

# Homework 7

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## 1 Stata

1. (a) The coefficient estimate on *treatment\_t* is -0.065 and the heteroskedasticity-robust standard error is 0.0014.  
(b) The coefficient estimate on *treatment\_t* is -0.070 and the heteroskedasticity-robust standard error is 0.0010.  
(c) The possible issue is that although we consider characteristics of zones, day of week, month, hour of day, it may not give us a good match group since not consider year.
2. (a) While adding an indicator for year of sample, the coefficient estimate on *treatment\_t* changes to 0.025 and the heteroskedasticity-robust standard error becomes 0.0027.  
(b) This attempt addresses the shortcoming of not considering longer term variation such as yearly level and use year variable to match and get a better comparison group.
3. (a) By using the nearest neighbour matching, the coefficient of estimating only on the 2020 data is 0.002 and the standard error is 0.0017.  
(b) The coefficient estimates from regressing the difference in the outcome variable on *treatment\_t* might be strongly influenced by the standard error, so we might choose reasonable number of nearest neighbours rather than just set the number as 1.