Econometrics Assignment 6a

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II.

The mean of the outcome variable in week 34 is 7.89

Command & output:



1. The minimum value of the time in between treatments is equal to 7 weeks.

The maximum value of the time in between treatments is equal to 35 weeks.

Command & output:



1. Command: graph twoway (scatter residual\_weight calendar\_week if RepTreatmentOngoing==0&RepTreatmentCompleted==0) (scatter residual\_weight calendar\_week if RepTreatmentOngoing==1| RepTreatmentCompleted==1) if TimeElapsed>25, by(route)

Output:



The scatter graph shows no clear sign of anything going on at all as of the date of the repeated treatment.

III.

1. Command & output:



As can be concluded from the table the ATE is estimated to be .

If the same regression is ran without clustering the standard errors, the standard error of the treatment variable rises from 0.1041 to 0.1188.

Command & output:



From these results we can conclude that being subjected to treatment leads to a 2.5% decrease in the residual weight.

1. Commands and output of large tables can be found in the log-file below.

We assumed that dydx was a typo and we used eydx instead, this indeed leads to approximately the same results as found under a) (a 2.6% decrease).

Commands & output:



The interaction term may predict but cannot be concluded to cause the treatment effect.



The marginal effects plot suggests that the greater the time elapsed since the last treatment has ended, the greater the negative marginal treatment effect of the repeated treatment i.e. the more the residual\_weight decreases when subjected to the repeated treatment. This can be seen from the negative slope of the marginal effects plot.

The marginal effects line up nicely because of the linear relationship between the value of the time elapsed and the marginal effect of the repeated treatment. This can be seen when taking the first order derivative of the estimation equation with respect to the repeated treatment variable.

1. Regression command and output:





This marginal effect plot looks different from the one generated under c) because before making this graph, four bins have been created: quick, medium1, medium2 and slow. Using these bins, the values on the y-axis give the average marginal effect per bin.

The marginal effect plot can help policymakers make the decision of how much time to leave between the first treatment and the repeated treatment. We can see form the plot that the more time has elapsed, the greater the marginal average treatment effect. We would go for the time elapsed in the slowest bin as this indicates the largest marginal treatment effect i.e. it can target its treatment.