Econ 244 - Homework #4

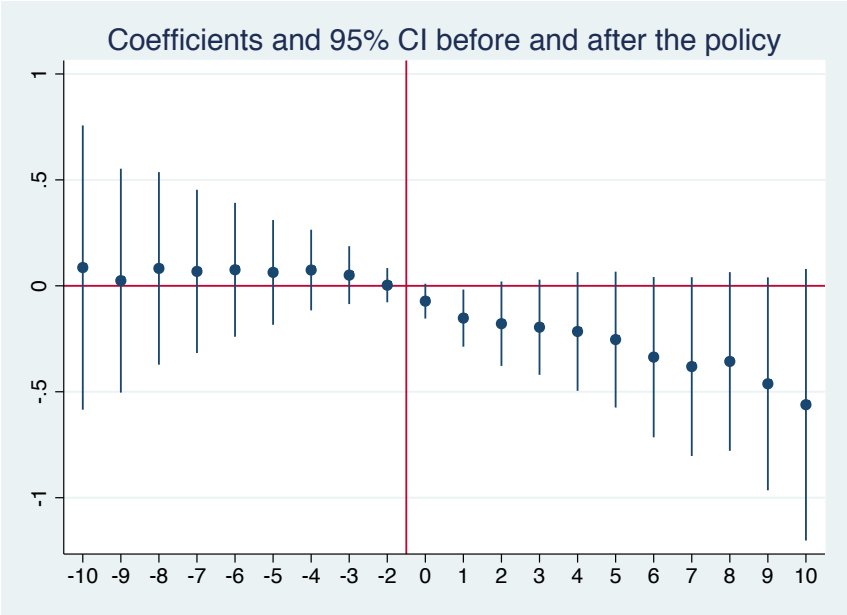
1) (CRE vs Fixed Effects)

2) (Event Study)

   (a) See do file.

   (b) See do file and table 1.

   (c) It appears arrests go down in the years following the policy relative just before the curfew was put in place. In the years prior to the policy, arrest rates were fairly flat. However, the estimates are fairly imprecise outside of a couple year band around the policy. Note that data from 10 years before the policy and 10 years after were binned into the -10 and 10 dummies.

