HW5

Omair Shafi Ahmed

A

i) The coefficient is -0.368, suggests that the shall laws reduce violent crime by 36%

ii) The coefficient of shall without control variables is -0.443 (0.157) and -0.368 (0.114). The coefficient drop by little once the control variables are added.

iii) The effect of NRA lobbying and the prevalence of mental disorders resulting in gun related crimes.

B

Adding fixed state effects makes the coefficient on shall drop to -0.046. Had there not have been an omitted variable bias, the drop would not have been as significant, therefore the one with the fixed state effects is more credible.

C

Adding fixed time effects makes the coefficient further drop to -0.028. The time effects being jointly statistically significant, this regression is more credible than the one with just fixed time effects.

E

There could be a two way causality between incarceration rates and violent gun crimes or between crime and shall laws. This effect or the direction of it is hard to quantify at the moment.

F

The conclusion that could be drawn is that as far as this analysis goes, statistically, there is is no evidence of the effect of concealed weapons on crime rates.

Stata Log

```
regress lnvio shall, vce(robust)
```

```
Linear regression                               Number of obs =    1173
                                                F(  1,  1171) =   86.86
                                                Prob > F      =  0.0000
                                                R-squared     =  0.0866
                                                Root MSE      =  .61735

------------------------------------------------------------------------------
             |               Robust
       lnvio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       shall |  -.4429646   .0475283    -9.32   0.000    -.5362148   -.3497144
       _cons |   6.134919   .0193039   317.81   0.000     6.097045    6.172793
------------------------------------------------------------------------------
```

```
regress lnvio shall  incarc_rate density avginc pop pb1064 pw1064
pm1029, vce(robust)
```

```
Linear regression                               Number of obs =    1173
                                                F(  8,  1164) =   95.67
                                                Prob > F      =  0.0000
                                                R-squared     =  0.5643
                                                Root MSE      =  .42769

------------------------------------------------------------------------------
             |               Robust
       lnvio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       shall |  -.3683869   .0347879   -10.59   0.000     -.436641   -.3001329
 incarc_rate |   .0016126   .0001807     8.92   0.000     .0012581    .0019672
     density |   .0266885   .0143494     1.86   0.063    -.0014651     .054842
      avginc |   .0012051   .0072778     0.17   0.869     -.013074    .0154842
         pop |   .0427098   .0031466    13.57   0.000     .0365361    .0488836
      pb1064 |   .0808526   .0199924     4.04   0.000     .0416274    .1200778
      pw1064 |   .0312005   .0097271     3.21   0.001      .012116    .0502851
      pm1029 |   .0088709   .0120604     0.74   0.462    -.0147917    .0325334
       _cons |   2.981738   .6090198     4.90   0.000     1.786839    4.176638
------------------------------------------------------------------------------
```

```
xtreg lnvio shall incarc_rate density avginc pop pb1064 pw1064 pm1029,
fe vce(cluster stateid)
```

```
Fixed-effects (within) regression               Number of obs      =      1173
Group variable: stateid                         Number of groups   =        51

R-sq:  within  = 0.2178                         Obs per group: min =        23
       between = 0.0033                                        avg =      23.0
       overall = 0.0001                                        max =        23

                                                F(8,50)            =     34.10
corr(u_i, Xb)  = -0.3687                        Prob > F           =    0.0000

                                 (Std. Err. adjusted for 51 clusters in stateid)
------------------------------------------------------------------------------
             |               Robust
       lnvio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       shall |  -.0461415   .0417616    -1.10   0.275    -.1300223    .0377392
