

1 **Introduction**

2 Some advocates argue that punitive school discipline prevents students from adequate education
3 and increases the risk of being ended up in prison. Down with Punitive Discipline (DPD) is a
4 program that offers training to school principals on conflict de-escalation and promoting
5 restorative justice. This study aimed to answer whether the DPD program had an impact on
6 students' suspensions.

7 **Methods**

8 This study is a longitudinal panel analysis (2009-2017) that examines within-district changes in
9 average student suspensions after implementing the DPD program. The sample includes 22
10 administrative districts of the NYC public school system. The data were sourced from the NYC
11 Board of Education, containing annual district-level totals of student suspensions from 2009 to
12 2017. The outcome measure is the probability of suspensions, while the treatment measure is
13 whether the DPD program was in place in a given district and year between 2009-2017. This
14 study first presents descriptive statistics to show the overall and yearly differences between
15 districts that have adopted a DPD and those that have not, using one-way ANOVA tests and
16 exploring their time trends. Then, Model 1, a simple bivariate regression analysis is used to
17 provide an overview. Furthermore, this study applies Model 2, a district fixed-effect regression
18 analysis, and Model 3, a district and time fixed-effect regression analysis, to estimate the DPD
19 program's impact to reduce bias. All analyses were conducted in STATA version 17, using
20 robust adjustment, and statistical significance is reported at the $\alpha = 0.05$ level.

21 **Result**

22 Descriptive Summary Table 1 provides a descriptive summary of the overall and yearly average
23 number of suspensions from 2009 to 2017. For the 10 districts that have ever taken the DPD

project, the average number of suspensions is 1976.69, 261.14 less than the average suspensions for the 12 districts that have never taken the DPD project, but the difference is not statistically significant. The gap may be associated with the schools that attend this program these groups have different profiles. Schools that took the DPD program, may be more exposed to this project because of higher income levels. These schools often have fewer students suspended compared to lower-income schools in the less informed district with students of color. Table 1 and Figure 1 display decreasing mean suspension trends over time across two groups of districts, indicating the possibility of a trend that affected both groups, even without the DPD program. Model 1 in Table 2 showed that on average DPD program implantation was associated with a 46.8% decrease in the likelihood of suspensions, and it is statistically significant. However, this coefficient contains omitted variable bias. Model 2 in Table 2 showed that, DPD program implantation was associated with a 75.8% decrease in the likelihood of suspensions on average with statistical significance, representing the Model 1 estimate is biased downward. Thus, after absorbing some time-invariant omitted variables via the fixed effect, the coefficient approached its true value. The direction of the coefficient of omitted variables and attending the DPD program and the coefficient of omitted variables with the likelihood of suspension should be the same. Lower-income districts are more prone to instability and student suspensions, but they are also more likely to join the DPD program. Model 3 in Table 2 showed that, after controlling for the time-fixed effects, the coefficient of the DPD on suspension was reduced to only a 10.4% decrease in the likelihood on average, and the coefficient is no longer statistically significant. Thus, in Model 2, the coefficient of DPD is upward biased. Meanwhile, the years from 2013 to 2017's coefficients are all negative and statistically significant. The time-fixed effect is negatively associated with suspension but positively associated with DPD, capturing variables

that are constant across districts but change over time. For example, the NYC government may have implemented a law, which prevented all districts from over-suspending students; or a city-wide wave may have aroused the consciousness of all districts to limit student suspension. This corresponds to Figure 1's time trend as well.

Conclusions

This study shows, there's not enough evidence to conclude that the DPD program itself had an impact on students' likelihood of getting suspended. Rather, there was likely some time-related event that happened to all NYC districts across the time that decreased the average student suspension rates, although such effects may vary in different districts.

