# PS7

William Townsend
Department of Economics, The University of Oklahoma, Norman

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## 1 Problem 8

My project is going okay so far. I'm trying to figure out a good model for causal factors of crime in Mexico. I have been fidgeting with scraping data from Wikipedia on state phenomena, but mostly I've been collecting data from INEGI. At the moment, I'm trying to see how I can assess the impacts of avocado price on homicides. Also, I'm trying to see if a US deportation shock of Mexican immigrants impacts homicides and/or property crime in Mexico. In truth, I still have a lot of work to do. I think I can find a way to apply a differences in differences model in some fashion though.

## 2 Table

From these models we can see that $\hat{\beta}_1$ is not estimated well. We vary from 0.062 to 0.050. Applying the mean method in model 2 does not yield accurate results, nor does the mice method and imputation process. We get the same results in model 1 and 3. We also get the same coefficient in model 2 and 4. Regardless, all four coefficients are inaccurate. The last two coeffecients are 0.062 and 0.052 for models 3 and 4, respectively. Both are statistically significant with a 99 percent confidence.

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| (Intercept) | 0.534*** | 0.708*** | 0.534*** | 0.708*** |
| | (0.146) | (0.116) | (0.112) | (0.116) |
| hgc | 0.062*** | 0.050*** | 0.062*** | 0.050*** |
| | (0.005) | (0.004) | (0.004) | (0.004) |
| collegenot college grad | 0.145*** | 0.168*** | 0.145*** | 0.168*** |
| | (0.034) | (0.026) | (0.025) | (0.026) |
| tenure | 0.050*** | 0.038*** | 0.050*** | 0.038*** |
| | (0.005) | (0.004) | (0.004) | (0.004) |
| tenure_sqrd | -0.002*** | -0.001*** | -0.002*** | -0.001*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| age | 0.000 | 0.000 | 0.000 | 0.000 |
| | (0.003) | (0.002) | (0.002) | (0.002) |
| marriedsingle | -0.022 | -0.027* | -0.022+ | -0.027* |
| | (0.018) | (0.014) | (0.013) | (0.014) |
| Num.Obs. | 1669 | 2229 | 2229 | 2229 |
| R2 | 0.208 | 0.147 | 0.277 | 0.147 |
| R2 Adj. | 0.206 | 0.145 | 0.275 | 0.145 |
| AIC | 1179.9 | 1091.2 | 925.5 | 1091.2 |
| BIC | 1223.2 | 1136.8 | 971.1 | 1136.8 |
| Log.Lik. | -581.936 | -537.580 | -454.737 | -537.580 |
| F | 72.917 | 63.973 | 141.686 | 63.973 |
| RMSE | 0.34 | 0.31 | 0.30 | 0.31 |

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$