Regression Results for TWFE Model (log HPPD)

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Summary Table

Table 1: Log(HPPD) Regressions with Facility & Month FE

	log(RN HPPD)	log(LPN HPPD)	log(CNA HPPD)	log(Total HPPD)
Treatment	-0.092***	0.010	-0.023***	-0.022***
	(0.016)	(0.009)	(0.005)	(0.005)
Government	0.066+	-0.013	-0.040**	-0.021*
	(0.035)	(0.015)	(0.012)	(0.008)
Non-profit	0.083*	0.007	0.040**	0.041**
	(0.036)	(0.027)	(0.014)	(0.013)
Chain	0.018	-0.009	-0.022***	-0.015***
	(0.014)	(0.008)	(0.005)	(0.004)
Beds	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
CCRC	-0.022	0.007	0.000	-0.004
	(0.015)	(0.012)	(0.007)	(0.006)
Occupancy rate	-0.004***	-0.004***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
% Medicare	0.005***	0.001**	0.001**	0.001***
	(0.001)	(0.000)	(0.000)	(0.000)
% Medicaid	0.000	-0.000**	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Case-mix Q2 (state)	0.007	0.009**	0.010***	0.008***
	(0.005)	(0.003)	(0.002)	(0.002)
Case-mix Q3 (state)	0.019**	0.015***	0.021***	0.018***
	(0.006)	(0.004)	(0.002)	(0.002)
Case-mix Q4 (state)	0.036***	0.029***	0.027***	0.027***
	(0.008)	(0.005)	(0.003)	(0.003)
Urban	-0.012	-0.014	-0.007	-0.003
	(0.028)	(0.019)	(0.010)	(0.008)
Num.Obs.	562385	563502	567346	567606

	log(RN HPPD)	log(LPN HPPD)	log(CNA HPPD)	log(Total HPPD)
R2	0.683	0.659	0.626	0.613
RMSE	0.45	0.28	0.17	0.16
Std.Errors	by:	by:	by:	by:
	cms_certification_number	cms_certification_number	cms_certification_number	cms_certification_number
	& year_month	& year_month	& year_month	& year_month
FE: cms_certification_number	X	X	X	X
FE: year_month	X	X	X	X
Facility FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
SE type	2-way clustered	2-way clustered	2-way clustered	2-way clustered

- p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Raw Summaries

```
summary(m1)
```

```
## OLS estimation, Dep. Var.: log(rn_hppd)
## Observations: 562,385
## Fixed-effects: cms_certification_number: 7,239,  year_month: 90
## Standard-errors: Clustered (cms_certification_number & year_month)
##                    Estimate Std. Error  t value         Pr(>|t|)
## treatment       -0.0918622844   0.016266  -5.6476 0.0000001920730843 ***
## government       0.0662720316   0.034533   1.9191 0.0581765681170694 .
## non_profit       0.0834641665   0.036217   2.3045 0.0235202966434339 *
## chain            0.0175482751   0.014006   1.2529 0.2135245114870218
## num_beds        -0.0000000719   0.000001  -0.0719 0.9428271774373987
## ccrc_facility   -0.0219972499   0.015402  -1.4282 0.1567412605408523
## occupancy_rate  -0.0035014847   0.000331 -10.5632          < 2.2e-16 ***
## pct_medicare     0.0048568065   0.000597   8.1322 0.0000000000023256 ***
## pct_medicaid     0.0001836333   0.000240   0.7651 0.4462489482861315
## cm_q_state_2     0.0072659129   0.005072   1.4324 0.1555266899120712
## cm_q_state_3     0.0186589857   0.006485   2.8772 0.0050211863114523 **
## cm_q_state_4     0.0355537952   0.007732   4.5981 0.0000140306933748 ***
## urban           -0.0117683555   0.028337  -0.4153 0.6789212156362279
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.445385     Adj. R2: 0.678721
##                 Within R2: 0.007915
```

```
summary(m2)
```

```
## OLS estimation, Dep. Var.: log(lpn_hppd)
## Observations: 563,502
## Fixed-effects: cms_certification_number: 7,224,  year_month: 90
```

```
## Standard-errors: Clustered (cms_certification_number & year_month)
##                    Estimate Std. Error   t value        Pr(>|t|)
## treatment        0.0102951320    0.008824    1.1667 0.246457235332
## government      -0.0125013952    0.015333   -0.8154 0.417047595788
## non_profit       0.0074557240    0.027444    0.2717 0.786506210424
## chain           -0.0094560182    0.008037   -1.1766 0.242491821938
## num_beds        -0.0000000219    0.000001   -0.0219 0.982570977300
## ccrc_facility    0.0070208488    0.011585    0.6060 0.546049263693
## occupancy_rate  -0.0037454619    0.000256  -14.6511      < 2.2e-16 ***
## pct_medicare     0.0013875899    0.000440    3.1520 0.002210179620 **
## pct_medicaid    -0.0004460406    0.000169   -2.6371 0.009866807166 **
## cm_q_state_2     0.0091818375    0.003155    2.9101 0.004564170891 **
## cm_q_state_3     0.0152607648    0.003705    4.1191 0.000084975246 ***
## cm_q_state_4     0.0285207874    0.004517    6.3140 0.000000010407 ***
## urban           -0.0144678579    0.019451   -0.7438 0.458961294836
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.277273     Adj. R2: 0.654768
##                  Within R2: 0.011417
```

