Statistics/Data Analysis

```
      name:  <unnamed>
       log:  C:\Users\Lara\Documents\Econo2\hw4\hw4_log.smcl
  log type:  smcl
 opened on:  25 Apr 2020, 16:25:21

1 .
2 . use "lowbirth.dta", clear

3 .
4 . reg lowbrth afdcprc lphypc lbedspc lpcinc lpopul i.county i.year

      Source |       SS           df       MS      Number of obs   =       100
-------------+----------------------------------   F(55, 44)       =     70.98
       Model |  133.104961        55   2.4200902   Prob > F        =    0.0000
    Residual |  1.50013382        44   .03409395   R-squared       =    0.9889
-------------+----------------------------------   Adj R-squared   =    0.9749
       Total |  134.605095        99  1.35964742   Root MSE        =    .18465

------------------------------------------------------------------------------
     lowbrth |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     afdcprc |  -.1760763   .0903733    -1.95   0.058    -.3582116    .006059
      lphypc |   5.894509   2.816689     2.09   0.042     .2178452   11.57117
     lbedspc |  -1.576195   .8852111    -1.78   0.082    -3.360221    .2078308
      lpcinc |  -.8455268   1.356773    -0.62   0.536    -3.579924    1.88887
      lpopul |   3.441116   2.872175     1.20   0.237    -2.347372    9.229604
             |
      county |
          2  |  -8.129407   2.295061    -3.54   0.001     -12.7548   -3.504015
          3  |  -4.063061   .9604394    -4.23   0.000    -5.998699   -2.127422
          4  |  -1.491532   .6400166    -2.33   0.024    -2.781401   -.2016634
          5  |    -.02479   2.348241    -0.01   0.992    -4.757359    4.707779
          6  |   -2.81477   1.115026    -2.52   0.015    -5.061958   -.5675823
          7  |  -5.840162   2.173992    -2.69   0.010    -10.22156   -1.458768
          8  |  -6.986195   2.189801    -3.19   0.003    -11.39945    -2.57294
          9  |   .2952137   1.427513     0.21   0.837    -2.581749    3.172176
         10  |   .9885621   .6236365     1.59   0.120    -.2682946    2.245419
         11  |  -7.139243   2.179158    -3.28   0.002    -11.53105   -2.747438
         12  |  -5.509837   1.681341    -3.28   0.002    -8.898357   -2.121316
         13  |   .5404552   1.459342     0.37   0.713    -2.400656    3.481566
         14  |   -1.09742   .4132427    -2.66   0.011    -1.930256   -.2645846
         15  |  -3.338295   .4186916    -7.97   0.000    -4.182113   -2.494478
         16  |  -3.447964   .6118978    -5.63   0.000    -4.681163   -2.214764
         17  |  -1.759983   .3693672    -4.76   0.000    -2.504393   -1.015572
         18  |   .3091829   .5848325     0.53   0.600    -.8694695    1.487835
         19  |  -6.602336   1.475999    -4.47   0.000    -9.577017   -3.627655
         20  |  -4.485343   2.318293    -1.93   0.059    -9.157556    .1868697
         21  |  -5.345787   2.255882    -2.37   0.022    -9.892218   -.7993558
         22  |   .7117727   1.068533     0.67   0.509    -1.441715     2.86526
         23  |  -4.655914   1.036072    -4.49   0.000     -6.74398   -2.567848
         24  |   1.753777   .8212603     2.14   0.038     .0986361    3.408919
         25  |  -1.594353   .7361207    -2.17   0.036    -3.077907   -.1107997
         26  |  -6.163828   1.647696    -3.74   0.001    -9.484542   -2.843115
         27  |  -5.406194     .97024    -5.57   0.000    -7.361585   -3.450804
         28  |  -5.197631   1.604927    -3.24   0.002    -8.432149   -1.963113
         29  |  -8.275586   1.743792    -4.75   0.000    -11.78997   -4.761205
         30  |  -1.866046   1.630092    -1.14   0.259     -5.15128    1.419187
         31  |  -4.525078   1.352045    -3.35   0.002    -7.249946   -1.800209
         32  |  -.2853575   2.499995    -0.11   0.910    -5.323766    4.753051
         33  |  -.4383366   .7265961    -0.60   0.549    -1.902695    1.026022
         34  |  -7.535544   1.775703    -4.24   0.000    -11.11424   -3.956848
         35  |   .1136548   1.200262     0.09   0.925    -2.305314    2.532623
         36  |  -2.013613   .4090088    -4.92   0.000    -2.837916    -1.18931
         37  |  -6.069975   1.174573    -5.17   0.000    -8.437171   -3.702779
         38  |  -.5126973   1.586627    -0.32   0.748    -3.710333    2.684939
         39  |  -8.226808   2.236336    -3.68   0.001    -12.73385   -3.719769
         40  |  -.5452724   .4622961    -1.18   0.245    -1.476969    .3864242
         41  |  -6.342898   1.692954    -3.75   0.001    -9.754824   -2.930973
         42  |  -.5709899   .6461477    -0.88   0.382    -1.873215    .7312351
         43  |     1.3658   1.458269     0.94   0.354    -1.573147    4.304747
         44  |  -6.584192   1.438308    -4.58   0.000    -9.482912   -3.685473
```