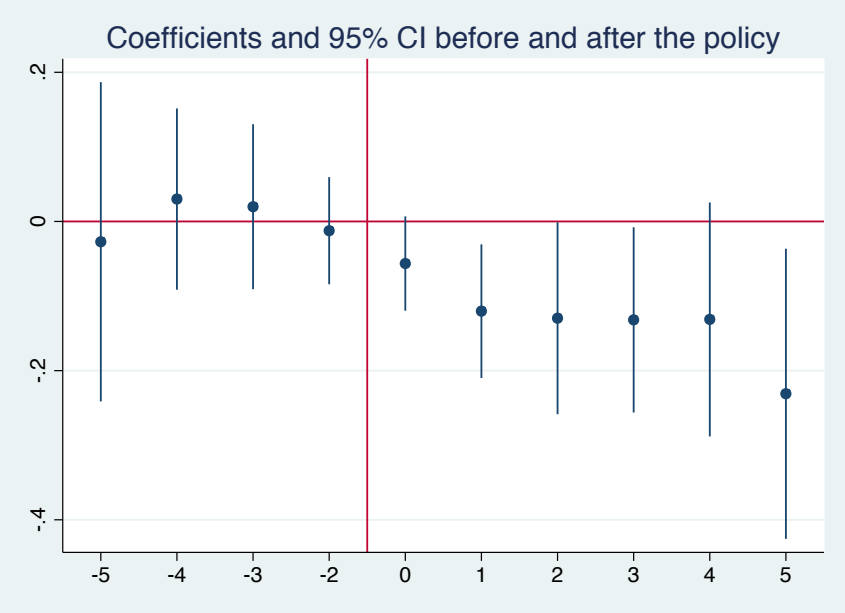


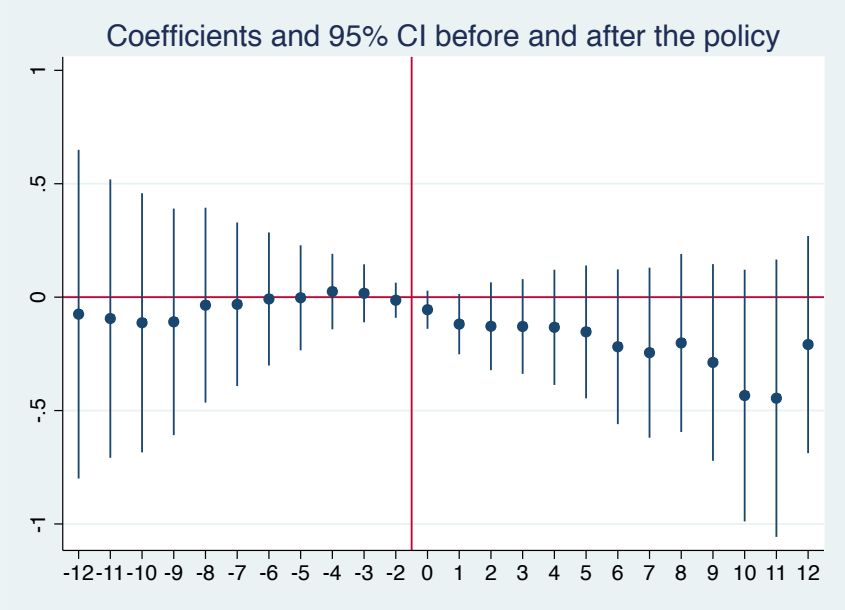
   (d) We can restrict our analysis to just look 5 years before and after the policy or 12 years before and after. We can see a slight change in the coefficients but the general pattern is similar–that arrest rates were fairly flat beforehand and decreased in the years after the policy.

Table 1: Question 2b and 2e

	(1) Log Arrests	(2) Log Arrests
0	-0.0724*	-0.0447
	(0.04097)	(0.03410)
1	-0.153**	-0.0994*
	(0.06718)	(0.05405)
2	-0.179*	-0.103
	(0.09928)	(0.08530)
3	-0.196*	-0.0969
	(0.11195)	(0.09814)
4	-0.216	-0.0984
	(0.13955)	(0.13022)
5	-0.254	-0.127
	(0.15976)	(0.15272)
6	-0.337*	-0.188
	(0.18844)	(0.18051)
7	-0.381*	-0.225
	(0.21022)	(0.21005)
8	-0.357*	-0.206
	(0.21014)	(0.21727)
9	-0.463*	-0.293
	(0.25040)	(0.25997)
10	-0.561*	-0.423
	(0.31938)	(0.37817)
-2	0.00306	-0.0266
	(0.04029)	(0.03919)
-3	0.0505	-0.0118
	(0.06806)	(0.06462)
-4	0.0744	-0.0217
	(0.09482)	(0.07838)
-5	0.0634	-0.0682
	(0.12321)	(0.09156)
-6	0.0756	-0.116
	(0.15743)	(0.11055)
-7	0.0681	-0.163
	(0.19197)	(0.13063)
-8	0.0822	-0.174
	(0.22642)	(0.15078)
-9	0.0243	-0.277
	(0.26328)	(0.17508)
-10	0.0862	-0.342
	(0.33427)	(0.20880)
Constant	6.545***	6.556***
	(0.26179)	(0.10881)
Year Fixed Effects	X	X
City Fixed Effects	X	X
City-Specific Time Trend		X
R^2	0.804	0.870
Observations	1297	1297