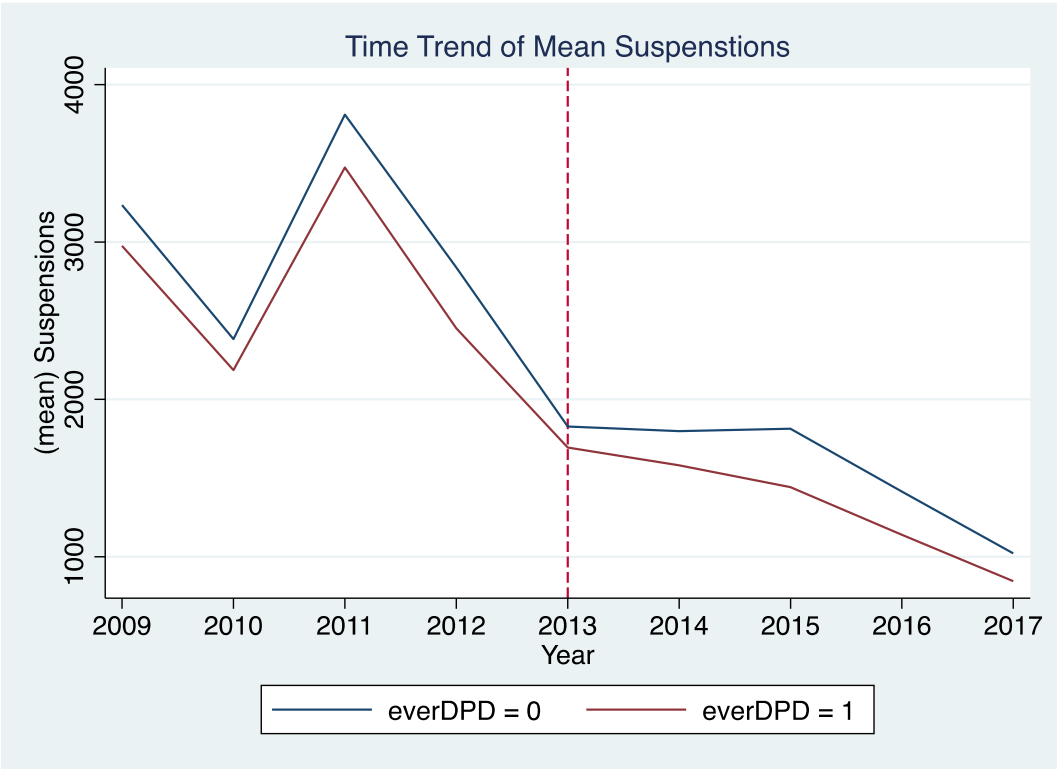
Limitations

First, given NYC only contains 22 administrative districts, there is not sufficient variation in the value of districts that had the experience of not participating in DPD and participating in DPD between 2009 and 2017. Among all the 22 districts, only 10 districts had their program status "switched" to have strong statistical power, threatening the conclusion's validity. Second, omitted time-varying fixed effects within a district and district-varying time effects within a period might have biased the estimates of the analysis and threatened the internal validity. For instance, as principals in a district gain experience, they become more adept at managing misbehaving students, leading to lower suspension rates and a greater likelihood of joining the DPD program. Third, the impacts are estimated from districts that once joined the DPD program, but those are likely to be self-selected, so the estimate may not be typical of similar programs elsewhere or happened in a different time period. Fourth, the suspension rates may not be the best measure to capture the DPD program's effect, because suspension rates are affected by many pathways other than the principle's conflict de-escalation skills.

| TABLE 1 - Descriptive Statistics for Administrative District Panel Data: New York City, 2009-2017 | | | |
|--|--|---|---------|
| Variable | Districts that ever took DPD project (n=10) Mean(SD) | Districts that never took DPD project (n=12) Mean(SD) | P value |
| Numbers of Suspensions (2009 to 2017) | 1976.69(2176.47) | 2237.83(905.27) | 0.36 |
| Numbers of Suspensions (2009 to 2012) | 2771.85(1485.6047) | 3066.10(2933.43) | 0.57 |
| Yearly Numbers of Suspensions | | | |
| 2009 | 2975.2 (1210.83) | 3234.33(2848.15) | 0.79 |
| 2010 | 2186.2 (963.05) | 2383 (2354.30) | 0.81 |
| 2011 | 3474.1 (1966.95) | 3809.08 (3572.11) | 0.79 |
| 2012 | 2451.9 (1487.47) | 2838 (3025.45) | 0.72 |
| 2013 | 1694.5 (719.20) | 1827.67 (1924.31) | 0.84 |
| 2014 | 1581.5 (762.66) | 1798.83 (1781.26) | 0.72 |
| 2015 | 1442.3 (616.71) | 1813.67 (1682.20) | 0.52 |
| 2016 | 1140.1 (690.78) | 1414.17 (1429.89) | 0.59 |
| 2017 | 844.4 (496.277) | 1021.75 (1168.45) | 0.66 |
| * p < .05 for an ANOVA test of no difference between mean suspension | | | |