45	-10.78512	2.776523	-3.88	0.000	-16.38084	-5.189409
46	-2.101626	1.080374	-1.95	0.058	-4.278976	.0757252
47	-4.71512	1.181334	-3.99	0.000	-7.095942	-2.334298
48	-3.033909	.9587698	-3.16	0.003	-4.966182	-1.101635
49	-2.912446	.6814152	-4.27	0.000	-4.285748	-1.539143
50	-5.036552	2.173863	-2.32	0.025	-9.417685	-.6554197
year						
1990	.1060158	.3090664	0.34	0.733	-.5168667	.7288983
_cons	-.6659436	22.48698	-0.03	0.977	-45.98548	44.65359

```
5 .
6 . reg lowbrth afdcprc lphypc lbedspc lpcinc lpopul i.county i.year, robust
```

Linear regression

Number of obs	100
F(55, 44)	2370.33
Prob > F	0.0000
R-squared	0.9889
Root MSE	.18465

lowbrth	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
afdcprc	-.1760763	.0767568	-2.29	0.027	-.3307695	-.021383
lphypc	5.894509	3.098646	1.90	0.064	-.3504018	12.13942
lbedspc	-1.576195	1.236188	-1.28	0.209	-4.067567	.9151775
lpcinc	-.8455268	1.484034	-0.57	0.572	-3.8364	2.145346
lpopul	3.441116	2.687705	1.28	0.207	-1.975596	8.857829
county						
2	-8.129407	3.401999	-2.39	0.021	-14.98569	-1.273129
3	-4.063061	1.294656	-3.14	0.003	-6.672269	-1.453853
4	-1.491532	.8779392	-1.70	0.096	-3.260902	.2778382
5	-.02479	2.884797	-0.01	0.993	-5.838717	5.789137
6	-2.81477	1.490371	-1.89	0.066	-5.818416	.1888754
7	-5.840162	2.690564	-2.17	0.035	-11.26264	-.4176872
8	-6.986195	3.494381	-2.00	0.052	-14.02866	.0562667
9	.2952137	1.690894	0.17	0.862	-3.112558	3.702986
10	.9885621	.7728826	1.28	0.208	-.5690804	2.546205
11	-7.139243	3.337846	-2.14	0.038	-13.86623	-.4122565
12	-5.509837	2.185067	-2.52	0.015	-9.91355	-1.106123
13	.5404552	1.665359	0.32	0.747	-2.815856	3.896766
14	-1.09742	.5700963	-1.92	0.061	-2.246374	.0515332
15	-3.338295	.5132306	-6.50	0.000	-4.372643	-2.303947
16	-3.447964	.9485595	-3.63	0.001	-5.35966	-1.536267
17	-1.759983	.4707596	-3.74	0.001	-2.708736	-.8112291
18	.3091829	.5941688	0.52	0.605	-.8882856	1.506651
19	-6.602336	2.320295	-2.85	0.007	-11.27858	-1.926088
20	-4.485343	2.629575	-1.71	0.095	-9.784904	.8142181
21	-5.345787	2.331047	-2.29	0.027	-10.0437	-.6478707
22	.7117727	1.328405	0.54	0.595	-1.965452	3.388997
23	-4.655914	1.128002	-4.13	0.000	-6.929252	-2.382575
24	1.753777	.8503334	2.06	0.045	.040043	3.467512
25	-1.594353	.7214351	-2.21	0.032	-3.04831	-.1403965
26	-6.163828	2.523582	-2.44	0.019	-11.24977	-1.077882
27	-5.406194	1.579803	-3.42	0.001	-8.590077	-2.222311
28	-5.197631	2.462869	-2.11	0.041	-10.16122	-.2340445
29	-8.275586	2.741642	-3.02	0.004	-13.801	-2.750169
30	-1.866046	1.73154	-1.08	0.287	-5.355736	1.623643
31	-4.525078	2.062834	-2.19	0.034	-8.682447	-.3677085
32	-.2853575	2.535032	-0.11	0.911	-5.394378	4.823663
33	-.4383366	.8097041	-0.54	0.591	-2.070188	1.193515
34	-7.535544	2.873688	-2.62	0.012	-13.32708	-1.744006
35	.1136548	1.457485	0.08	0.938	-2.823714	3.051024
36	-2.013613	.4704261	-4.28	0.000	-2.961694	-1.065531
37	-6.069975	1.681759	-3.61	0.001	-9.459338	-2.680611
38	-.5126973	1.684043	-0.30	0.762	-3.906662	2.881267
39	-8.226808	3.433616	-2.40	0.021	-15.14681	-1.306809
40	-.5452724	.6147855	-0.89	0.380	-1.784291	.6937464

41	-6.342898	2.524643	-2.51	0.016	-11.43098	-1.254815
42	-.5709899	.6000098	-0.95	0.346	-1.78023	.6382503
43	1.3658	2.107013	0.65	0.520	-2.880605	5.612205
44	-6.584192	2.132298	-3.09	0.003	-10.88156	-2.286828
45	-10.78512	4.348781	-2.48	0.017	-19.54952	-2.020731
46	-2.101626	1.146197	-1.83	0.073	-4.411633	.2083818
47	-4.71512	1.485005	-3.18	0.003	-7.707951	-1.72229
48	-3.033909	1.439464	-2.11	0.041	-5.934957	-.1328599
49	-2.912446	.7489318	-3.89	0.000	-4.421818	-1.403073
50	-5.036552	3.226304	-1.56	0.126	-11.53874	1.465636
year						
1990	.1060158	.3675668	0.29	0.774	-.6347664	.8467981
_cons	-.6659436	26.09097	-0.03	0.980	-53.24884	51.91695

```
7 .
8 . reg lowbrth afdcprc lphypc lbedspc lpcinc lpopul i.county i.year, cluster(county)
```