 incarc_rate |   -.000071   .0002504    -0.28   0.778    -.0005739    .0004318
     density |  -.1722901   .1376129    -1.25   0.216    -.4486936    .1041135
      avginc |  -.0092037   .0129649    -0.71   0.481    -.0352445     .016837
         pop |   .0115247    .014224     0.81   0.422    -.0170452    .0400945
      pb1064 |   .1042804   .0326849     3.19   0.002     .0386308    .1699301
      pw1064 |   .0408611   .0134585     3.04   0.004     .0138289    .0678932
      pm1029 |  -.0502725   .0206949    -2.43   0.019    -.0918394   -.0087057
       _cons |   3.866017   .7701057     5.02   0.000     2.319214    5.412819
-------------+----------------------------------------------------------------
     sigma_u |  .68024951
     sigma_e |  .16072287
         rho |  .94712779   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
xtreg lnvio shall incarc_rate density avginc pop pb1064 pw1064 pm1029
i.year,  fe vce(cluster stateid)
```

```
Fixed-effects (within) regression               Number of obs      =      1173
Group variable: stateid                         Number of groups   =        51

R-sq:  within  = 0.4180                         Obs per group: min =        23
       between = 0.0419                                        avg =      23.0
       overall = 0.0005                                        max =        23

                                                F(30,50)           =     55.86
corr(u_i, Xb)  = -0.2929                        Prob > F           =    0.0000

                                    (Std. Err. adjusted for 51 clusters in stateid)
------------------------------------------------------------------------------
             |               Robust
       lnvio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      shall |  -.0279555   .0407168    -0.69   0.495    -.1097757    .0538646
incarc_rate |   .000076    .0002079     0.37   0.716    -.0003416    .0004936
    density |  -.0915555   .1238622    -0.74   0.463    -.3403396    .1572286
     avginc |   .0009567   .0154931     0.06   0.954    -.0301688    .0320861
        pop |  -.0047544   .0152294    -0.31   0.756    -.0353438    .0258347
     pb1064 |   .0291662   .0485407     0.60   0.551    -.0681792    .1265116
     pw1064 |   .0092501   .0237564     0.39   0.699    -.0384659    .0569662
     pm1029 |   .0733254   .0524733     1.40   0.168    -.0320704    .1787211
            |
       year |
         78 |   .0585261   .0161556     3.62   0.001     .0260767    .0909755
         79 |   .1639466   .0244579     6.70   0.000     .1148233    .2130698
         80 |   .2170759   .0334184     6.50   0.000     .1499531    .2841987
         81 |   .2172551   .0391956     5.54   0.000     .1385284    .2959819
         82 |   .1946328   .0455743     4.18   0.000     .1010856      .28818
         83 |    .158645   .0593845     2.67   0.010     .0393676    .2779223
         84 |   .1929663   .0770021     2.51   0.015     .0383251    .3476515
         85 |   .2444764   .0922217     2.65   0.011     .0592438    .4297091
         86 |   .3240904   .1089181     2.98   0.004     .1053219    .5428589
         87 |    .324365   .1249881     2.60   0.012      .073319    .5754111
         88 |   .3867412   .1397074     2.77   0.008     .1061305    .6673518
         89 |   .4422143   .1535358     2.88   0.006     .1338286    .7505999
         90 |   .5430478   .1960859     2.77   0.008     .1491978     .936898
         91 |   .5959456   .2040685     2.92   0.005     .1860618    1.005829
         92 |   .6275171   .2170306     2.89   0.006     .1915982    1.063436
         93 |   .6497414   .2246177     2.89   0.006     .1985834    1.100899
         94 |   .6354167   .2332437     2.72   0.009     .1669349    1.103898
         95 |   .6276031   .2423607     2.59   0.013     .1408074    1.114399
         96 |   .5713423   .2534067     2.25   0.029      .06236    1.080325
         97 |   .5501153   .2613516     2.10   0.040     .0251751    1.075055
         98 |   .4932904   .2746546     1.80   0.079    -.0583697    1.044951
         99 |   .4328776   .2852197     1.51   0.137    -.1420117    1.007767
            |
      _cons |   3.765525   1.152108     3.27   0.002     1.451448    6.079603
-------------+----------------------------------------------------------------
    sigma_u |  .6663043
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