80

Figure 1



81

82

Table 2

| | (1) | (2) | (3) |
|---------------------------------------|------------------------------|------------------------|-----------------------|
| | DPD on Sus | DPD on Sus | DPD on Sus |
| VARIABLES | Simple Bivariable Regression | FE Regression Implicit | Implicit |
| DPD | -0.468*** (0.106) | -0.758*** (0.0506) | -0.104 (0.0717) |
| 2010.Year | | | -0.322*** (0.0472) |
| 2011.Year | | | 0.136** (0.0571) |
| 2012.Year | | | -0.219** (0.0847) |
| 2013.Year | | | -0.589*** (0.0949) |
| 2014.Year | | | -0.592*** (0.0894) |
| 2015.Year | | | -0.622*** (0.0772) |
| 2016.Year | | | -0.889*** (0.0832) |
| 2017.Year | | | -1.228*** (0.0955) |
| Constant | 7.488*** (0.0575) | 7.552*** (0.0113) | 7.888*** (0.0592) |
| Observations | 198 | 198 | 198 |
| R-squared | 0.075 | 0.301 | 0.842 |
| Number of District | | 22 | 22 |
| District FE | | YES | YES |
| Year FE | | | YES |
| Robust standard errors in parentheses | | | |
| *** p<0.01, ** p<0.05, * p<0.1 | | | |

```

name: <unnamed>
log: /Users/wsqr/Desktop/Estimating Impact in Policy Research/Graded Assignment 4/WangSiqiAssignment4
> _log.smcl
log type: smcl
opened on: 5 May 2023, 23:57:19

```

```

1 .
2 . * Generate Treatment variable DPD
3 . gen DPD = 0

4 . replace DPD = 1 if (inlist(District, 1,5,6,7) & Year>=2013) | (inlist(District, 8,9,14,17,20,21) & Year>=2
> 014)
(44 real changes made)

5 .
6 . gen everDPD=1 if (inlist(District,1,5,6,7,8,9,14,17,20,21))
(108 missing values generated)

7 . replace everDPD=0 if (inlist(District,2,3,4,10,11,12,13,15,16,18,19,22))
(108 real changes made)

8 . save "Suspensions 2009 to 2017_panel.dta",replace
file Suspensions 2009 to 2017_panel.dta saved

9 .
10 . oneway Suspensions everDPD,tabulate

```

| everDPD | Summary of Annual suspensions | | |
|---------|-------------------------------|------------------|------------|
| | Mean | Std. dev. | Freq. |
| 0 | 2237.8333 | 2395.5053 | 108 |
| 1 | 1976.6889 | 1324.8823 | 90 |
| Total | 2119.1313 | 1981.6216 | 198 |

| Source | Analysis of variance | | | F | Prob > F |
|----------------|----------------------|------------|-------------------|-------------|---------------|
| | SS | df | MS | | |
| Between groups | 3347824.3 | 1 | 3347824.3 | 0.85 | 0.3571 |
| Within groups | 770236570 | 196 | 3929778.42 | | |
| Total | 773584395 | 197 | 3926824.34 | | |