Linear regression

Number of obs	=	100
F(5, 49)	=	.
Prob > F	=	.
R-squared	=	0.9889
Root MSE	=	.18465

(Std. Err. adjusted for **50** clusters in county)

lowbrth	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
afdcprc	-.1760763	.109103	-1.61	0.113	-.395327	.0431744
lphypc	5.894509	4.404449	1.34	0.187	-2.956562	14.74558
lbedspc	-1.576195	1.75713	-0.90	0.374	-5.10728	1.95489
lpcinc	-.8455268	2.109421	-0.40	0.690	-5.084567	3.393514
lpopul	3.441116	3.820332	0.90	0.372	-4.236128	11.11836
county						
2	-8.129407	4.8326	-1.68	0.099	-17.84088	1.582066
3	-4.063061	1.835128	-2.21	0.032	-7.750888	-.3752334
4	-1.491532	1.212791	-1.23	0.225	-3.928728	.9456636
5	-.02479	4.098225	-0.01	0.995	-8.260481	8.210901
6	-2.81477	2.114302	-1.33	0.189	-7.06362	1.434079
7	-5.840162	3.818293	-1.53	0.133	-13.51331	1.832985
8	-6.986195	4.95043	-1.41	0.164	-16.93446	2.962067
9	.2952137	2.397216	0.12	0.902	-4.522173	5.1126
10	.9885621	1.033225	0.96	0.343	-1.087781	3.064906
11	-7.139243	4.742129	-1.51	0.139	-16.66891	2.390422
12	-5.509837	3.102844	-1.78	0.082	-11.74524	.7255621
13	.5404552	2.363669	0.23	0.820	-4.209515	5.290425
14	-1.09742	.7928226	-1.38	0.173	-2.690657	.4958161
15	-3.338295	.7196737	-4.64	0.000	-4.784533	-1.892057
16	-3.447964	1.315072	-2.62	0.012	-6.090699	-.8052278
17	-1.759983	.6087709	-2.89	0.006	-2.983354	-.5366117
18	.3091829	.7984105	0.39	0.700	-1.295283	1.913649
19	-6.602336	3.282615	-2.01	0.050	-13.199	-.005674
20	-4.485343	3.735222	-1.20	0.236	-11.99155	3.020867
21	-5.345787	3.310876	-1.61	0.113	-11.99924	1.307668
22	.7117727	1.874463	0.38	0.706	-3.055101	4.478646
23	-4.655914	1.597387	-2.91	0.005	-7.865984	-1.445843
24	1.753777	1.182056	1.48	0.144	-.6216533	4.129208
25	-1.594353	1.017895	-1.57	0.124	-3.639891	.451184
26	-6.163828	3.572215	-1.73	0.091	-13.34246	1.014806
27	-5.406194	2.224925	-2.43	0.019	-9.877347	-.935041
28	-5.197631	3.471403	-1.50	0.141	-12.17368	1.778415
29	-8.275586	3.892787	-2.13	0.039	-16.09843	-.4527383
30	-1.866046	2.450095	-0.76	0.450	-6.789696	3.057604
31	-4.525078	2.929246	-1.54	0.129	-10.41162	1.361463
32	-.2853575	3.599405	-0.08	0.937	-7.518633	6.947918
33	-.4383366	1.143354	-0.38	0.703	-2.735993	1.85932
34	-7.535544	4.075017	-1.85	0.070	-15.7246	.6535092
35	.1136548	2.057425	0.06	0.956	-4.020895	4.248205

36	-2.013613	.6518548	-3.09	0.003	-3.323564	-.7036614
37	-6.069975	2.362297	-2.57	0.013	-10.81719	-1.322761
38	-.5126973	2.390622	-0.21	0.831	-5.316832	4.291437
39	-8.226808	4.878995	-1.69	0.098	-18.03152	1.5779
40	-.5452724	.8637945	-0.63	0.531	-2.281132	1.190588
41	-6.342898	3.584327	-1.77	0.083	-13.54587	.8600758
42	-.5709899	.8440846	-0.68	0.502	-2.267241	1.125262
43	1.3658	2.992532	0.46	0.650	-4.647917	7.379517
44	-6.584192	3.022999	-2.18	0.034	-12.65914	-.5092488
45	-10.78512	6.179703	-1.75	0.087	-23.2037	1.633453
46	-2.101626	1.623374	-1.29	0.202	-5.363917	1.160666
47	-4.71512	2.105877	-2.24	0.030	-8.947039	-.4832017
48	-3.033909	2.038883	-1.49	0.143	-7.131197	1.06338
49	-2.912446	1.057178	-2.75	0.008	-5.036924	-.7879672
50	-5.036552	4.572759	-1.10	0.276	-14.22586	4.15275
year						
1990	.1060158	.5224634	0.20	0.840	-.9439137	1.155945
_cons	-.6659436	37.08579	-0.02	0.986	-75.19263	73.86075

```
9 .
10.
11. ***** Part 1C
12.
13. gen dum_year = 0

14. replace dum_year = 1 if year == 1990
  (50 real changes made)

15. sort county

16. * Calculate mean by county *
17. foreach x in lowbrth afdcprc lphypc lbedspc lpcinc lpopul dum_year{
    2.         by county: egen `x'_mean = mean(`x')
    3. }

18. * Demean variables *
19. foreach x in lowbrth afdcprc lphypc lbedspc lpcinc lpopul dum_year{
    2.         gen `x'_dm = `x' - `x'_mean
    3. }

20.
21. reg *_dm,  vce(cluster county)

Linear regression                               Number of obs     =        100
                                                F(6, 49)          =       5.62
                                                Prob > F          =     0.0002
                                                R-squared         =     0.3839
                                                Root MSE          =     .12701

                                   (Std. Err. adjusted for 50 clusters in county)
```

