Econometrics Assignment 4b

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1.

a)

We find that the average value of the outcome variable before starting the treatment equals to 9.7097 tons of residual waste per week and route. This means that an average household produces 0.00924735 tons of residual waste per week. This is the equivalent of approximately 9.2 kilogram.



b)

Looking at the distribution of the outcome variable using the histogram command, we can say that it is close to a normal distribution.



2.

a)

According to the figure below, we assume that the common trend assumption holds. The trend for both the treatment and the control group are almost similar.



b)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Before | After | Difference |
| Treatment group | 9.7445 | 8.5619 | -1.1826 |
| Control group | 9.6750 | 9.6020 | -0.0730 |
|  |  | Treatment effect | -1.1096 |

In percentage terms, the treatment effect equals.

c)



Under b we found that the treatment effect is negative and equal to. This induces that the line corresponding to the treatment group (red line) drops below the line of the control group (blue line) after the treatment is implemented. That is what can be seen in the figure above. Therefore the plot is in line with the results under b.

3.

a)

The d-i-d regression for this field experiment is as follows:

Whereis the treatment dummy,controls for the fixed differences between the two groups and controls for the time-fixed effects.

b)



The estimated effect is negative and equal to -1.1096 significant at the 1%-level. The treatment effect in percentage terms is equal to -11.74%.

Copy of our Do-file

\* Computer Assignment 4b

use "C:\Users\u1266283\Downloads\bat\_did\_2017.dta"

\* 1

xtset treatment\_group calendar\_week

\* (a)

sum residual\_weight if treatment\_period==0

display 9.709718/1050

\* (b)

histogram residual\_weight

\*2

\* (a)

graph twoway (line residual\_weight calendar\_week if treatment\_group==0)(line residual\_weight calendar\_week if treatment\_group==1) if treatment\_period~=1

\* (b)

sum residual\_weight if treatment\_period==0 & treatment\_group==1

sum residual\_weight if treatment\_period==0 & treatment\_group==0

sum residual\_weight if treatment\_period==1 & treatment\_group==1

sum residual\_weight if treatment\_period==1 & treatment\_group==0

display (-1.1096)/9.7445

\* (c)

graph twoway (line residual\_weight calendar\_week if treatment\_group==0)(line residual\_weight calendar\_week if treatment\_group==1), xline(23) yscale(range(0)) ylabel(0(2)12)

graph twoway (line residual\_weight calendar\_week if treatment\_group==0), xline(23) yscale(range(0)) ylabel(0(2)12)

\*3

\* (b)

gen treatment\_dummy= treatment\_group\*treatment\_period

reg residual\_weight treatment\_dummy treatment\_group i.calendar\_week

margins, eydx(treatment\_dummy)