Bartlett's equal-variances test: chi2(1) = **31.0573** Prob>chi2 = **0.000**

11 . oneway Suspensions everDPD if (inlist(Year,2009,2010,2011,2012)), tabulate

| everDPD | Summary of Annual suspensions | | |
|---------|-------------------------------|------------------|-----------|
| | Mean | Std. dev. | Freq. |
| 0 | 3066.1042 | 2933.4317 | 48 |
| 1 | 2771.85 | 1485.6047 | 40 |
| Total | 2932.3523 | 2379.0247 | 88 |

| Source | Analysis of variance | | | | |
|----------------|----------------------|-----------|-------------------|-------------|---------------|
| | SS | df | MS | F | Prob > F |
| Between groups | 1889138.5 | 1 | 1889138.5 | 0.33 | 0.5664 |
| Within groups | 490509838 | 86 | 5703602.76 | | |
| Total | 492398976 | 87 | 5659758.35 | | |

Bartlett's equal-variances test: chi2(1) = **17.4943** Prob>chi2 = **0.000**

12 .

13 . oneway Suspensions everDPD if Year==2013, tabulate

| everDPD | Summary of Annual suspensions | | |
|---------|-------------------------------|------------------|-----------|
| | Mean | Std. dev. | Freq. |
| 0 | 1827.6667 | 1924.3062 | 12 |
| 1 | 1694.5 | 719.20268 | 10 |
| Total | 1767.1364 | 1471.7093 | 22 |

| Source | Analysis of variance | | | | |
|----------------|----------------------|-----------|-------------------|-------------|---------------|
| | SS | df | MS | F | Prob > F |
| Between groups | 96727.4242 | 1 | 96727.4242 | 0.04 | 0.8385 |
| Within groups | 45387769.2 | 20 | 2269388.46 | | |
| Total | 45484496.6 | 21 | 2165928.41 | | |

Bartlett's equal-variances test: chi2(1) = **7.5407** Prob>chi2 = **0.006**

14 . oneway Suspensions everDPD if Year==2014, tabulate

| everDPD | Summary of Annual suspensions | | |
|---------|-------------------------------|------------------|-----------|
| | Mean | Std. dev. | Freq. |
| 0 | 1798.8333 | 1781.2555 | 12 |
| 1 | 1581.5 | 762.66146 | 10 |
| Total | 1700.0455 | 1386.9132 | 22 |

| Source | Analysis of variance | | | | |
|----------------|----------------------|-----------|-------------------|-------------|---------------|
| | SS | df | MS | F | Prob > F |
| Between groups | 257638.788 | 1 | 257638.788 | 0.13 | 0.7239 |
| Within groups | 40136456.2 | 20 | 2006822.81 | | |
| Total | 40394095 | 21 | 1923528.33 | | |

Bartlett's equal-variances test: $\chi^2(1) = 5.8125$ Prob> $\chi^2 = 0.016$

15 . oneway Suspensions everDPD if Year==2015, tabulate

| everDPD | Summary of Annual suspensions | | |
|---------|-------------------------------|------------------|-----------|
| | Mean | Std. dev. | Freq. |
| 0 | 1813.6667 | 1682.1975 | 12 |
| 1 | 1442.3 | 616.71406 | 10 |
| Total | 1644.8636 | 1296.5697 | 22 |

| Source | Analysis of variance | | | | |
|----------------|----------------------|-----------|-------------------|-------------|---------------|
| | SS | df | MS | F | Prob > F |
| Between groups | 752253.824 | 1 | 752253.824 | 0.44 | 0.5169 |
| Within groups | 34550698.8 | 20 | 1727534.94 | | |
| Total | 35302952.6 | 21 | 1681092.98 | | |

Bartlett's equal-variances test: $\chi^2(1) = 7.7969$ Prob> $\chi^2 = 0.005$

16 . oneway Suspensions everDPD if Year==2016, tabulate

| everDPD | Summary of Annual suspensions | | |
|---------|-------------------------------|------------------|-----------|
| | Mean | Std. dev. | Freq. |
| 0 | 1414.1667 | 1429.8881 | 12 |
| 1 | 1140.1 | 690.78465 | 10 |
| Total | 1289.5909 | 1137.9751 | 22 |

| Source | Analysis of variance | | | | |
|----------------|----------------------|-----------|-------------------|-------------|---------------|
| | SS | df | MS | F | Prob > F |
| Between groups | 409704.752 | 1 | 409704.752 | 0.31 | 0.5863 |
| Within groups | 26785030.6 | 20 | 1339251.53 | | |
| Total | 27194735.3 | 21 | 1294987.4 | | |