lowbrth_dm	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
afdcprc_dm	-.1760763	.075045	-2.35	0.023	-.3268848	-.0252678
lphypc_dm	5.894509	3.029538	1.95	0.057	-.1935754	11.98259
lbedspc_dm	-1.576195	1.208617	-1.30	0.198	-4.005002	.8526125
lpcinc_dm	-.8455268	1.450936	-0.58	0.563	-3.761291	2.070238
lpopul_dm	3.441116	2.627762	1.31	0.196	-1.839568	8.721801
dum_year_dm	.1060158	.3593691	0.30	0.769	-.6161634	.828195
_cons	0	(omitted)				

```
22.
23.
24.
25. ****** Part 1E
26.
27. gen afdc2 = afdcprc^2

28.
29. xtset county year
        panel variable:  county (strongly balanced)
         time variable:  year, 1987 to 1990, but with gaps
                 delta:  1 unit

30.
31. xtreg lowbrth afdcprc afdc2 lphypc lbedspc lpcinc lpopul dum_year, fe cluster(county
  > )

Fixed-effects (within) regression               Number of obs      =       100
Group variable: county                          Number of groups   =        50

R-sq:                                           Obs per group:
     within  = 0.4052                                         min =         2
     between = 0.1671                                         avg =       2.0
     overall = 0.1606                                         max =         2

                                                F(7,49)            =      5.43
corr(u_i, Xb)  = -0.9291                        Prob > F           =    0.0001

                                 (Std. Err. adjusted for 50 clusters in county)
------------------------------------------------------------------------------
             |               Robust
    lowbrth |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
------------+-----------------------------------------------------------------
    afdcprc |   -.503505    .253827    -1.98   0.053    -1.013589    .0065794
      afdc2 |   .0396095   .0308564     1.28   0.205    -.0223988    .1016177
     lphypc |   6.620886   3.350661     1.98   0.054    -.1125194    13.35429
    lbedspc |  -1.407963   1.306162    -1.08   0.286    -4.032794    1.216867
     lpcinc |  -.9987863   1.498077    -0.67   0.508    -4.009285    2.011712
     lpopul |   4.429027   2.842555     1.56   0.126    -1.283302    10.14136
   dum_year |   .1245915   .3757599     0.33   0.742    -.6305264    .8797093
      _cons |  -6.947183   27.31169    -0.25   0.800    -61.83209    47.93772
------------+-----------------------------------------------------------------
    sigma_u |  2.8840079
    sigma_e |  .18353475
        rho |  .99596644   (fraction of variance due to u_i)
------------------------------------------------------------------------------

32.
33.
34. ******Q2******
35.
36. use "curfews_class.dta", clear
  (UNIFORM CRIME REPORTING PROGRAM [UNITED STATES]: ARRESTS BY AGE, SEX, AND RACE F)

37.
38. gen E = 0

39. replace E = 1 if t==0
  (53 real changes made)
```

```
40.
41. egen cityid=group(city)

42.
43. tsset cityid year
        panel variable:  cityid (unbalanced)
         time variable:  year, 80 to 104
                 delta:  1 unit

44.
45. gen Emin= year-enacted <=-5

46. gen Emax= year-enacted >=5

47.
48. xi: areg lnarrests Emin l(-4/-2).E E l(1/4).E Emax i.year, abs(city) cluster(city)
  i.year            _Iyear_80-104       (naturally coded; _Iyear_80 omitted)
  note: _Iyear_81 omitted because of collinearity
  note: _Iyear_82 omitted because of collinearity
  note: _Iyear_83 omitted because of collinearity
  note: _Iyear_100 omitted because of collinearity
  note: _Iyear_101 omitted because of collinearity
  note: _Iyear_102 omitted because of collinearity
  note: _Iyear_103 omitted because of collinearity
  note: _Iyear_104 omitted because of collinearity

  Linear regression, absorbing indicators         Number of obs     =        890
  Absorbed variable: city                         No. of categories =         53
                                                  F(  26,     52)   =      10.35
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.8792
                                                  Adj R-squared     =     0.8676
                                                  Root MSE          =     0.2608

                                    (Std. Err. adjusted for 53 clusters in city)
------------------------------------------------------------------------------
             |               Robust
  lnarrests  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Emin |   .0067197   .1102081     0.06   0.952    -.2144291    .2278686
             |
           E |
          F4.|   .0385105   .0750585     0.51   0.610    -.1121055    .1891265
          F3.|   .0462845   .0599628     0.77   0.444    -.0740396    .1666086
          F2.|   .0060545   .0391672     0.15   0.878    -.0725401    .0846492
          --.|  -.0703697   .0337418    -2.09   0.042    -.1380775   -.0026619
          L1.|  -.1401267   .0499852    -2.80   0.007    -.2404294   -.0398241
          L2.|  -.1592849   .0772518    -2.06   0.044     -.314302   -.0042678
          L3.|  -.1542395   .0785757    -1.96   0.055    -.3119131    .0034341
          L4.|  -.1593464   .0973851    -1.64   0.108    -.3547638     .036071
             |
        Emax |  -.2555173    .121244    -2.11   0.040    -.4988113   -.0122234