summary(m3)

```
## OLS estimation, Dep. Var.: log(cna_hppd)
## Observations: 567,346
## Fixed-effects: cms_certification_number: 7,241,  year_month: 90
## Standard-errors: Clustered (cms_certification_number & year_month)
##                    Estimate Std. Error   t value            Pr(>|t|)
## treatment       -0.0226459257  0.0052576   -4.3073 0.000042448977099303 ***
## government      -0.0398912504  0.0124014   -3.2167 0.001808785443680769 **
## non_profit       0.0402801032  0.0136284    2.9556 0.003993716016404606 **
## chain           -0.0219541069  0.0046987   -4.6724 0.000010507972236171 ***
## num_beds        -0.0000000196  0.0000010   -0.0196 0.984412669862167466
## ccrc_facility    0.0001592445  0.0065340    0.0244 0.980610737392854537
## occupancy_rate  -0.0015050936  0.0001283  -11.7306          < 2.2e-16 ***
## pct_medicare     0.0007273464  0.0002414    3.0126 0.003372128423429640 **
## pct_medicaid    -0.0003551846  0.0000871   -4.0766 0.000099152231008109 ***
## cm_q_state_2     0.0095958012  0.0018571    5.1670 0.000001444381152875 ***
## cm_q_state_3     0.0208272283  0.0024219    8.5997 0.000000000000252878 ***
## cm_q_state_4     0.0270997595  0.0030622    8.8499 0.000000000000076834 ***
## urban           -0.0071939338  0.0101984   -0.7054 0.482404975240534384
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.17459     Adj. R2: 0.621487
##                  Within R2: 0.008353
```

summary(m4)

```
## OLS estimation, Dep. Var.: log(total_hppd)
## Observations: 567,606
```

```
## Fixed-effects: cms_certification_number: 7,242,  year_month: 90
## Standard-errors: Clustered (cms_certification_number & year_month)
##                   Estimate Std. Error  t value            Pr(>|t|)
## treatment      -0.0215762413  0.0045301  -4.7629 0.00000736445391364936 ***
## government     -0.0206260807  0.0081323  -2.5363 0.01294609490031088661 *
## non_profit      0.0407507566  0.0130849   3.1143 0.00248046226645099680 **
## chain          -0.0149395678  0.0040807  -3.6610 0.00042571934116905662 ***
## num_beds       -0.0000000261  0.0000010  -0.0261 0.97925671726423424435
## ccrc_facility  -0.0038437050  0.0059762  -0.6432 0.52176949757541524200
## occupancy_rate -0.0023466454  0.0001230 -19.0735            < 2.2e-16 ***
## pct_medicare    0.0014028925  0.0002210   6.3477 0.00000000895164975914 ***
## pct_medicaid   -0.0002828940  0.0000738  -3.8313 0.00023705267520708062 ***
## cm_q_state_2    0.0082838447  0.0016588   4.9940 0.00002924514929224656 ***
## cm_q_state_3    0.0178329577  0.0021360   8.3489 0.00000000000083264905 ***
## cm_q_state_4    0.0268134152  0.0027347   9.8049 0.00000000000000081022 ***
## urban          -0.0031803280  0.0078758  -0.4038 0.68732014387523032717
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## RMSE: 0.157579     Adj. R2: 0.607881
##                 Within R2: 0.017722
```