Bartlett's equal-variances test: $\chi^2(1) = 4.4103$ Prob> $\chi^2 = 0.036$

```
17 . oneway Suspensions everDPD if Year==2017, tabulate
```

| everDPD | Summary of Annual suspensions | | |
|---------|-------------------------------|-----------|-------|
| | Mean | Std. dev. | Freq. |
| 0 | 1021.75 | 1168.4515 | 12 |
| 1 | 844.4 | 496.27707 | 10 |
| Total | 941.13636 | 910.42242 | 22 |

| Source | Analysis of variance | | | | |
|----------------|----------------------|----|------------|------|----------|
| | SS | df | MS | F | Prob > F |
| Between groups | 171561.941 | 1 | 171561.941 | 0.20 | 0.6603 |
| Within groups | 17234686.6 | 20 | 861734.332 | | |
| Total | 17406248.6 | 21 | 828868.981 | | |

Bartlett's equal-variances test: chi2(1) = 5.9106 Prob>chi2 = 0.015

```
18 .
19 .
20 . *****
21 . use "Suspensions 2009 to 2017.dta",clear
22 .
23 . gen everDPD=1 if (inlist(District,1,5,6,7,8,9,14,17,20,21))
    (108 missing values generated)
24 . replace everDPD=0 if (inlist(District,2,3,4,10,11,12,13,15,16,18,19,22))
    (108 real changes made)
25 .
26 . collapse (mean)meanSuS=Suspensions, by(District everDPD)
27 . sort District everDPD
28 .
29 . * Difference between evertreated==0 and evertreated==1
30 . ** Notes: Suspensions(Continuous), Treatment(Nominal)
31 . oneway meanSuS everDPD,tabulate
```

| everDPD | Summary of (mean) Suspensions | | |
|---------|-------------------------------|-----------|-------|
| | Mean | Std. dev. | Freq. |
| 0 | 2237.8333 | 2176.4671 | 12 |
| 1 | 1976.6889 | 905.27396 | 10 |
| Total | 2119.1313 | 1688.2615 | 22 |

| Source | Analysis of variance | | | | |
|----------------|----------------------|-----------|-------------------|-------------|---------------|
| | SS | df | MS | F | Prob > F |
| Between groups | 371980.571 | 1 | 371980.571 | 0.13 | 0.7273 |
| Within groups | 59482786.6 | 20 | 2974139.33 | | |
| Total | 59854767.2 | 21 | 2850227.01 | | |

Bartlett's equal-variances test: $\chi^2(1) = 6.1684$ Prob> $\chi^2 = 0.013$

```

32 . save "descriptive_everDPD_general.dta", replace
    file descriptive_everDPD_general.dta saved

33 . *****
34 . use "Suspensions 2009 to 2017.dta",clear

35 . gen everDPD=1 if (inlist(District,1,5,6,7,8,9,14,17,20,21))
    (108 missing values generated)

36 . replace everDPD=0 if (inlist(District,2,3,4,10,11,12,13,15,16,18,19,22))
    (108 real changes made)

37 . collapse (mean)meanSuS=Suspensions, by(Year everDPD)

38 . sort Year everDPD

39 .
40 . xtset everDPD Year

Panel variable: everDPD (strongly balanced)
Time variable: Year, 2009 to 2017
Delta: 1 unit

41 . xtline meanSuS,overlay title("Time Trend of Mean Suspenstions" , size(meansmall)) xlabel(#9) xline(2013,lp
> attern(-))
    (note: named style meansmall not found in class gsize, default attributes used)

42 . graph export group.png,replace
    file /Users/wsq/Desktop/Estimating Impact in Policy Research/Graded Assignment 4/group.png saved as PNG
    format

43 . save "meanSuS_time_trend.dta",replace
    file meanSuS_time_trend.dta saved

44 . *****

```

```

45 .
46 . use "Suspensions 2009 to 2017_panel.dta"

47 . * 2: Simple Bivariate Regression
48 . gen lnsus=ln(Suspensions)

49 . reg lnsus DPD, robust