   _Iyear_81 |           0  (omitted)
   _Iyear_82 |           0  (omitted)
   _Iyear_83 |           0  (omitted)
   _Iyear_84 |   .1852766   .2080203     0.89   0.377    -.2321467    .6026998
   _Iyear_85 |   .2911013   .2009289     1.45   0.153    -.1120921    .6942948
   _Iyear_86 |   .2742315   .2023105     1.36   0.181    -.1317341    .6801972
   _Iyear_87 |   .2309786   .2079634     1.11   0.272    -.1863304    .6482877
   _Iyear_88 |   .2446843   .1747288     1.40   0.167    -.1059347    .5953034
   _Iyear_89 |   .3362199   .1622981     2.07   0.043      .010545    .6618948
   _Iyear_90 |   .3626878   .1413242     2.57   0.013     .0791001    .6462756
   _Iyear_91 |   .4100951   .1193865     3.44   0.001     .1705286    .6496616
   _Iyear_92 |   .4338945   .0997588     4.35   0.000     .2337139    .6340752
   _Iyear_93 |   .4256492   .0862554     4.93   0.000     .2525652    .5987333
   _Iyear_94 |    .506797   .0776378     6.53   0.000     .3510054    .6625886
   _Iyear_95 |   .4963928   .0677483     7.33   0.000     .3604458    .6323397
   _Iyear_96 |   .4012297   .0677765     5.92   0.000     .2652261    .5372332
   _Iyear_97 |   .3630436   .0511624     7.10   0.000     .2603787    .4657084
   _Iyear_98 |   .2285196   .0461964     4.95   0.000     .1358197    .3212195
   _Iyear_99 |   .0220071   .0465335     0.47   0.638    -.0713691    .1153834
  _Iyear_100 |           0  (omitted)
```

```
   _Iyear_101 |          0  (omitted)
   _Iyear_102 |          0  (omitted)
   _Iyear_103 |          0  (omitted)
   _Iyear_104 |          0  (omitted)
        _cons |    6.61235   .1149185    57.54   0.000     6.381749    6.842951
------------------------------------------------------------------------------

49.
50.
51. mat coeff=[_b[Emin]\  _b[F4.]\ _b[F3.]\ _b[F2.]\ 0\ _b[E]\ _b[L1.]\ _b[L2.]\ _b[L3.]
  > \ _b[L4.]\  _b[Emax]]

52. mat se=[_se[Emin]\  _se[F4.]\ _se[F3.]\ _se[F2.]\ 0\ _se[E]\ _se[L1.]\ _se[L2.]\ _se
  > [L3.]\ _se[L4.]\  _se[Emax]]

53. mat upper=coeff+((1.96)*se)

54. mat lower=coeff-((1.96)*se)

55. mat x=(-5\-4\-3\-2\-1\0 \1 \2 \3 \4 \5)

56. mat data=[coeff,upper,lower,x]

57. svmat data

58. rename data1 coeff

59. rename data2 upper

60. rename data3 lower

61. rename data4 x

62. twoway (line coeff x, lpattern(solid) lcolor(black)) (line upper x, lpattern(dash)
  > lcolor(black)) (line lower x, lpattern(dash) lcolor(black)), xline(0, lpattern(short
  > dash)) legend(off)xtitle(Years Since Enactment) title("Estimates and 95% Confidence
  > Interval")  xlabel(-5 -4 -3 -2 -1 0 1 2 3 4 5)

63. graph export event_study_fig1.pdf, replace
  (file event_study_fig1.pdf written in PDF format)

64.
65. **********
66. use "curfews_class.dta", clear
  (UNIFORM CRIME REPORTING PROGRAM [UNITED STATES]: ARRESTS BY AGE, SEX, AND RACE F)

67. gen E = 0

68. replace E = 1 if t==0
  (53 real changes made)

69. egen cityid=group(city)

70. tsset cityid year
        panel variable:  cityid (unbalanced)
         time variable:  year, 80 to 104
                 delta:  1 unit

71. gen Emin= year-enacted <=-3
```

```
72. gen Emax= year-enacted >=3

73. xi: areg lnarrests Emin l(-3/-2).E E l(1/3).E Emax i.year, abs(city) cluster(city)
  i.year            _Iyear_80-104       (naturally coded; _Iyear_80 omitted)
  note: _Iyear_81 omitted because of collinearity
  note: _Iyear_82 omitted because of collinearity
  note: _Iyear_101 omitted because of collinearity
  note: _Iyear_102 omitted because of collinearity
  note: _Iyear_103 omitted because of collinearity
  note: _Iyear_104 omitted because of collinearity

  Linear regression, absorbing indicators          Number of obs     =        995
  Absorbed variable: city                          No. of categories =         53
                                                   F(  26,     52)   =      10.96
                                                   Prob > F          =     0.0000
                                                   R-squared         =     0.8680
                                                   Adj R-squared     =     0.8568
                                                   Root MSE          =     0.2774

                                        (Std. Err. adjusted for 53 clusters in city)
------------------------------------------------------------------------------
             |               Robust
  lnarrests  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Emin |   -.000806   .0827244    -0.01   0.992    -.1668046    .1651926
             |
           E |
         F3. |   .0394914     .05777     0.68   0.497    -.0764327    .1554154
         F2. |  -.0101564   .0360271    -0.28   0.779      -.08245    .0621372
         --. |  -.0681567   .0321233    -2.12   0.039    -.1326168   -.0036966
         L1. |    -.13426   .0460754    -2.91   0.005    -.2267171   -.0418029
         L2. |  -.1440567   .0684712    -2.10   0.040    -.2814543   -.0066591
         L3. |   .0639814    .043399     1.47   0.146     -.023105    .1510679
             |
        Emax |   -.202703   .0950408    -2.13   0.038    -.3934164   -.0119897
  _Iyear_81  |          0  (omitted)
  _Iyear_82  |          0  (omitted)
