative to small Massachusetts firms.

4 Q4

First we can clearly see this is not correct by the equation given in the hint. What we want is the change in wages observed for individuals who switch from not having ESHI before the reform to having it after the reform, relative to individuals who have the same switch in ESHI status in other states. This is not β_1 . see above.

5 Q5

By the hint we see that

$V = W_{MA,Large,ESHI,after} = \beta_1+\beta_8+\beta_{11}+\beta_{12}+\beta_{19}+\beta_{22}+\beta_{23}+(MA*Large)+\beta_{1e}+\beta_{8e}+\beta_{11e}+\beta_{12e}+\beta_{19e}+\beta_{22e}+\phi_{MA}$

and

$$V' = W_{non-MA,Large,ESHI,after} = \beta_{12} + \beta_{19} + \beta_{22} + \beta_{23} + \beta_{12e} + \beta_{19e} + \beta_{22e}$$

This gives us

$$V - V' = \beta_1 + \beta_8 + \beta_{11} + (MA * Large) + \beta_{1e} + \beta_{8e} + \beta_{11e} + \phi_{MA}$$

6 Q6

$$Z = \beta_{23} + \phi_{MA} + (MA * Large)$$

and

$$Z' = \beta_{23}$$

giving

$$Z - Z' = \phi_{MA} + (MA * Large)$$

7 Q7

$$x'' = \beta_{11e} + \beta_{22e} + \phi_{MA}$$

and

$$Z'' = \phi_{MA}$$

so

$$X'' - Z'' = \beta_{11e} + \beta_{22e}$$

8 Q8

$$X''' = \beta_{22e}$$

$$z''' = 0$$

so

$$X''' - Z''' = \beta_{22e}$$

9 Q9

$$W_f - W_A = (\beta_1 + \beta_8 + \beta_{11} + (MA * Large) + \beta_{1e} + \beta_{8e} + \beta_{11e} + \phi_{MA}) - (\phi_{MA} + (MA * Large)) - [(\beta_{11e} + \beta_{22e}) - \beta_{22e}]$$

$$= \beta_1 + \beta_8 + \beta_{11} + \beta_{1e} + \beta_{8e}$$

10 Q10

This is the change in wages observed for individuals who switch from not having ESHI before the reform to hacing it after the reform, relative to individuals who have the same switch in ESHI status in other states.

11 Q11

Because the most convincing identification comes from changes in ESHI status for a given individual induced by reform. The others rely on changes in ESHI status for a givin individual within the period either before or after the reform. The changes in ESHI status that identify these could be endogenous, even after including individual fixed effects, if individuals gain ESHI when they get a better job that includes health insurance.

12 Q12

We expect it to be negative in theory because for a given individual at a given job if an employer is giving you health-care that is valuable they can compensate you less in actual wages and you will still want the job. However, it is usually the case that better jobs offer health care and low wage jobs don't. So, without individual fixed effects, it makes sense that we see jobs with healthcare having better pay.

Even with individual fixed effects the same idea can apply. An individual may get a better job that both pays more and includes health benefits. For example, if I was working at a fast food restaurant without healthcare, but I finish college and get a job as a research analysis with healthcare this would also lead to a positive compensating differential even with fixed effects.

13 Q13

People above 64 are not in the data set at all. This makes since the elderly are required to use Medicare.

For the younger individuals I expect that they value healthcare less as they are, on average, healthier and also probably less risk averse.

14 Q14

It goes down but is within the confidence interval. The reaffirms the idea that young people value the insurance less.

15 Q15

Increasing pb to \$3000 for the 25-64 population, ρ increases from 0.048 to 0.486, and DWL_m increases from 0.95 to 1.01. Thus, the higher penalty increases the deadweight loss of the mandate by 6%

16 Q16

The paper supports a mandate based reform as this leads to smaller dead-weight loss. In fact they find that $DWL_m/DWL_\tau = 0.077$ suggesting the mandate is much more efficient.

17 Q17

The mandate-based reform is similar to the proposal under the ACA making it more applicable to the entire country. The differences in the actual penalty can be worked into the model for Massachusetts as is done on page 95.