```

```

Linear regression              Number of obs   =       198
                              F(1, 196)         =       19.37
                              Prob > F           =       0.0000
                              R-squared          =       0.0746
                              Root MSE       =       .6891

```

| lnsus | Coefficient | Robust std. err. | t | P> t | [95% conf. interval] | |
|-------|-------------|---------------------|--------|-------|----------------------|-----------|
| DPD | -.4680992 | .1063552 | -4.40 | 0.000 | -.6778467 | -.2583517 |
| _cons | 7.487745 | .0575452 | 130.12 | 0.000 | 7.374258 | 7.601232 |

```

50 . outreg2 using Assignment4Table2,excel ctitle(DPD on Sus,Simple Bivariable Regression) append
    Assignment4Table2.xml
    dir : seeout

```

```

51 .
52 . * 3: District Fixed Effects
53 . xtset District

```

Panel variable: **District** (balanced)

```

54 . xtreg lnsus DPD, fe robust

```

```

Fixed-effects (within) regression      Number of obs   =       198
Group variable: District              Number of groups =       22

```

```

R-squared:                             Obs per group:
    Within = 0.3008                      min =          9
    Between = 0.0010                     avg  =         9.0
    Overall = 0.0746                      max  =          9

```

```

                                F(1,21)      =       223.99
corr(u_i, Xb) = -0.2081          Prob > F      =       0.0000

```

(Std. err. adjusted for 22 clusters in District)

| lnsus | Coefficient | Robust std. err. | t | P> t | [95% conf. interval] | |
|---------|-------------|-----------------------------------|--------|-------|----------------------|-----------|
| DPD | -.7577571 | .0506311 | -14.97 | 0.000 | -.8630503 | -.6524639 |
| _cons | 7.552113 | .0112514 | 671.22 | 0.000 | 7.528715 | 7.575512 |
| sigma_u | .59217916 | | | | | |
| sigma_e | .4117293 | | | | | |
| rho | .67412161 | (fraction of variance due to u_i) | | | | |

```

55 . outreg2 using Assignment4Table2,excel ctitle(DPD on Sus,FE Regression Implicit) addtext(District FE,YES) ap
> pend
Assignment4Table2.xml
dir : seeout

```

```

56 .
57 . reg lnsus DPD i.District, robust

```

```

Linear regression              Number of obs   =      198
                              F(22, 175)        =      30.93
                              Prob > F          =      0.0000
                              R-squared         =      0.7050
                              Root MSE      =      .41173

```

| lnsus | Coefficient | Robust std. err. | t | P> t | [95% conf. interval] | |
|----------|-------------|---------------------|--------|-------|----------------------|-----------|
| DPD | -.7577571 | .0674117 | -11.24 | 0.000 | -.8908018 | -.6247125 |
| District | | | | | | |
| 2 | -.5566188 | .2015494 | -2.76 | 0.006 | -.9543992 | -.1588384 |
| 3 | -.7420757 | .1516761 | -4.89 | 0.000 | -1.041425 | -.4427259 |
| 4 | -.9043118 | .2242851 | -4.03 | 0.000 | -1.346964 | -.4616599 |
| 5 | .0226251 | .162013 | 0.14 | 0.889 | -.2971259 | .342376 |
| 6 | .5547063 | .1259204 | 4.41 | 0.000 | .3061882 | .8032245 |
| 7 | .7501247 | .1284637 | 5.84 | 0.000 | .4965872 | 1.003662 |
| 8 | -.1315095 | .1593781 | -0.83 | 0.410 | -.4460601 | .1830412 |
| 9 | .2809297 | .1542225 | 1.82 | 0.070 | -.0234457 | .5853052 |
| 10 | 1.282264 | .1642808 | 7.81 | 0.000 | .9580372 | 1.60649 |
| 11 | -.4934533 | .2413805 | -2.04 | 0.042 | -.9698449 | -.0170617 |
| 12 | -.3979248 | .1567453 | -2.54 | 0.012 | -.7072793 | -.0885703 |
| 13 | -1.196147 | .2041537 | -5.86 | 0.000 | -1.599067 | -.7932263 |
| 14 | -.9468674 | .1118741 | -8.46 | 0.000 | -1.167663 | -.7260713 |
| 15 | -.5986276 | .1786447 | -3.35 | 0.001 | -.951203 | -.2460523 |
| 16 | .072778 | .2098975 | 0.35 | 0.729 | -.3414784 | .4870344 |
| 17 | -.5296157 | .1326298 | -3.99 | 0.000 | -.7913755 | -.2678558 |
| 18 | -.4058699 | .1782205 | -2.28 | 0.024 | -.757608 | -.0541317 |
| 19 | -.2697697 | .207447 | -1.30 | 0.195 | -.6791896 | .1396502 |
| 20 | -.4353226 | .1265453 | -3.44 | 0.001 | -.6850741 | -.1855712 |
| 21 | .3736307 | .1279651 | 2.92 | 0.004 | .1210771 | .6261843 |
| 22 | -.1441826 | .1522799 | -0.95 | 0.345 | -.4447242 | .156359 |
| _cons | 7.752806 | .103753 | 74.72 | 0.000 | 7.548038 | 7.957574 |

```

58 . outreg2 using Assignment4Table3,excel ctitle(District Fixed Effects,FE Regression Explicit) addtext(District
> t FE,YES) append
Assignment4Table3.xml
dir : seeout