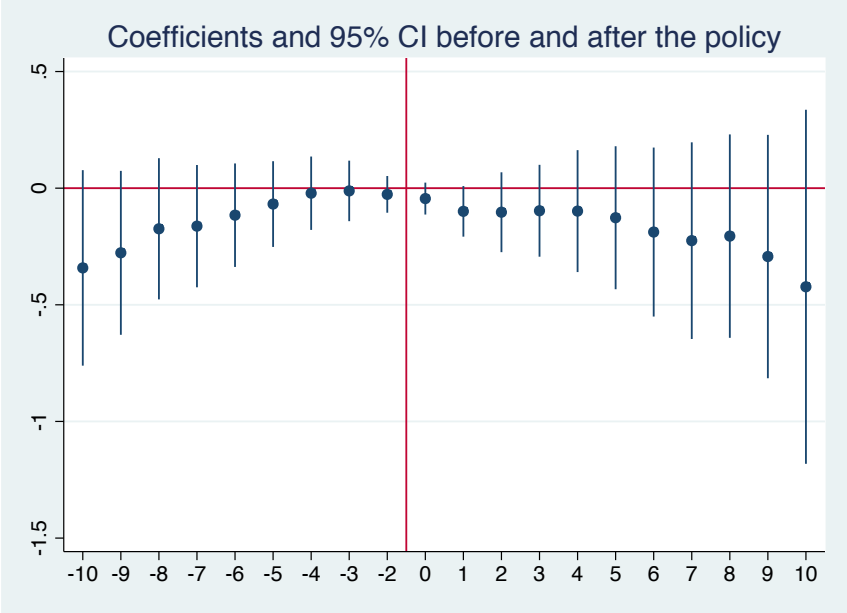
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01





(e) When we add a linear city-specific trend, we get a slightly different story from the data. It appears that arrests were slightly increasing prior to the policy change and then decreased afterwards. Perhaps explaining the impetus for the policy change.

	Log of Arrests Made in						
	1984	1985	1986	1987	1988	1989	1990
	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Enacted in 1985	-0.50	-0.76	-0.71	-0.60	-0.59	-0.65	-0.85
	(0.66)	(0.64)	(0.72)	(0.76)	(0.72)	(0.71)	(0.68)
Enacted in 1987	0.70	0.49	0.47	0.20	0.03	0.06	0.03
	(0.47)	(0.46)	(0.52)	(0.54)	(0.52)	(0.51)	(0.49)
Enacted in 1988	1.01**	0.92**	1.01*	1.08*	1.18**	1.16**	1.18**
	(0.47)	(0.46)	(0.52)	(0.54)	(0.52)	(0.51)	(0.49)
Enacted in 1989	-0.62	-0.67*	-0.69	-0.76*	-0.56	-0.74*	-0.87**
	(0.39)	(0.38)	(0.43)	(0.45)	(0.43)	(0.42)	(0.40)
Enacted in 1990	-0.06	-0.15	-0.19	-0.22	-0.28	-0.26	-0.26
	(0.34)	(0.33)	(0.37)	(0.39)	(0.37)	(0.37)	(0.35)
Year Intercept	6.80***	6.91***	6.90***	6.86***	6.87***	6.97***	7.00***
	(0.10)	(0.10)	(0.11)	(0.12)	(0.11)	(0.11)	(0.11)
N	53						



3) (Dynamic Panel)

4) (CRE Event Study)

   (a) See do file.

   (b) Estimating the model with "mvreg".

   (c) To ease notation, let $H \equiv \{85, 87, 88, 89, 90\}$ be the set of event dates.

   First, observe that we can write $\pi_{k,t}$ as including the dynamic causal effects as well as the endogenous component. That is, we can write:

$$\pi_{k,t} = \delta_{t-k}\mathbf{1}(t \geq k) + \eta_k$$

As is stated in the original problem, this directly implies the first set of linear restrictions:

$$\pi_{k,t} = \pi_{k,t'} \ \forall (t, t') < k$$

Next, observe that for all h such that $k, k' \in H$ and for all t and s, we have

$$\begin{aligned} \pi_{k',k'+t} - \pi_{k,k+t} &= \eta_{k'} - \eta_k \\ &= \pi_{k',k'+s} - \pi_{k,k+s} \end{aligned}$$

Similarly, we also have for $k, k' \in H$ and time periods t and s:

$$\begin{aligned} \pi_{k,k+t+s} - \pi_{k,k+t} &= \delta_{t+s} - \delta_t \\ &= \pi_{k',k'+t+s} - \pi_{k',k'+t} \end{aligned}$$