  _Iyear_83  |   .4210162   .1642538     2.56   0.013     .0914168    .7506155
  _Iyear_84  |    .416645   .1617176     2.58   0.013      .092135    .7411551
  _Iyear_85  |   .5097153   .1553533     3.28   0.002     .1979761    .8214544
  _Iyear_86  |   .4937085   .1594283     3.10   0.003     .1737922    .8136247
  _Iyear_87  |   .4453996   .1685107     2.64   0.011     .1072583     .783541
  _Iyear_88  |   .4667001   .1415228     3.30   0.002     .1827138    .7506863
  _Iyear_89  |   .5559322   .1321398     4.21   0.000     .2907743    .8210901
  _Iyear_90  |    .585186   .1221739     4.79   0.000     .3400261    .8303458
  _Iyear_91  |   .6258703   .1064235     5.88   0.000      .412316    .8394246
  _Iyear_92  |   .6463703   .0883662     7.31   0.000     .4690506    .8236901
  _Iyear_93  |    .631865   .0790218     8.00   0.000     .4732961    .7904338
  _Iyear_94  |   .7079693   .0763286     9.28   0.000     .5548047    .8611338
  _Iyear_95  |   .6933473   .0736497     9.41   0.000     .5455583    .8411363
  _Iyear_96  |   .5959437   .0756503     7.88   0.000     .4441402    .7477472
  _Iyear_97  |   .5460182   .0636727     8.58   0.000     .4182496    .6737868
  _Iyear_98  |    .418129   .0585967     7.14   0.000     .3005461     .535712
  _Iyear_99  |    .195634   .0563317     3.47   0.001     .0825961    .3086718
 _Iyear_100  |   .1624533    .034786     4.67   0.000       .09265    .2322566
 _Iyear_101  |          0  (omitted)
 _Iyear_102  |          0  (omitted)
 _Iyear_103  |          0  (omitted)
 _Iyear_104  |          0  (omitted)
       _cons |   6.401579   .0936067    68.39   0.000     6.213743    6.589414
------------------------------------------------------------------------------
```

```
74.
75.
76. use "curfews_class.dta", clear
  (UNIFORM CRIME REPORTING PROGRAM [UNITED STATES]: ARRESTS BY AGE, SEX, AND RACE F)

77. gen E = 0

78. replace E = 1 if t==0
  (53 real changes made)

79. egen cityid=group(city)

80. tsset cityid year
        panel variable:  cityid (unbalanced)
         time variable:  year, 80 to 104
                 delta:  1 unit

81. gen Emin= year-enacted <=-8

82. gen Emax= year-enacted >=8

83. xi: areg lnarrests Emin l(-8/-2).E E l(1/8).E Emax i.year, abs(city) cluster(city)
  i.year            _Iyear_80-104       (naturally coded; _Iyear_80 omitted)
  note: _Iyear_81 omitted because of collinearity
  note: _Iyear_82 omitted because of collinearity
  note: _Iyear_83 omitted because of collinearity
  note: _Iyear_84 omitted because of collinearity
  note: _Iyear_85 omitted because of collinearity
  note: _Iyear_86 omitted because of collinearity
  note: _Iyear_87 omitted because of collinearity
  note: _Iyear_96 omitted because of collinearity
  note: _Iyear_97 omitted because of collinearity
  note: _Iyear_98 omitted because of collinearity
  note: _Iyear_99 omitted because of collinearity
  note: _Iyear_100 omitted because of collinearity
  note: _Iyear_101 omitted because of collinearity
  note: _Iyear_102 omitted because of collinearity
  note: _Iyear_103 omitted because of collinearity
  note: _Iyear_104 omitted because of collinearity

  Linear regression, absorbing indicators         Number of obs     =        469
  Absorbed variable: city                         No. of categories =         53
                                                  F( 26,     52)    =       4.84
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.9204
                                                  Adj R-squared     =     0.9044
                                                  Root MSE          =     0.2114

                                  (Std. Err. adjusted for 53 clusters in city)
------------------------------------------------------------------------------
             |               Robust
  lnarrests  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Emin |  -1.488231     .42532    -3.50   0.001    -2.341698   -.6347638
             |
           E |
         F8. |    .519642   .1345722     3.86   0.000     .2496032    .7896809
         F7. |  -.8386986   .2953366    -2.84   0.006    -1.431335   -.2460623
         F6. |  -.5772265   .2311826    -2.50   0.016    -1.041128   -.1133247
         F5. |  -.4341995   .1962559    -2.21   0.031    -.8280157   -.0403832
         F4. |  -.2794023   .1442147    -1.94   0.058    -.5687902    .0099857
         F3. |  -.1816403    .107071    -1.70   0.096    -.3964939    .0332134
         F2. |  -.1193545   .0578467    -2.06   0.044    -.2354324   -.0032767
         --. |   .0541049     .05992     0.90   0.371    -.0661334    .1743433
         L1. |   .1077491   .1078422     1.00   0.322    -.1086521    .3241503
         L2. |    .212421   .1639207     1.30   0.201      -.11651     .541352
         L3. |   .3147216   .1964221     1.60   0.115    -.0794282    .7088713
         L4. |   .4158056   .2454492     1.69   0.096    -.0767243    .9083355
         L5. |   .5290282   .2994525     1.77   0.083    -.0718672    1.129924
         L6. |   .5572138   .3556861     1.57   0.123    -.1565226     1.27095
         L7. |   .6237412   .3790993     1.65   0.106    -.1369772     1.38446
         L8. |  -.2791975   .1257733    -2.22   0.031    -.5315801   -.0268149
```