```

```

59 .
60 . * 4: District Fixed Effects with Time Effects
61 . xtset District Year

```

Panel variable: **District** (strongly balanced)
Time variable: **Year, 2009 to 2017**
Delta: **1 unit**

```

62 . xtreg lnsus DPD i.Year, fe robust

```

Fixed-effects (within) regression Number of obs = **198**
Group variable: **District** Number of groups = **22**

R-squared: Obs per group:

| | | |
|-------------------------|-------|------------|
| Within = 0.8416 | min = | 9 |
| Between = 0.0010 | avg = | 9.0 |
| Overall = 0.3520 | max = | 9 |

corr(u_i, Xb) = **-0.0047** F(9,21) = **76.23**
Prob > F = **0.0000**

(Std. err. adjusted for **22** clusters in District)

| lnsus | Coefficient | Robust std. err. | t | P> t | [95% conf. interval] | |
|---------|------------------|-----------------------------------|---------------|--------------|----------------------|------------------|
| DPD | -.1043419 | .0716725 | -1.46 | 0.160 | -.2533929 | .0447092 |
| Year | | | | | | |
| 2010 | -.3216898 | .0472347 | -6.81 | 0.000 | -.4199198 | -.2234599 |
| 2011 | .1355344 | .0570698 | 2.37 | 0.027 | .0168514 | .2542174 |
| 2012 | -.2193401 | .0846747 | -2.59 | 0.017 | -.3954307 | -.0432494 |
| 2013 | -.588756 | .0948503 | -6.21 | 0.000 | -.786008 | -.391504 |
| 2014 | -.5920856 | .0894045 | -6.62 | 0.000 | -.7780124 | -.4061588 |
| 2015 | -.6215099 | .0771704 | -8.05 | 0.000 | -.7819945 | -.4610253 |
| 2016 | -.8892434 | .0831913 | -10.69 | 0.000 | -1.062249 | -.7162376 |
| 2017 | -1.228354 | .0955371 | -12.86 | 0.000 | -1.427035 | -1.029674 |
| _cons | 7.887515 | .0592131 | 133.21 | 0.000 | 7.764375 | 8.010655 |
| sigma_u | .5560963 | | | | | |
| sigma_e | .20061645 | | | | | |
| rho | .8848409 | (fraction of variance due to u_i) | | | | |

```

63 . outreg2 using Assignment4Table2,excel ctitle(DPD on Sus,Implicit) addtext(District FE,YES,Year FE,YES) appe
> nd
Assignment4Table2.xml
dir : seeout

```

```

64 .
65 . reg lnsus DPD i.District i.Year,robust

```

```

Linear regression              Number of obs   =       198
                              F(30, 167)       =      187.58
                              Prob > F         =       0.0000
                              R-squared        =       0.9332
                              Root MSE     =       .20062