However, there are some differences that could cause issues. Compliance may not be as high at the national level which could mean adverse selection remains high in the market for health insurance outside employers, making alternatives to ESHI less attractive. This would not effect the cost of healthcare to the employer, but it could effect the value of a dollar of ESHI relative to a dollar of wages because employees will value ESHI more if their outside option is more expensive. More adverse selection in the health insurance market outside of employment nationally could actually decrease reform-induced distortion.

18 Q18

It would decrease distortion.

19 Q19

It shouldn't change the interpretation weather or not people realize the tax is providing health-care. The tax and benefit are exogenous to the consumer regardless of if they are connected in the governments eyes.

20 Q20

This study allows us to consider an employer mandate on top of an existing individual mandate compared to taxes.

21 Code

```
1  ****************************************
2  local tag problem set //creating a local that will be used to name the log, data set, etc.
   this is a good habit and will be helpful when your code gets more complicated
3  *Mandate-Based Health Reform and the Labor Market: Evidence from the Massachusetts Reform
   (NBER Working Paper 17333)
4  *Jonathan T. Kolstad and Amanda E. Kowalski, problem set developed by Toby Chaiken
5  *Name
6  *Date
7  ****************************************
8
9  clear all //this clears any data currently loaded
10 capture log close //this closes any logs you have already been started
11 set more off //this stops the "more" messages from appearing at the bottom of your code
   when the display runs out
12
13 cd "C:\Users\Nmath_000\Documents\MI_school\Second Year\683 Public Finance\HW
   assignments\ps3\Problem_Set_Web_Version\"
14  //change directory to reflect the place where you saved the data
15
16
17 use `tag'.dta // this refers to the local macro above, designated as problem_set
18 log using `tag'.log, replace //starting a log so you refer to the results of your code at a
   later time
19
20
21 ************************************************
22 ****************Notes on Variables**************
23 ************************************************
24
25 * a1    MA*ESHI*After
26 * a8    MA*ESHI
27 * a11   MA*After
28 * a12   ESHI*After
29 * a19   ESHI
30 * a22   After
31 * a23   MA
32 * a24   state (tfipsst)
33 * a25   Large
34 * c1    MA*ESHI*During
35 * c6    MA*During
36 * c7    ESHI*During
37 * c12   During
38
39 *vars d`i' = c`i'*a25
40 *vars b`i' = a`i'*a25
41
42 ************************************************
43 ********************Regression******************
44 ************************************************
45
46 // Creating a global macro with the necessary variables for regressions
47 global explvar_nopov    "b1 d1 b8 b11 d6 b12 d7 b19 b22 d12 a25 b23 a1 c1 a8 a11 c6 a12 c7
   a19 a22 c12 a23 i.a24 i.b24"
48
49 //Regressions and Exporting to Excel
50 ///For these regressions, we use areg because we want to include fixed effects by id, but
   we do not care to see the results of each id coefficient
51
52 //TABLE 7: RESULTS FROM PREFERRED SPECIFICATION (as in paper, ages 18-64)
53
54 drop if tage<18
55 drop if tage>64
56
57 areg w2 $explvar_nopov [pw=wpfinwgt], absorb(id) cluster(a24)
58 outreg2 using "pset_table.xls", replace excel bracket ci
59
60 areg h2 $explvar_nopov [pw=wpfinwgt], absorb(id) cluster(a24)
61 outreg2 using "pset_table.xls", append excel bracket ci
62
63 ***Add additional regressions here. Be sure to specify in the outreg2 command a new file
```

```
    name OR "append excel" after "outreg2 using pset_table"
64  drop if tage<25
65
66  areg w2 $explvar_nopov [pw=wpfinwgt], absorb(id) cluster(a24)
67  outreg2 using "pset_table2.xls", replace excel bracket ci
68
69  areg h2 $explvar_nopov [pw=wpfinwgt], absorb(id) cluster(a24)
70  outreg2 using "pset_table2.xls", append excel bracket ci
71
72
73  log close
74
75
```