Emax	**1.033134**	**.4574424**	**2.26**	**0.028**	**.1152085**	**1.951059**
_Iyear_81	**0**	(omitted)				
_Iyear_82	**0**	(omitted)				
_Iyear_83	**0**	(omitted)				
_Iyear_84	**0**	(omitted)				
_Iyear_85	**0**	(omitted)				
_Iyear_86	**0**	(omitted)				
_Iyear_87	**0**	(omitted)				
_Iyear_88	**.8150481**	**.3632039**	**2.24**	**0.029**	**.0862261**	**1.54387**
_Iyear_89	**.7678755**	**.321015**	**2.39**	**0.020**	**.1237118**	**1.412039**
_Iyear_90	**.6749141**	**.2841062**	**2.38**	**0.021**	**.1048133**	**1.245015**
_Iyear_91	**.6075705**	**.2483726**	**2.45**	**0.018**	**.1091745**	**1.105967**
_Iyear_92	**.5142695**	**.1970445**	**2.61**	**0.012**	**.1188706**	**.9096683**
_Iyear_93	**.3902911**	**.1524401**	**2.56**	**0.013**	**.0843977**	**.6961844**
_Iyear_94	**.3431697**	**.1078656**	**3.18**	**0.002**	**.1267215**	**.5596179**
_Iyear_95	**.2148582**	**.0566002**	**3.80**	**0.000**	**.1012815**	**.3284348**
_Iyear_96	**0**	(omitted)				
_Iyear_97	**0**	(omitted)				
_Iyear_98	**0**	(omitted)				
_Iyear_99	**0**	(omitted)				
_Iyear_100	**0**	(omitted)				
_Iyear_101	**0**	(omitted)				
_Iyear_102	**0**	(omitted)				
_Iyear_103	**0**	(omitted)				
_Iyear_104	**0**	(omitted)				
_cons	**6.46784**	**.2273642**	**28.45**	**0.000**	**6.011601**	**6.92408**

```
84.
85. *****
86. use "curfews_class.dta", clear
  (UNIFORM CRIME REPORTING PROGRAM [UNITED STATES]: ARRESTS BY AGE, SEX, AND RACE F)

87. gen E = 0

88. replace E = 1 if t==0
  (53 real changes made)

89. egen cityid=group(city)

90. tsset cityid year
         panel variable:  cityid (unbalanced)
          time variable:  year, 80 to 104
                  delta:  1 unit

91. gen Emin= year-enacted <=-5

92. gen Emax= year-enacted >=5

93. xi: areg lnarrests Emin l(-4/-1).E l(1/4).E Emax i.year i.t, abs(city) cluster(city)
  i.year            _Iyear_80-104       (naturally coded; _Iyear_80 omitted)
  i.t               _It_1-42            (_It_1 for t==-22 omitted)
  note: _Iyear_81 omitted because of collinearity
  note: _Iyear_82 omitted because of collinearity
  note: _Iyear_83 omitted because of collinearity
  note: _Iyear_100 omitted because of collinearity
  note: _Iyear_101 omitted because of collinearity
  note: _Iyear_102 omitted because of collinearity
  note: _Iyear_103 omitted because of collinearity
  note: _Iyear_104 omitted because of collinearity
  note: _It_2 omitted because of collinearity
  note: _It_3 omitted because of collinearity
  note: _It_4 omitted because of collinearity
  note: _It_18 omitted because of collinearity
  note: _It_19 omitted because of collinearity
  note: _It_20 omitted because of collinearity
  note: _It_21 omitted because of collinearity
  note: _It_22 omitted because of collinearity
  note: _It_23 omitted because of collinearity
  note: _It_24 omitted because of collinearity
  note: _It_25 omitted because of collinearity
```

```
note: _It_26 omitted because of collinearity
note: _It_27 omitted because of collinearity
note: _It_37 omitted because of collinearity
note: _It_38 omitted because of collinearity
note: _It_39 omitted because of collinearity
note: _It_40 omitted because of collinearity
note: _It_41 omitted because of collinearity
note: _It_42 omitted because of collinearity
```