```

| lnsus | Coefficient | Robust std. err. | t | P> t | [95% conf. interval] | |
|----------|-------------|---------------------|--------|-------|----------------------|-----------|
| DPD | -.1043419 | .056548 | -1.85 | 0.067 | -.2159831 | .0072993 |
| District | | | | | | |
| 2 | -.1936103 | .0936307 | -2.07 | 0.040 | -.3784626 | -.0087581 |
| 3 | -.3790672 | .0941848 | -4.02 | 0.000 | -.5650136 | -.1931208 |
| 4 | -.5413033 | .1024285 | -5.28 | 0.000 | -.7435249 | -.3390817 |
| 5 | .0226251 | .1154935 | 0.20 | 0.845 | -.2053903 | .2506405 |
| 6 | .5547063 | .1203764 | 4.61 | 0.000 | .3170507 | .7923619 |
| 7 | .7501247 | .0957492 | 7.83 | 0.000 | .5610899 | .9391596 |
| 8 | -.0589078 | .1039464 | -0.57 | 0.572 | -.2641261 | .1463106 |
| 9 | .3535314 | .0934255 | 3.78 | 0.000 | .1690842 | .5379786 |
| 10 | 1.645272 | .0834754 | 19.71 | 0.000 | 1.480469 | 1.810075 |
| 11 | -.1304448 | .1449289 | -0.90 | 0.369 | -.4165738 | .1556841 |
| 12 | -.0349163 | .1150599 | -0.30 | 0.762 | -.2620759 | .1922432 |
| 13 | -.8331382 | .0952604 | -8.75 | 0.000 | -1.021208 | -.6450683 |
| 14 | -.8742657 | .0981174 | -8.91 | 0.000 | -1.067976 | -.6805553 |
| 15 | -.2356192 | .0972449 | -2.42 | 0.016 | -.4276069 | -.0436314 |
| 16 | .4357865 | .102916 | 4.23 | 0.000 | .2326024 | .6389705 |
| 17 | -.457014 | .0765211 | -5.97 | 0.000 | -.6080874 | -.3059405 |
| 18 | -.0428614 | .0841256 | -0.51 | 0.611 | -.2089481 | .1232252 |
| 19 | .0932387 | .1072557 | 0.87 | 0.386 | -.118513 | .3049904 |
| 20 | -.362721 | .0762491 | -4.76 | 0.000 | -.5132573 | -.2121846 |
| 21 | .4462324 | .0818236 | 5.45 | 0.000 | .2846905 | .6077743 |
| 22 | .2188259 | .0970979 | 2.25 | 0.026 | .0271283 | .4105234 |
| Year | | | | | | |
| 2010 | -.3216898 | .068298 | -4.71 | 0.000 | -.4565285 | -.1868512 |
| 2011 | .1355344 | .069492 | 1.95 | 0.053 | -.0016616 | .2727304 |
| 2012 | -.2193401 | .0709195 | -3.09 | 0.002 | -.3593544 | -.0793257 |
| 2013 | -.588756 | .0824548 | -7.14 | 0.000 | -.7515441 | -.425968 |
| 2014 | -.5920856 | .0749409 | -7.90 | 0.000 | -.7400392 | -.444132 |
| 2015 | -.6215099 | .0751917 | -8.27 | 0.000 | -.7699586 | -.4730612 |
| 2016 | -.8892434 | .0710904 | -12.51 | 0.000 | -1.029595 | -.7488916 |
| 2017 | -1.228354 | .0832816 | -14.75 | 0.000 | -1.392775 | -1.063934 |
| _cons | 7.870403 | .0983925 | 79.99 | 0.000 | 7.676149 | 8.064656 |

```
66 . outreg2 using Assignment4Table3,excel ctitle(District Fixed Effects with Time Effects,Explicit) addtext(Dis
> trict FE,YES,Year FE,YES) append
Assignment4Table3.xml
dir : seeout

67 .
68 .
69 . save GradedAssignment4_WangSiqi, replace
file GradedAssignment4_WangSiqi.dta saved
```