Linear regression, absorbing indicators — Number of obs = **890**
Absorbed variable: **city** — No. of categories = **53**
F(43, 52) = **.**
Prob > F = **.**
R-squared = **0.8844**
Adj R-squared = **0.8697**
Root MSE = **0.2578**

(Std. Err. adjusted for **53** clusters in city)

lnarrests	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
Emin	.4081772	.2501423	1.63	0.109	-.0937701	.9101244
E						
F4.	.3584875	.2069415	1.73	0.089	-.0567709	.7737459
F3.	.3020376	.1598832	1.89	0.064	-.0187916	.6228667
F2.	.2001731	.1092006	1.83	0.073	-.0189539	.4193001
F1.	.1326059	.0623784	2.13	0.038	.0074344	.2577774
L1.	-.132287	.0555494	-2.38	0.021	-.243755	-.020819
L2.	-.2147102	.1151638	-1.86	0.068	-.4458032	.0163829
L3.	-.2725461	.154183	-1.77	0.083	-.5819369	.0368447
L4.	-.3449661	.197031	-1.75	0.086	-.7403378	.0504056
Emax	-.7951161	.6919207	-1.15	0.256	-2.183556	.5933243
_Iyear_81	0	(omitted)				
_Iyear_82	0	(omitted)				
_Iyear_83	0	(omitted)				
_Iyear_84	-.7955441	.775565	-1.03	0.310	-2.351829	.7607409
_Iyear_85	-.656969	.7240172	-0.91	0.368	-2.109816	.7958777
_Iyear_86	-.6196262	.6725804	-0.92	0.361	-1.969258	.730005
_Iyear_87	-.6142091	.6212582	-0.99	0.327	-1.860855	.6324367
_Iyear_88	-.5390393	.5733956	-0.94	0.352	-1.689642	.6115632
_Iyear_89	-.3826363	.5132245	-0.75	0.459	-1.412497	.6472241
_Iyear_90	-.2904415	.4631328	-0.63	0.533	-1.219785	.6389025
_Iyear_91	-.1772727	.4205025	-0.42	0.675	-1.021073	.6665273
_Iyear_92	-.0911659	.3679515	-0.25	0.805	-.8295145	.6471827
_Iyear_93	-.0403892	.3258346	-0.12	0.902	-.6942241	.6134457
_Iyear_94	.1053254	.2678978	0.39	0.696	-.4322509	.6429018
_Iyear_95	.1559764	.2162078	0.72	0.474	-.2778764	.5898291
_Iyear_96	.1274458	.1689622	0.75	0.454	-.2116017	.4664933
_Iyear_97	.1489101	.1227038	1.21	0.230	-.0973131	.3951334
_Iyear_98	.0926676	.0775196	1.20	0.237	-.0628868	.2482221
_Iyear_99	-.0609608	2.96e-06	-2.1e+04	0.000	-.0609667	-.0609548
_Iyear_100	0	(omitted)				
_Iyear_101	0	(omitted)				
_Iyear_102	0	(omitted)				
_Iyear_103	0	(omitted)				
_Iyear_104	0	(omitted)				
_It_2	0	(omitted)				
_It_3	0	(omitted)				
_It_4	0	(omitted)				
_It_5	.738834	.6783582	1.09	0.281	-.6223914	2.100059
_It_6	.9212447	.6242802	1.48	0.146	-.3314651	2.173955
_It_7	.0646275	.5704513	0.11	0.910	-1.080067	1.209322
_It_8	.7156258	.5157381	1.39	0.171	-.3192785	1.75053
_It_9	.6623238	.4693732	1.41	0.164	-.2795424	1.60419
_It_10	.3927616	.4749715	0.83	0.412	-.5603385	1.345862
_It_11	.3252515	.3798449	0.86	0.396	-.4369631	1.087466
_It_12	.2191146	.3754749	0.58	0.562	-.5343309	.9725601
_It_13	.1633016	.3064882	0.53	0.596	-.451712	.7783152
_It_14	.1967956	.2247198	0.88	0.385	-.2541377	.6477289

_It_15	.2078566	.164196	1.27	0.211	-.1216267	.53734
_It_16	.1080069	.1051435	1.03	0.309	-.102979	.3189928
_It_17	.0502498	.061717	0.81	0.419	-.0735945	.174094
_It_18	0	(omitted)				
_It_19	0	(omitted)				
_It_20	0	(omitted)				
_It_21	0	(omitted)				
_It_22	0	(omitted)				
_It_23	0	(omitted)				
_It_24	0	(omitted)				
_It_25	0	(omitted)				
_It_26	0	(omitted)				
_It_27	0	(omitted)				
_It_28	.3672781	.4500603	0.82	0.418	-.5358339	1.27039
_It_29	.2446411	.4150873	0.59	0.558	-.5882926	1.077575
_It_30	.0612234	.3752743	0.16	0.871	-.6918196	.8142665
_It_31	.0796239	.317661	0.25	0.803	-.5578095	.7170573
_It_32	-.0107267	.2759223	-0.04	0.969	-.5644054	.5429521
_It_33	.0257972	.2276906	0.11	0.910	-.4310974	.4826918
_It_34	-.0877256	.2150611	-0.41	0.685	-.5192773	.3438262
_It_35	-.2620729	.2022683	-1.30	0.201	-.6679539	.1438082
_It_36	-.6407679	.2856921	-2.24	0.029	-1.214051	-.0674847
_It_37	0	(omitted)				
_It_38	0	(omitted)				
_It_39	0	(omitted)				
_It_40	0	(omitted)				
_It_41	0	(omitted)				
_It_42	0	(omitted)				
_cons	7.044522	.3449762	20.42	0.000	6.352277	7.736768

94.
95.
96. log close
name: **<unnamed>**
log: **C:\Users\Lara\Documents\Econo2\hw4\hw4_log.smcl**
log type: **smcl**
closed on: **25 Apr 2020, 16:25:38**